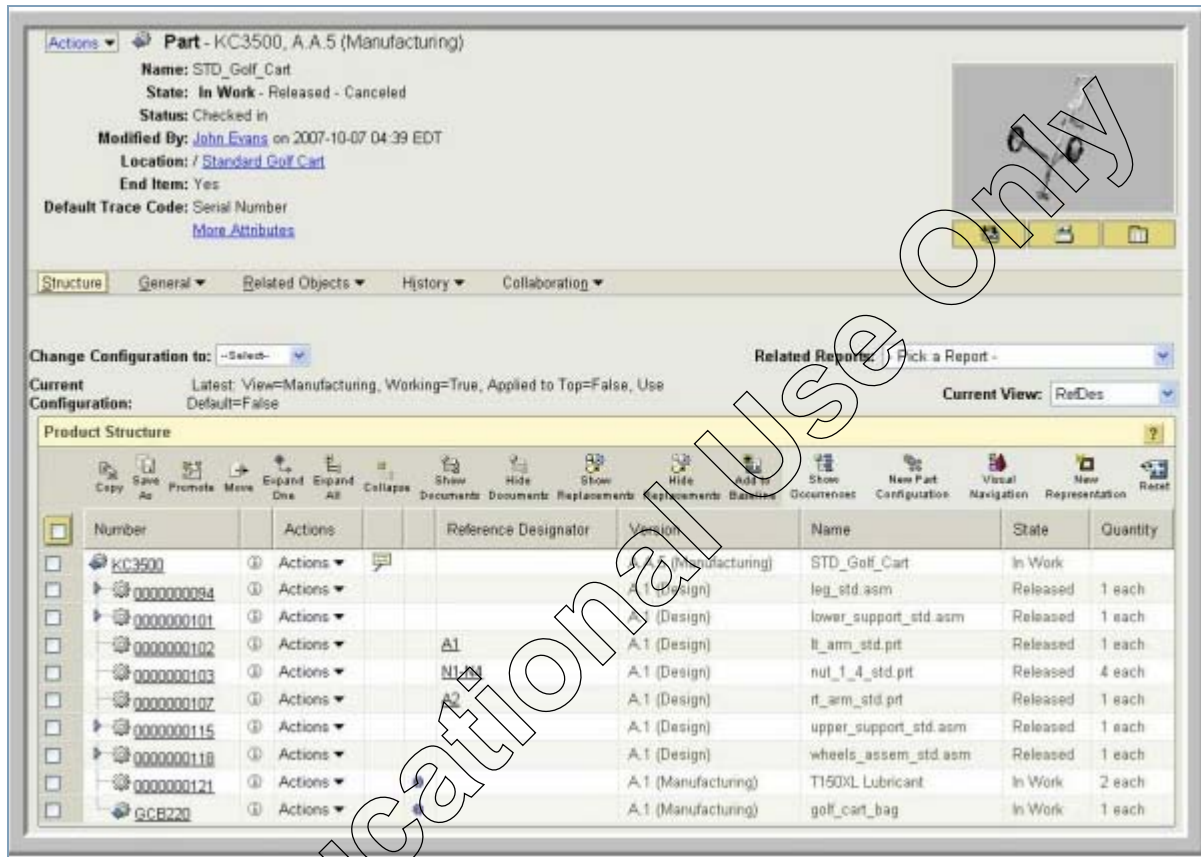


PTC Global Services



Introduction to Windchill PDMLink 9.0

T2136-090-01

Copyright © 2008 Parametric Technology Corporation. All Rights Reserved.

Copyright for PTC software products is with Parametric Technology Corporation, its subsidiary companies (collectively "PTC"), and their respective licensors. This software is provided under written license agreement, contains valuable trade secrets and proprietary information, and is protected by the copyright laws of the United States and other countries. It may not be copied or distributed in any form or medium, disclosed to third parties, or used in any manner not provided for in the software licenses agreement except with written prior approval from PTC.

UNAUTHORIZED USE OF SOFTWARE OR ITS DOCUMENTATION CAN RESULT IN CIVIL DAMAGES AND CRIMINAL PROSECUTION.

User and training guides and related documentation from PTC is subject to the copyright laws of the United States and other countries and is provided under a license agreement that restricts copying, disclosure, and use of such documentation. PTC hereby grants to the licensed software user the right to make copies in printed form of this documentation if provided on software media, but only for internal/personal use and in accordance with the license agreement under which the applicable software is licensed. Any copy made shall include the PTC copyright notice and any other proprietary notice provided by PTC. Training materials may not be copied without the express written consent of PTC. This documentation may not be disclosed, transferred, modified, or reduced to any form, including electronic media, or transmitted or made publicly available by any means without the prior written consent of PTC and no authorization is granted to make copies for such purposes.

Information described herein is furnished for general information only, is subject to change without notice, and should not be construed as a warranty or commitment by PTC. PTC assumes no responsibility or liability for any errors or inaccuracies that may appear in this document.

For Important Copyright, Trademark, Patent and Licensing Information see last pages of this guide.

PTC Telephone and Fax Numbers

Education Services Registration in North America

Tel: (888) 782-3773

Fax: (781) 370-5553

Technical Support (Monday - Friday)

Tel: (800) 477-6435 (U.S.)

(781) 370-5332 or (781) 370-5523 (outside U.S.)

Fax: (781) 370-5650

License Management

Tel: (800) 216-8945 (U.S.)

(781) 370-5559 (outside U.S.)

Fax: (781) 370-5795

Contracts

Tel: (800) 791-9966 (U.S.)

(781) 370-5700 (outside U.S.)

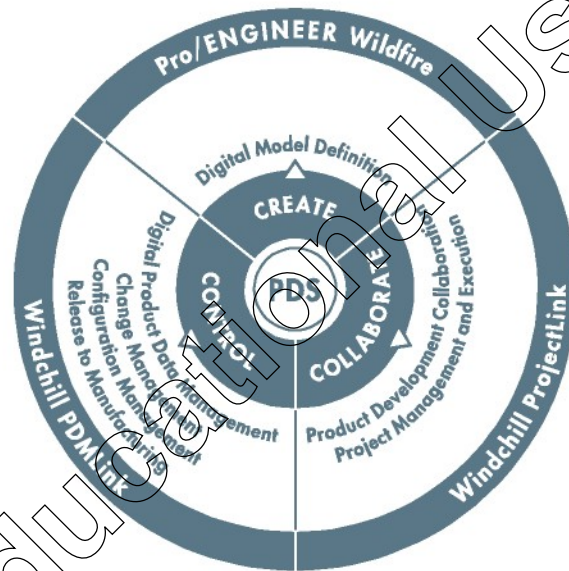
In addition, you can access the PTC Web site at www.ptc.com. Our Web site contains the latest training schedules, registration information, directions to training facilities, and course descriptions. You can also reach technical support, and register for online service options such as knowledge base searches, reference libraries and documentation. You can also find general information about PTC, Pro/ENGINEER, Windchill, Consulting Services, Customer Support, and PTC Partners.

Product Development System

In today's distributed manufacturing environment, success is found in the ability to effectively manage complexity and variability. Therefore, it's critical that your Product Lifecycle Management (PLM) solution offers a combination of flexibility and control.

This is where PTC's approach to PLM is unique. Our Product Development System (PDS) is a configuration of PTC solutions, specifically designed and tested together to give companies the three key capabilities necessary for successful product development:

1. Create detailed and intuitive digital product information.
2. Collaborate to manage critical opportunities and engage project teams, customers, suppliers, and partners.
3. Control processes, such as change management and design review.



A variety of training for all PTC solutions is available. We've created the PTC Precision Learning Methodology to best meet your key business objectives.

By using our innovative approach you'll:

- Reduce required, off-site training time by up to 40%.
- Increase productivity.
- Reduce adoption risks and accelerate time to value.
- Enjoy someone else managing your staff's training program.

Precision Learning

The Precision Learning Methodology

PTC Global Services is dedicated to continually providing the student with an effective, comprehensive learning experience. Toward this goal, PTC developed Precision Learning, which matches the *right* training to the *right* people at the *right* time using the right method.

Precision Learning is based on a three-stage, **Learn – Assess – Improve** methodology.



Stage 1: LEARN

1. Instructor-led training course (ILT) at a PTC training center.
2. On-site training course.
3. Customized training course.
4. Web-based training (WBT) course.

The student attends a PTC training course, including any:

Stage 2: ASSESS

The impact of a training course is assessed using Pro/FICIENCY. Pro/FICIENCY is a Web-based skills assessment and development-planning tool. It is designed to deliver information that will help improve the skills and productivity of the student.

Stage 3: IMPROVE

Pro/FICIENCY enables customers to identify areas for improvement. The training wizard will direct customers to the appropriate class based on their job responsibilities.

Precision Learning In The Classroom

The **Learn – Assess – Improve** Precision Learning methodology is also implemented in selected PTC instructor-led courses. Throughout the class, students will take Pro/FICIENCY assessments to evaluate their own comprehension. The group results are also used to identify areas for the instructor to review with the class as a whole. At the end of the class, each student will complete an Education Circuit form. This Education Circuit is the student's action plan, identifying topics for improvement, as well as the steps to take in order to enhance the skills in those areas.

Training Agenda

Day 1
Module 1 : Introduction to the Windchill PDMLink Environment
Module 2 : Locating Product Information
Module 3 : Viewing Product Information
Module 4 : Initiating New Designs
Module 5 : Sharing CAD Models
Module 6 : Modifying CAD Models
Module 7 : Fundamentals of Product Structures
Module 8 : Creating Product Structures
Module 9 : Introduction to Product Configuration Management
Day 2
Module 10 : Managing Standard Documents
Module 11 : Participating in Processes
Module 12 : Managing Your Work
Module 13 : Introduction to the Change Process
Module 14 : Creating Change Requests
Module 15 : Creating Change Notices
Module 16 : Implementing Changes
Module 17 : Communication and Collaboration

Table Of Contents

Introduction to Windchill PDMLink 9.0

Introduction to the Windchill PDMLink Environment

Introduction.....	1-1
Objectives.....	1-1
Lecture Notes.....	1-2
Windchill PDMLink Environment.....	1-3
Windchill PDMLink Objects: Types.....	1-4
Windchill PDMLink Objects: Documents.....	1-5
Windchill PDMLink Objects: CAD Documents.....	1-6
Windchill PDMLink Objects: Parts and End Items.....	1-7
Windchill PDMLink Objects: Links.....	1-8
Windchill PDMLink Objects: Change Items.....	1-9
Windchill PDMLink Objects: Capabilities.....	1-10
Document Capabilities.....	1-11
Part and End Item Capabilities.....	1-12
CAD Document Capabilities.....	1-13
Link Capabilities.....	1-14
Change Item Capabilities.....	1-15
Storage Locations.....	1-16
Iteration and Revision Controls: Version.....	1-17
Iteration and Revision Controls: Check Out.....	1-18
Iteration and Revision Controls: Check In.....	1-19
Iteration and Revision Controls: Revise.....	1-20
Windchill PDMLink Objects: Process Controls.....	1-21
Windchill PDMLink Objects: Collaboration Features.....	1-22
Logging On to PDMLink.....	1-23
Exploring the Environment: Major Tabs.....	1-24
Exploring the Environment: Home Tab.....	1-25
Exploring the Environment: Product Tab.....	1-26
Exploring the Environment: Change Tab.....	1-27
Exploring the Environment: Library Tab.....	1-28
Accessing Help.....	1-29
Setting Preferences.....	1-30
Lab Exercises.....	1-31
Exercise 1: Logging On.....	1-31

Exercise 2: Exploring the Environment.....	1-32
Exercise 3: Accessing Help.....	1-34
Exercise 4: Setting Preferences.....	1-36
Summary	1-37
Locating Product Information	
Introduction.....	2-1
Objectives.....	2-1
Lecture Notes.....	2-2
Locating Information: Search.....	2-3
Locating Information: Browse.....	2-4
Viewing Object's Details.....	2-5
Saving Searches.....	2-6
Browsing for Objects.....	2-7
Lab Exercises	2-9
Exercise 1: Searching for Objects.....	2-9
Exercise 2: Browsing for Objects.....	2-11
Summary	2-11
Viewing Product Information	
Introduction.....	3-1
Objectives.....	3-1
Lecture Notes.....	3-2
Introduction to Visualization.....	3-3
Viewing Object Information.....	3-4
Viewing Content and Representations.....	3-6
Viewing Objects: Available Options.....	3-7
Viewing Representations: Tools.....	3-8
Viewing Representations: General Options.....	3-9
Viewing Representations: Markup Options.....	3-10
Viewing Objects: Relationships, Histories, and Other Information.....	3-11
Viewing Objects: End Item and Part Structure.....	3-12
Product Structure: Displaying Documents.....	3-13
Viewing Objects: CAD Document Structure.....	3-14
Viewing Objects: Structure Menu.....	3-15
Viewing Objects: General Menu.....	3-16
Viewing Objects: Related Objects Menu.....	3-17
Viewing Objects: History Menu.....	3-18
Viewing Objects: Collaboration Menu.....	3-19
Lab Exercises	3-20

Exercise 1: Examining Documents	3-20
Exercise 2: Examining Product Structure.....	3-22
Exercise 3: Examining CAD Document.....	3-24
Exercise 4: Viewing Representations using ProductView.....	3-26
Summary	3-28
Initiating New Designs	
Introduction.....	4-1
Objectives.....	4-1
Lecture Notes.....	4-2
Creating Product Structures.....	4-3
PDMLink — CAD Tool Integration.....	4-4
PDMLink — Pro/ENGINEER Integration.....	4-5
Unified Workgroup Manager.....	4-6
Introduction to the Workspace.....	4-7
Viewing Workspace Contents.....	4-8
Registering PDMLink with Pro/ENGINEER Wildfire.....	4-9
Managing Workspaces: Server Registry.....	4-10
Managing Workspaces: Folder Navigator.....	4-11
Workspace Preferences.....	4-12
Lab Exercises	4-13
Exercise 1: Creating Workspaces.....	4-13
Exercise 2: Managing Workspaces.....	4-15
Summary	4-15
Sharing CAD Models	
Introduction.....	5-1
Objectives.....	5-1
Lecture Notes.....	5-2
Sharing CAD Models.....	5-3
Uploading Models to a Workspace.....	5-4
Checking In CAD Documents.....	5-5
CAD Documents Storage Locations.....	5-6
Save, Upload, and Check In: File Movements.....	5-7
Saving and Uploading CAD Models.....	5-8
Workspace: Available Actions.....	5-9
Check In: Collect Objects.....	5-10
Check In: Set Options.....	5-11
Checking In CAD Models using Pro/ENGINEER.....	5-12
Using the Event Manager.....	5-13

Publishing Visualization Representations.....	5-14
Managing Visualization Representations	5-15
Lab Exercises	5-16
Exercise 1: Saving, Uploading, and Checking in CAD Models.....	5-16
Summary	5-17
Modifying CAD Models	
Introduction.....	6-1
Objectives.....	6-1
Lecture Notes.....	6-2
Modifying CAD Models.....	6-3
Checking Out CAD Documents.....	6-4
Modifying CAD Documents	6-5
Checking In CAD Documents.....	6-6
Add to Workspace: Workspace Menu.....	6-7
Add to Workspace: Object's Actions Menu.....	6-8
Check Out and Add to Workspace: Rules.....	6-9
Check In Methods.....	6-10
Family Table Management.....	6-11
Family Table: Characteristics	6-12
Lab Exercises	6-13
Exercise 1: Checking Out and Modifying CAD Models.....	6-13
Exercise 2: Using Family Tables	6-16
Summary	6-17
Fundamentals of Product Structures	
Introduction.....	7-1
Objectives.....	7-1
Lecture Notes.....	7-2
Configuration Management.....	7-3
Product Definition: Business Objects.....	7-4
Product Definitions: End Items and Parts	7-5
Product Definition: CAD Documents.....	7-6
Product Definition: Documents.....	7-7
New Product Introduction.....	7-8
End Item Master and Version.....	7-10
Part Master and Version.....	7-11
Product Structure Configuration: Latest.....	7-13
Product Structure Configuration: Managed Baseline.....	7-14
Product Structure Configuration: Effectivity	7-15

Managing Product Structures	7-16
Summary	7-16
Creating Product Structures	
Introduction	8-1
Objectives	8-1
Lecture Notes	8-2
Creating Product Structures	8-3
Manually Creating Parts: Define Part	8-4
Manually Creating Parts: Set Attributes	8-5
Associating CAD Documents and Parts	8-6
Associating CAD Documents and Parts: Methods	8-7
Viewing Product Structure	8-8
Lab Exercises	8-9
Exercise 1: Associating CAD Documents with Windchill Parts	8-9
Summary	8-10
Introduction to Product Configuration Management	
Introduction	9-1
Objectives	9-1
Lecture Notes	9-2
Creating New View Versions	9-3
Creating Managed Baselines	9-4
Bill of Materials (BOM) Notes	9-5
Creating BOM Notes	9-6
Product Configuration Management Concepts	9-7
End Item Configurations	9-8
End Item Configurations: Example	9-9
End Item Configurations: Capture 1st Configuration	9-10
End Item Configurations: Structure Changes	9-11
End Item Configurations: Capture 2nd Configuration	9-12
End Item Configurations: Additional Changes	9-13
End item Configurations: Capture 3rd Configuration	9-14
End Item Instances	9-15
Serialized Objects: Example	9-16
Occurrences	9-17
Occurrences: Example	9-18
Reference Designator Processing	9-20
Incorporation	9-21
Allocation	9-22

Replacement Parts.....	9-24
Adding Replacement Parts.....	9-25
Configuration Management Process.....	9-26
Step 1: Create Design Structure.....	9-27
Step 2: Create Configurations for Traceable Parts.....	9-28
Step 3: Create Instances from Configurations.....	9-29
Step 4: Incorporate Lower Level Instances.....	9-30
Step 5: Allocate Instances.....	9-31
Import/Export BOM Data using Excel Spreadsheets.....	9-32
Lab Exercises	9-33
Exercise 1: Baselining Product Structures.....	9-33
Exercise 2: Creating New View Versions.....	9-35
Exercise 3: Processing Reference Designator Information.....	9-37
Exercise 4: Adding Bill of Materials (BOM) Notes.....	9-38
Exercise 5: Creating End Item Configurations and Instances.....	9-40
Exercise 6: Adding Substitutes and Alternates in a Product Structure.....	9-42
Exercise 7: Exporting BOM Data using Microsoft Excel.....	9-44
Summary	9-44
Managing Standard Documents	
Introduction.....	10-1
Objectives.....	10-1
Lecture Notes.....	10-2
Understanding Standard Documents.....	10-3
Document Object Capabilities.....	10-4
Document Creation Process.....	10-5
Creating Documents: Define Object.....	10-6
Creating Documents: Set Attributes (Primary Content).....	10-7
Creating Documents: Set Attributes.....	10-8
Creating Documents: Set Attachments.....	10-9
Creating Multiple Documents.....	10-10
Establishing Document Relationships.....	10-11
Modifying Documents.....	10-12
Checking Out Documents.....	10-13
Updating Documents.....	10-14
Checking In Documents.....	10-15
Understanding Save, Edit Document, and Check In.....	10-16
Using Save.....	10-17
Using Edit Document.....	10-18

Using Check In	10-19
Revising Documents.....	10-20
Desktop Integration	10-21
Installing and Configuring Desktop Integration.....	10-22
Lab Exercises	10-23
Exercise 1: Creating Documents.....	10-23
Exercise 2: Creating Multiple Documents.....	10-25
Exercise 3: Creating Document Relationships.....	10-26
Exercise 4: Modifying Documents.....	10-28
Exercise 5: Associating Documents to Windchill Parts.....	10-29
Summary	10-29
Participating in Processes	
Introduction.....	11-1
Objectives.....	11-1
Lecture Notes.....	11-2
Participating in Processes	11-3
Tasks Delivery Mechanism.....	11-4
Life Cycle Components.....	11-5
Basic Life Cycle.....	11-6
Advanced Life Cycle.....	11-7
Promoting Objects using a Promotion Request.....	11-8
Viewing Promotion Requests.....	11-9
Creating Promotion Requests.....	11-10
New Promotion Request: Set Attributes.....	11-11
New Promotion Request: Collect Objects.....	11-12
New Promotion Request: Edit Object List.....	11-13
New Promotion Request: Select State for Promotion	11-14
New Promotion Request: Select Process.....	11-15
New Promotion Request: Define Participants.....	11-16
Completing Tasks.....	11-17
Completing Promotion Tasks.....	11-18
Viewing Processes.....	11-19
Managing Your Assignments.....	11-20
Managing Your Calendar.....	11-21
Lab Exercises.....	11-22
Exercise 1: Promoting Objects using Basic Life Cycles.....	11-22
Exercise 2: Promoting Objects using Advanced Life Cycles.....	11-25
Exercise 3: Reassigning Tasks.....	11-27

Summary	11-27
Managing Your Work	
Introduction.....	12-1
Objectives.....	12-1
Lecture Notes.....	12-2
Managing Your Work.....	12-3
Managing Your Objects.....	12-4
Managing Your Notebook.....	12-5
Managing Your Subscriptions.....	12-6
Creating Subscriptions.....	12-7
Receiving Notifications.....	12-8
Generating Reports.....	12-9
Generating Reports: Home Tab Reports.....	12-10
Generating Reports: Context-specific Reports.....	12-11
Generating Reports: Product Structure Reports.....	12-12
Generating Reports: Change Monitor Reports.....	12-13
Lab Exercises	12-14
Exercise 1: Managing Your Notebook.....	12-14
Exercise 2: Subscribing to Objects.....	12-15
Exercise 3: Generating Reports.....	12-17
Summary	12-17
Introduction to the Change Process	
Introduction.....	13-1
Objectives.....	13-1
Lecture Notes.....	13-2
Change Management Features: Introduction.....	13-3
Change Management Features: How Does Change Management Fit In?.....	13-4
Change Management Features: Benefits.....	13-5
Change Objects.....	13-6
Monitoring Change: Reports.....	13-7
Viewing Change Process Diagrams.....	13-8
The Change Process: Overview.....	13-9
The Change Process: Diagram.....	13-10
The Change Process: Problem Report.....	13-11
The Change Process: Change Request.....	13-12
The Change Process: Change Notice.....	13-14
Creating Problem Reports.....	13-16
Creating Problem Reports: Set Attributes.....	13-18

Creating Problem Reports: Select Affected End Items	13-19
Creating Problem Reports: Select Affected Objects	13-20
Creating Problem Reports: Set Attachments	13-21
Lab Exercises	13-22
Exercise 1: Submitting Problem Reports	13-22
Exercise 2: Monitoring Changes	13-24
Summary	13-24
Creating Change Requests	
Introduction	14-1
Objectives	14-1
Lecture Notes	14-2
Windchill Change Process: The Diagram	14-3
Analyzing Problem Reports: The Process	14-4
Analyzing Problem Reports: Task Details	14-5
Change Requests: Objectives and Benefits	14-6
Creating Change Requests: The Process	14-7
Creating Change Requests: Define Object	14-8
Creating Change Requests: Set Attributes	14-9
Creating Change Requests: Select Affected End Items	14-10
Creating Change Requests: Select Affected Objects	14-11
Creating Change Requests: Collect Affected Objects	14-12
Creating Change Requests: Set Attachments	14-13
Creating Change Requests: Associate Changes	14-14
Analyzing Change Requests: The Process	14-15
Analyzing Change Requests: Fast Track Versus Full Track	14-16
Analyzing Change Requests: Task Details	14-17
Lab Exercises	14-18
Exercise 1: Analyzing Problem Reports	14-18
Exercise 2: Creating Change Requests	14-19
Exercise 3: Analyzing Change Requests	14-22
Summary	14-22
Creating Change Notices	
Introduction	15-1
Objectives	15-1
Lecture Notes	15-2
Windchill Change Process: The Diagram	15-3
Benefits of Change Notices	15-4
Creating Change Notices: The Process	15-5

Creating Change Notices: Define Object.....	15-6
Creating Change Notices: Set Attributes	15-7
Creating Change Notices: Define Implementation Plan.....	15-8
Creating Change Notices: Set Attachments.....	15-9
Creating Change Notices: Associate Changes.....	15-10
Editing Change Tasks: Set Attributes	15-11
Editing Change Tasks: Select Affected/Resulting Objects.....	15-12
Setting the Disposition of the Affected Objects	15-13
Change Tasks: Details	15-14
Setting Effectivity.....	15-15
Syntax for Specifying Effectivity	15-16
Change Notice Plan Approval.....	15-17
Lab Exercises	15-18
Exercise 1: Creating Change Notices	15-18
Summary	15-20
Implementing Changes	
Introduction.....	16-1
Objectives.....	16-1
Lecture Notes.....	16-2
Change Notice Process: The Diagram.....	16-3
Change Notice Plan Execution.....	16-4
Change Notice Audit.....	16-5
Resolving the Process.....	16-6
Lab Exercises	16-7
Exercise 1: Completing the First Implementation Task.....	16-7
Exercise 2: Completing the Second Implementation Task.....	16-9
Exercise 3: Reviewing Change Notice Tasks.....	16-11
Exercise 4: Auditing Change Notices.....	16-13
Summary.....	16-13
Communication and Collaboration	
Introduction.....	17-1
Objectives.....	17-1
Lecture Notes.....	17-2
Introduction to Communication Mechanisms.....	17-3
Viewing Notifications	17-4
E-mailing Team Members.....	17-5
E-mailing a Page.....	17-6
Holding Discussions.....	17-7

Holding Meetings.....	17-8
Scheduling Meetings.....	17-9
Hosting Meetings.....	17-10
Lab Exercises.....	17-11
Exercise 1: Discussing Objects.....	17-11
Exercise 2: Scheduling Meetings.....	17-13
Summary.....	17-14

For Educational Use Only

For Educational Use Only

Introduction to the Windchill PDMLink Environment

Introduction

In this module, you learn some concepts and terms that you will encounter throughout this course. In addition, you identify the features and capabilities of the Windchill PDMLink 9.0 objects and learn how they are used in the PDMLink environment.

The purpose of this module is to provide you with a high-level overview of all of these features and capabilities. You will learn more about all of them, including how to use them, in the modules that follow.

Objectives

After completing this module, you will be able to:

- Identify and describe the capabilities of PDMLink's primary object types.
- Identify PDMLink storage locations, iteration and version controls, process controls, access controls, and collaboration features.
- Access PDMLink.
- Navigate within PDMLink.
- Access Help.
- View and Modify Preferences.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

For Educational Use Only

Windchill PDMLink Environment

Windchill PDMLink

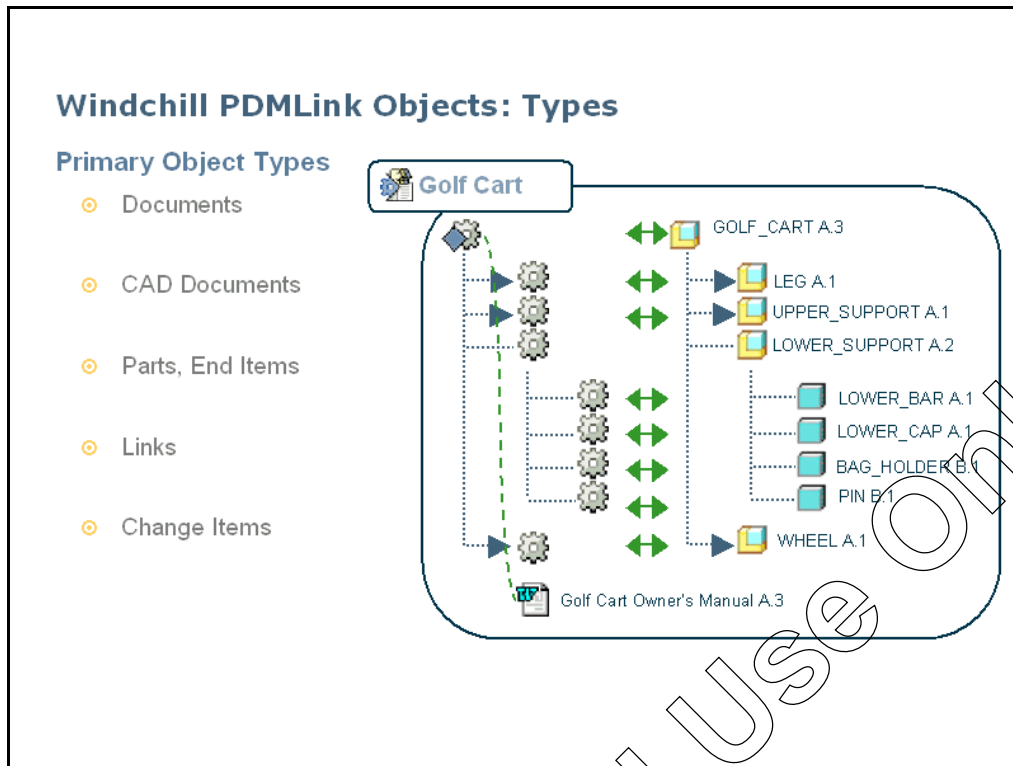
- ◉ Stores information.
- ◉ Manages information in storage locations.
- ◉ Manages information evolution.
- ◉ Controls access to information.
- ◉ Provides collaboration tools.



Windchill PDMLink Environment

Windchill PDMLink 9.0 is a collaborative environment that is enabled with today's latest Web technology. It has been designed to enable you to develop and manage products more effectively and efficiently. It provides your entire enterprise with a common information sharing mechanism that stores information, manages that information in storage locations, manages information evolution, controls access to information, and provides collaboration tools.

Together, these features enable Windchill PDMLink to control the data that drives your products from concept to delivery. Windchill PDMLink provides functionality for managing your product information. Because product information is complex, multifaceted and often contains hundreds of relationships, PDMLink manages this product information and all of these relationships.



Windchill PDMLink Objects: Types

One of the main purposes of PDMLink is to store product information. To do this, PDMLink stores information in what it calls a Business Object.

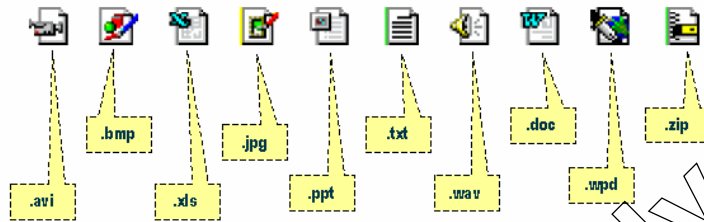
Because products are complex, you may need to store a number of different types of information, from CAD data to owner's manuals to problem reports.

PDMLink has several types of objects to handle these different types of information and enables you to build relationships between them.

Windchill PDMLink Objects: Documents

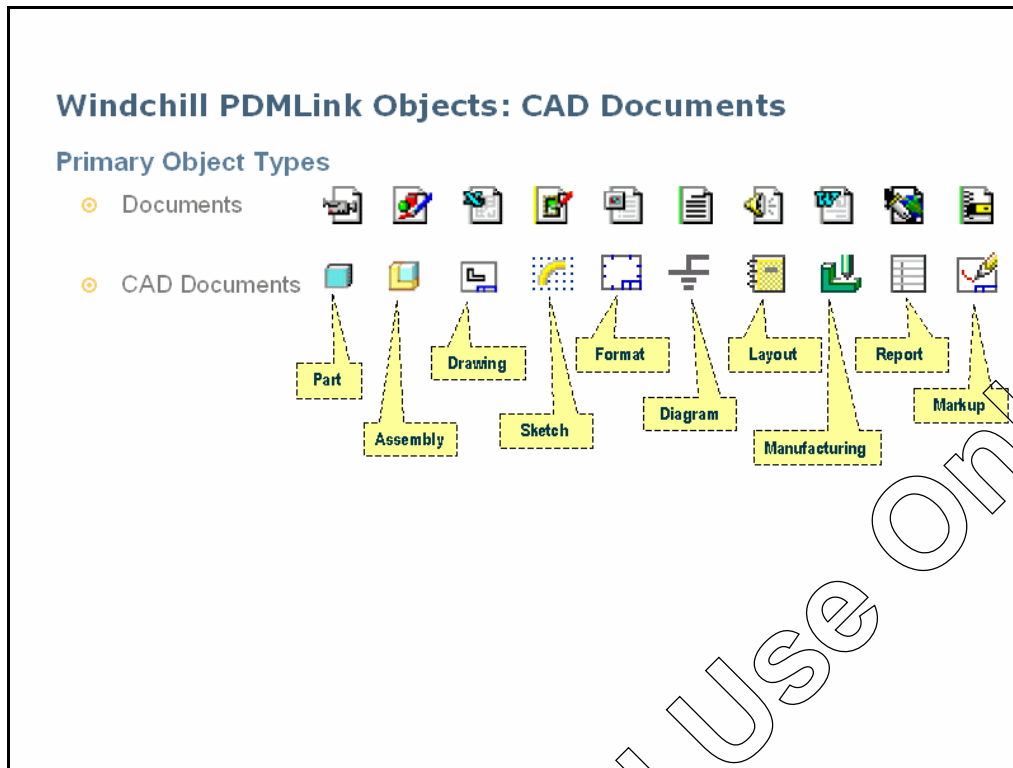
Primary Object Types

Documents



Windchill PDMLink Objects: Documents

Document objects are designed to store files. They can store any electronic data file.



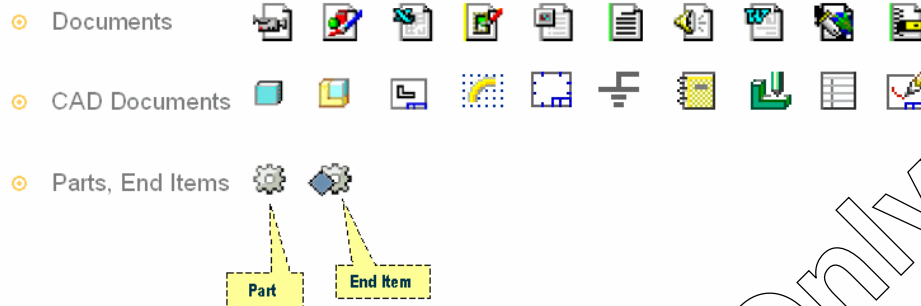
Windchill PDMLink Objects: CAD Documents

CAD documents are used to store engineering CAD data, such as models or drawings.

PDMLink can store many different types of CAD data, including AutoCAD, Catia, and Pro/ENGINEER. Like documents, a CAD document's icon is based on the type of file it contains.

Windchill PDMLink Objects: Parts and End Items

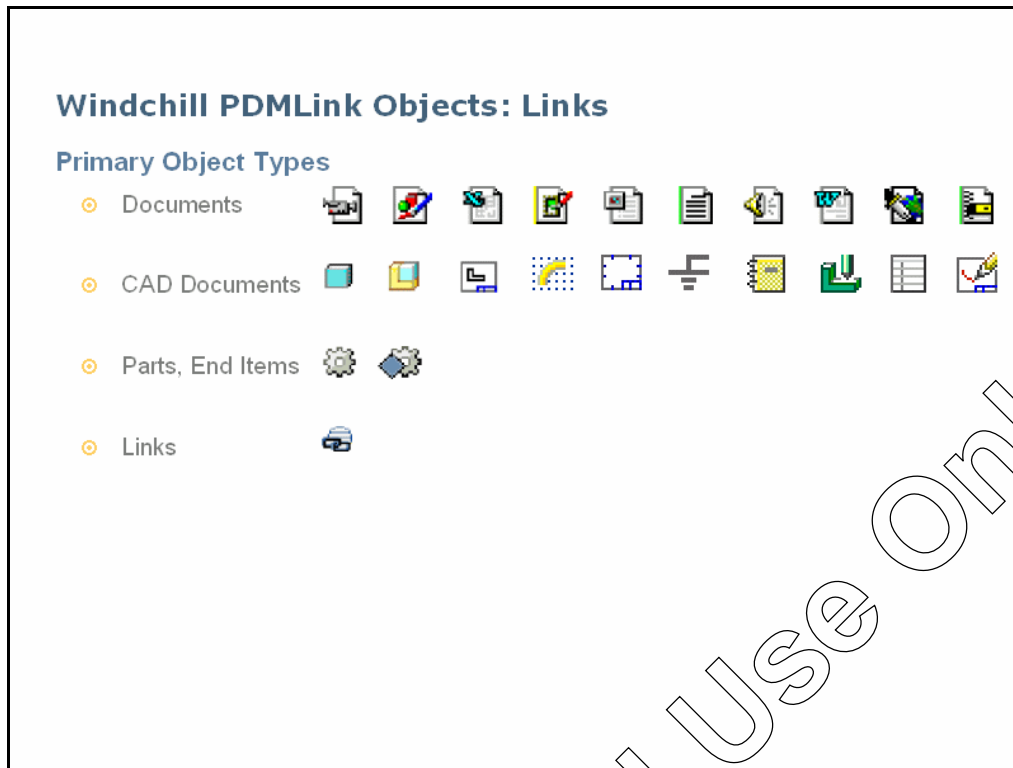
Primary Object Types



Windchill PDMLink Objects: Parts and End Items

Parts and end items are used to build product structures.

They do not contain CAD data, but reference the CAD documents that do. They can also reference each other in a hierarchy called a product structure.

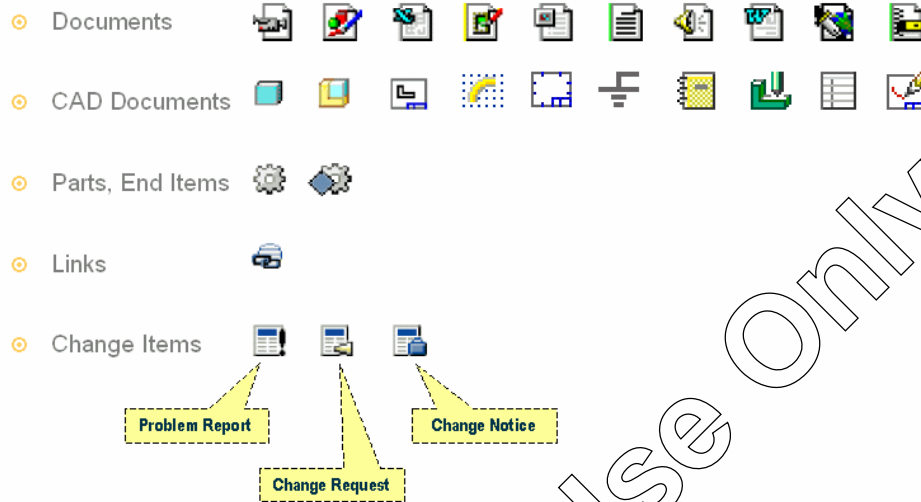


Windchill PDMLink Objects: Links

Links are used to store hyperlinks to Web pages within and outside of your enterprise.

Windchill PDMLink Objects: Change Items

Primary Object Types














Windchill PDMLink Objects: Change Items

Change items are used to store change information about other objects, such as parts or documents. Change items include problem reports (PRs), change requests (CRs), and change notices (CNs).

Windchill PDMLink Objects: Capabilities

Primary Object Types

- Documents          
- CAD Documents          
- Parts, End Items  
- Links 
- Change Items   

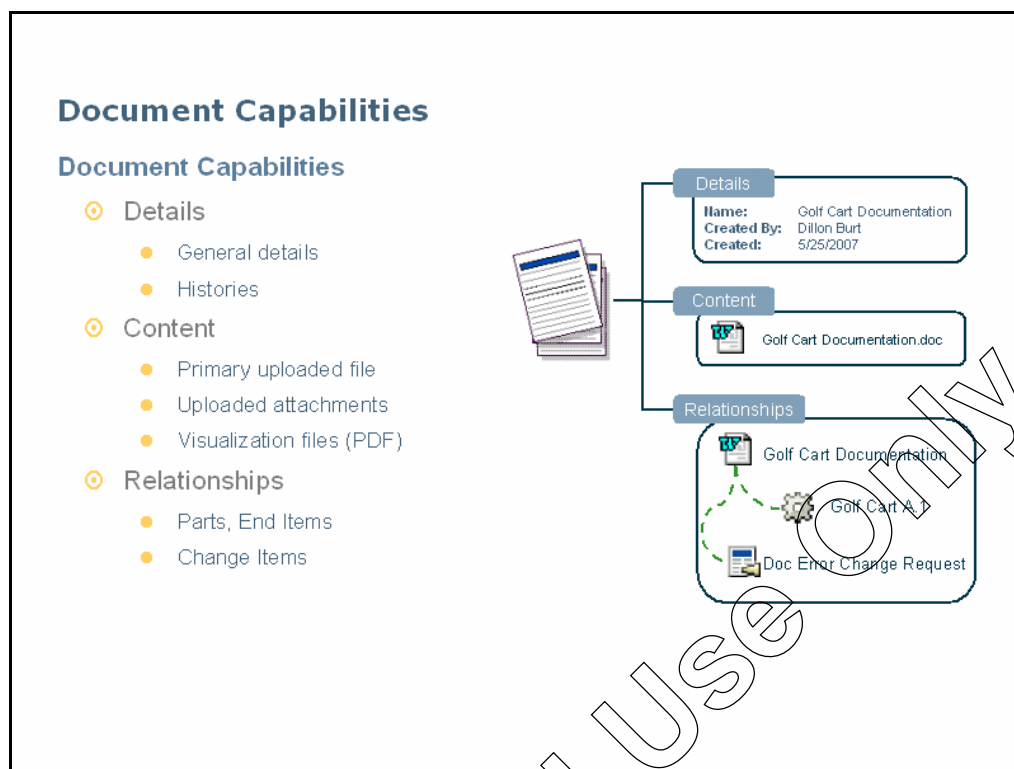
Object Capabilities

- Details (Meta-data)
- Content
- Relationships

Windchill PDMLink Objects: Capabilities

The first three of the object types listed above are the primary objects for storing information about products. These three objects typically have three primary purposes. Each object does the following:

- Stores details about the object, such as who created it and when.
- Stores content or files that are uploaded to PDMLink.
- Stores relationships that reference other objects in the system.



Document Capabilities

A document object has details, also called metadata.

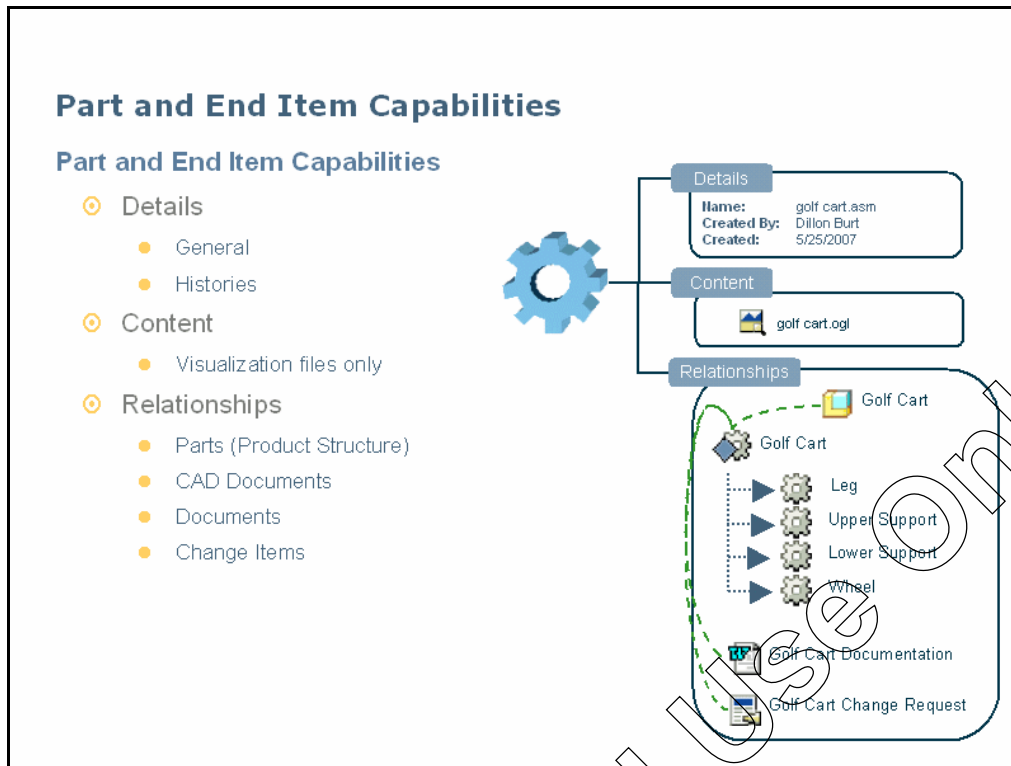
Though PDMLink stores many more details than shown in this example, details can include items such as when the document was created, and who created it.

A document object can also contain content. When you add a document to PDMLink, you upload a file from your computer into PDMLink so others can view it.

In this example, a user created a document called Golf Cart Documentation and uploaded a Microsoft Word file called Golf Cart Documentation.doc. That file is the document's content.

Lastly, a document can have relationships to parts, products, and change items in PDMLink.

You might upload product documentation and link that documentation to the product it describes.



Part and End Item Capabilities

The term part is used to generically include end items and parts. You will learn more about their differences later.

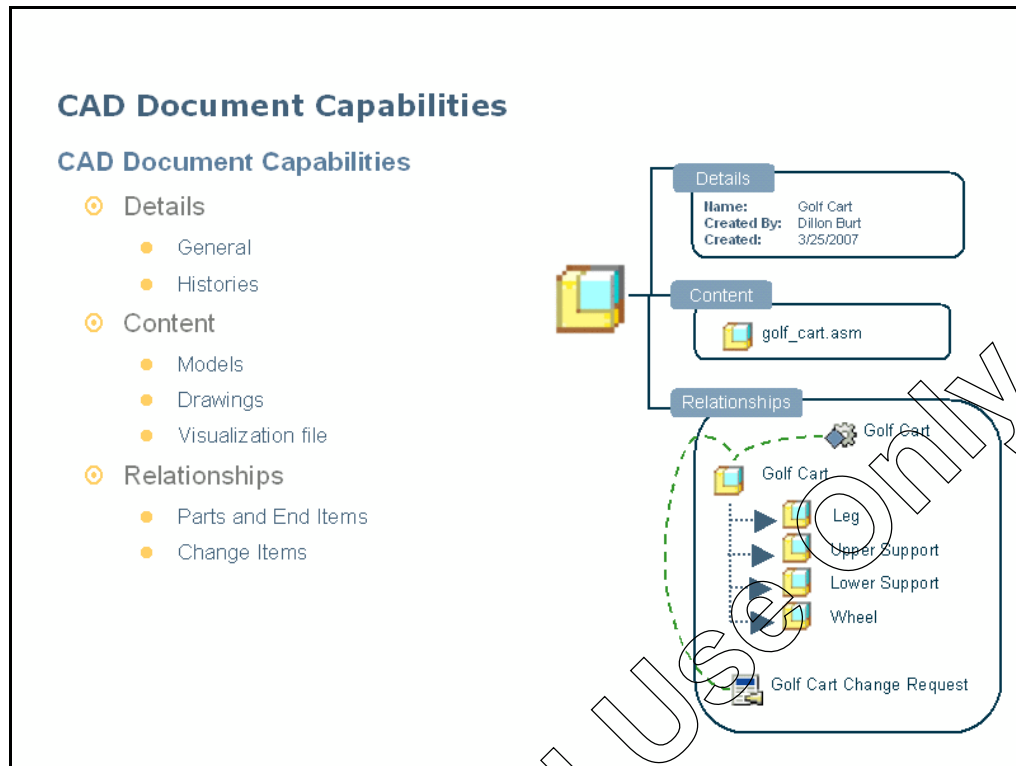
Like a document, a part can have details, such as its name.

Unlike a document, parts do not truly have content. They do not contain files. As shown in this slide, they can contain a visualization file, or a representation of a component or product they represent. However, this is not truly content that can be edited, so the part is not considered to truly have content.

A part can be associated to other parts in a hierarchy that represents a product's structure. Each of those other parts can have details and relationships of their own.

In addition, a part can be associated to every other type of primary object. A part that represents a golf cart assembly can be associated to a CAD document that contains a CAD model of the assembly. Each part in the product structure can also be associated to its own CAD document.

Similarly, each part can be associated to a document. In this example, the Golf Cart end item is associated to the Golf Cart Documentation document. And lastly, each part can be associated to change items that report problems with the part, request changes to the part, and notify others about changes to the part.



CAD Document Capabilities

CAD documents share capabilities of documents and parts.

They have details, can store CAD content, and can be organized into a structure. In addition, they can have relationships with parts and change items.

Link Capabilities

Link Capabilities

- Provides a link to a Web page
 - Another object in PDMLink
 - A page Web page outside of PDMLink
- Does not contain content

Link Capabilities

Links only have details. They do not contain a file, but instead provide a way for you to store a hyperlink to any Web page within Windchill PDMLink or outside of it.

Change Item Capabilities

Change Item Capabilities

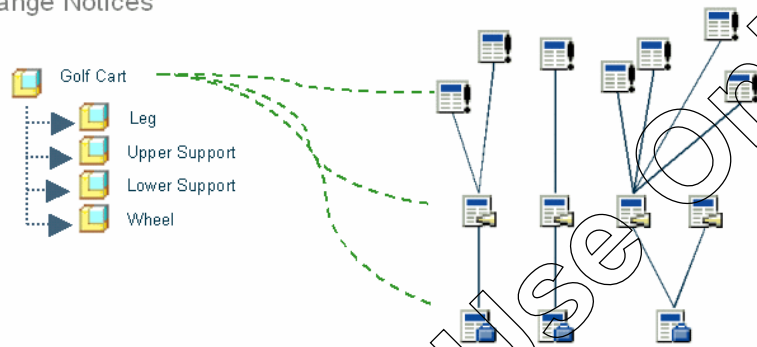
 Problem Reports

initiate

 Change Requests

initiate

 Change Notices

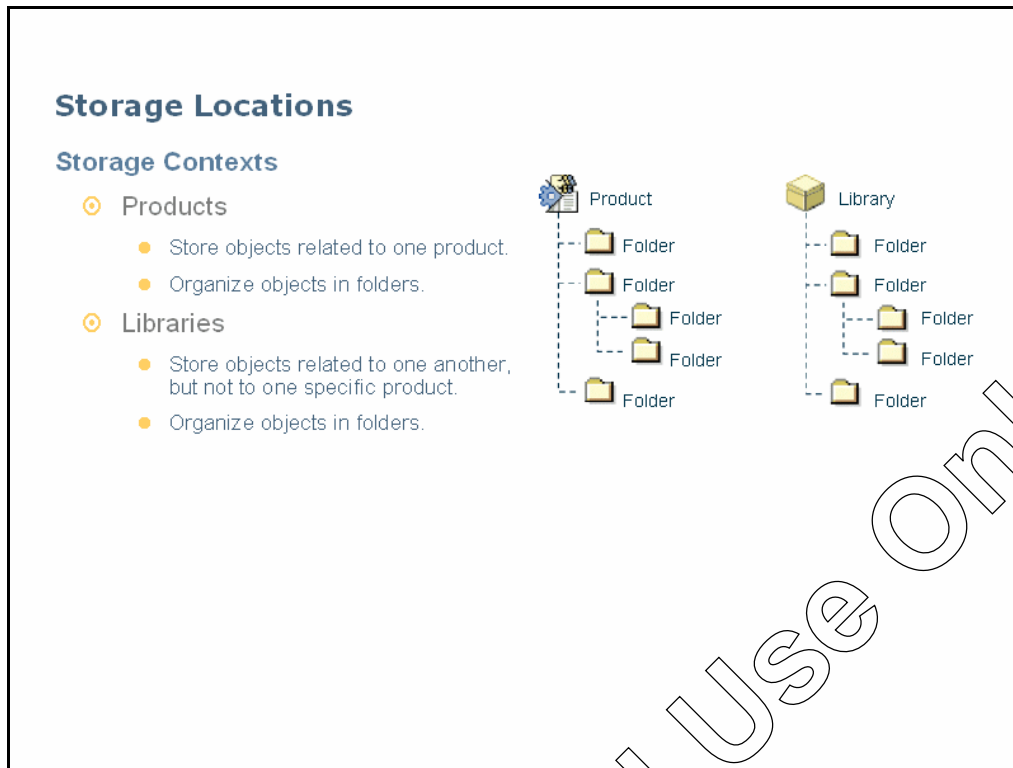


Change Item Capabilities

The last of the primary objects are the change items. Change items are used in PDMLink's change processes. Each change item has a different purpose.

- The problem report can be completed by anyone who would like to suggest a change or report a problem with a part.
- A change request (CR) can then be used to compile common problem reports and submit a formal request for a change. A change request can be initiated without any problem reports as well.
- Finally, a change notice (CN) can be used to assign and implement changes.

All of these change items can be associated to one another, and the PDMLink parts and documents that they are affecting.



Storage Locations

When you create objects, you also decide where to store them. Typically, this is based on the context in which the object will be used. There are two primary storage contexts in PDMLink: Products and Libraries.

- Products represent a product that is being designed. You would store objects in a product if they will ever be used in that product.
- Libraries are more general. If you wanted to create a library of parts that could be used with any product, you would store them in a library.

Within both types of storage locations, you can organize the objects within subfolders.

Iteration and Revision Controls: Version

Version

- Revision
 - Default uses letters
- Iteration
 - Default uses numbers

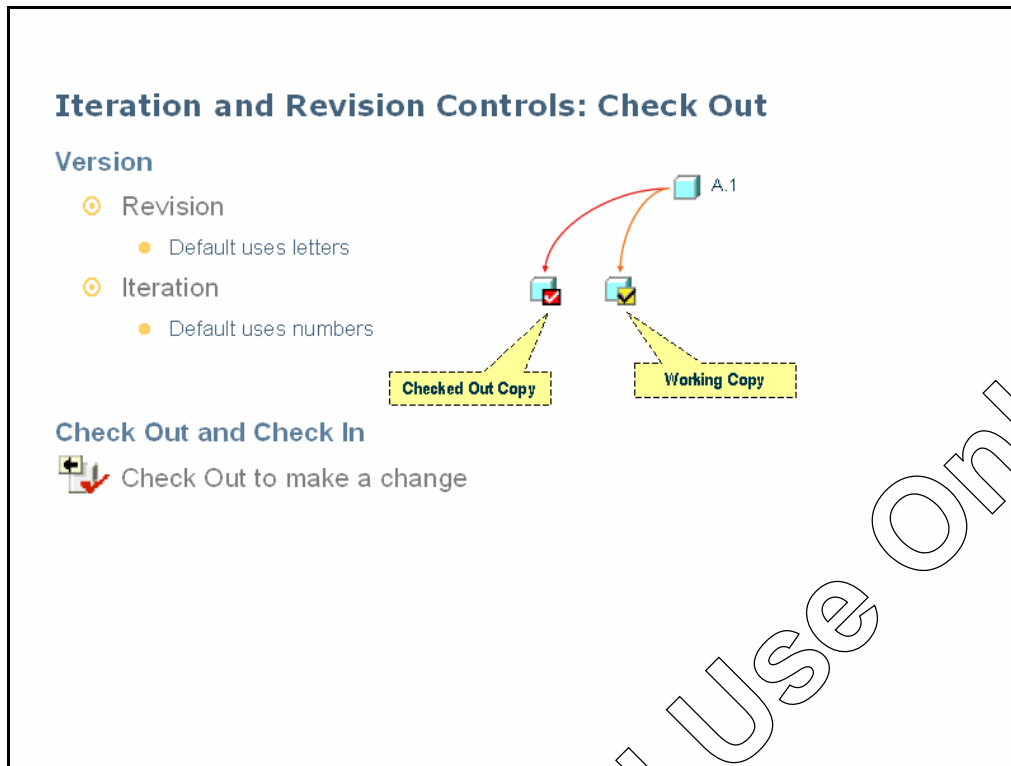
A.1

Iteration and Revision Controls: Version

To modify parts, CAD documents, and documents you must check them out. This signals to others that you are modifying them. Once you have made your changes, you can check them back in.

Parts, CAD documents, and documents are all given a numbering scheme set up by your administrator. The default is to use a letter for the revision and a number for the iteration.

In this example, a new part was created, its revision is A and its iteration 1.



Iteration and Revision Controls: Check Out

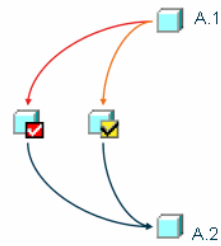
If you want to modify a part or document, you must first check it out. This temporarily creates the following two copies:

- A working copy that you can modify.
- A checked out copy that others can still access.



Iteration and Revision Controls: Check In

Version

- Revision
 - Default uses letters
- Iteration
 - Default uses numbers



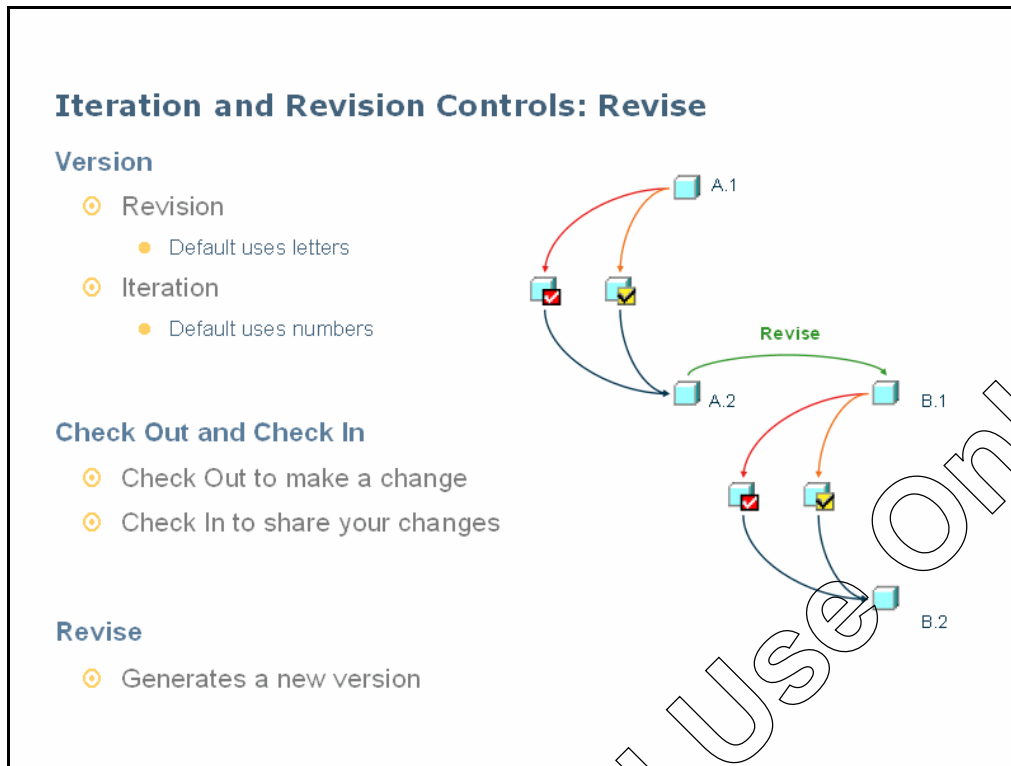
Check Out and Check In

-  Check Out to make a change
-  Check In to share your changes

Iteration and Revision Controls: Check In

Once you have made your changes you can check it back in. This increments the part's iteration number from 1 to 2.

For example, the part is at version A.2 and presumed to be released to manufacturing at A.2.



Iteration and Revision Controls: Revise

In a year, the company that manufactures this part will decide to do a new version of the same product. This part needs to be updated, so a new version of the part is created. It will be B.1 and will increment its iteration independently from A.2.

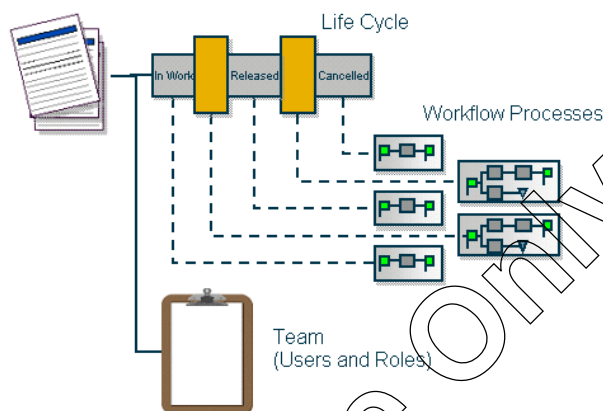
Note that the numbering scheme at your company may be different than the default one presented in this example.

If someone modifies B.1 by checking it out and checking it back in, it will now be at B.2.

Windchill PDMLink Objects: Process Controls

Automated Process Components

- Life Cycles
- Workflow Processes
- Teams



Windchill PDMLink Objects: Process Controls

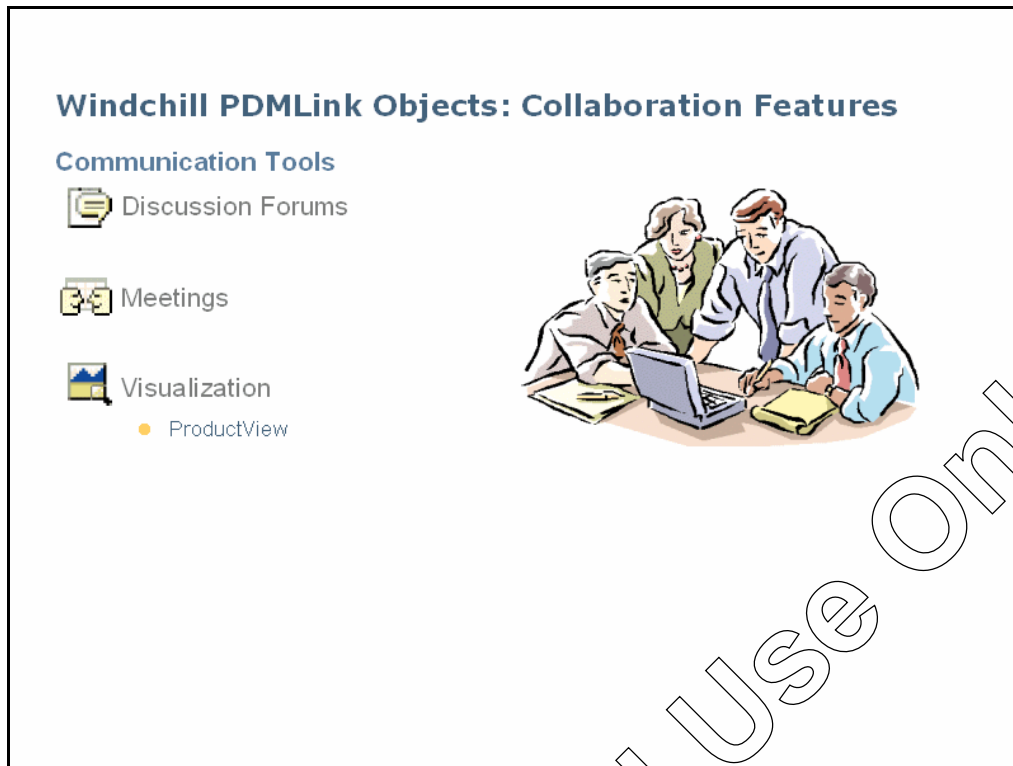
PDMLink also automates many of your business processes. The processes are extremely flexible, and will probably be very different for you than the examples in this course. They will always represent your company's best product development practices. These processes are automated by using a combination of a PDMLink life cycles, workflows, and teams.

A life cycle establishes the stages or states that an object, such as this document, can exist in. All of the objects that have been examined, except for the link, can be managed by a life cycle that defines its evolutionary path.

For example, perhaps this document is a user's guide. Your technical writing department has decided that documents can only exist in three states: In Work, Released, or Cancelled. The gray boxes in this diagram represent these three states.

Each of these states can use a workflow process to automatically route the right development and review tasks to the right people. As major milestones in the development are completed, the workflows route the document to the appropriate state.

How does a workflow process know which user to send a task to? The final piece of the automated processes in PDMLink is the team. PDMLink can determine the right individual to send a task to, based on the roles they fulfill within a team. As a user, you will probably not need to plan these complicated processes; your administrators will do that. You will, however, participate in them, by accepting and completing tasks that get assigned to you.



Windchill PDMLink Objects: Collaboration Features

Almost every aspect of PDMLink is designed with collaboration in mind. After all, that is its primary purpose. However, there are a few tools that specifically foster collaboration about objects through communication.

- You can use discussion forums to discuss parts, documents, and CAD documents. These are message boards that you can subscribe to so you can be notified every time they are modified.
- You can also schedule and host Web-based meetings about Windchill PDMLink objects using PDMLink.
- And finally, both within meetings and outside of them, you can view and markup CAD data even if you do not have the original application that was used to create it. You do this using PDMLink's built-in Visualization tool, ProductView.

Logging On to PDMLink

Logging On to PDMLink

- Open Your Web Browser
- Type the URL
- Log On
 - User name
 - Password



Logging On to PDMLink

If you want to access PDMLink, you will need a Web browser, such as Internet Explorer or Pro/ENGINEER's embedded Web browser, and the URL of the PDMLink server.

To log on to PDMLink, type that URL into your Web browser. When the log on window opens, type your user name and password. If PDMLink recognizes your user name and password, you will be logged on to the system and brought to your Home page.

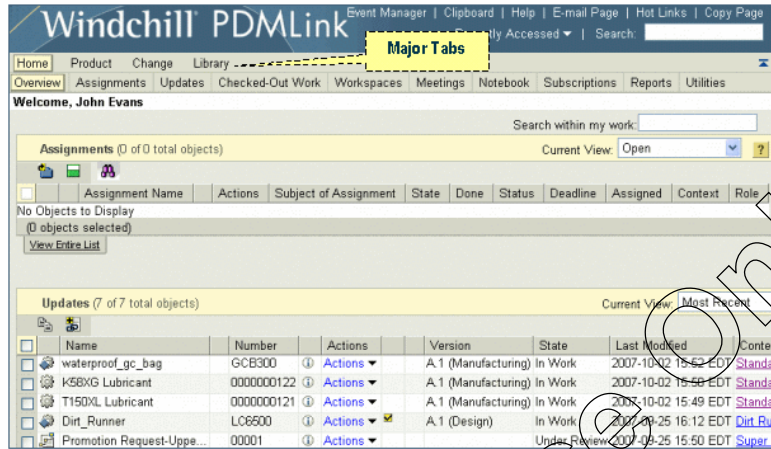


From time to time you may be prompted to download additional add-ons or grant access to Java applets. In general, you want to add these features when they are offered.

Exploring the Environment: Major Tabs

Organized by Tabs

- Home
- Product
- Change
- Library



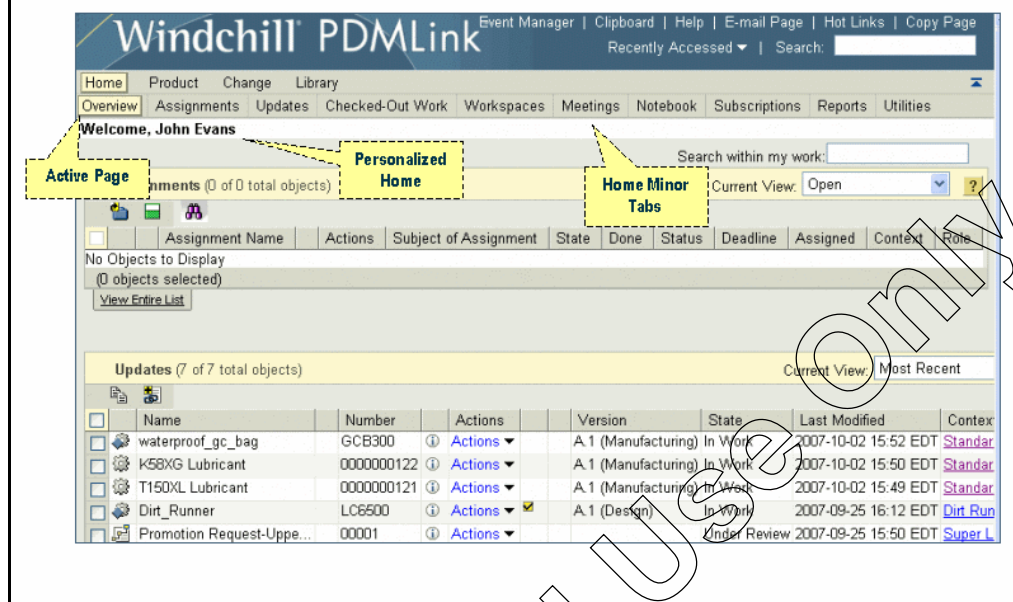
Exploring the Environment: Major Tabs

The information stored within PDMLink is organized by tabs. You will find different information under each of these tabs:

- The **Home** major tab lists information specific to you. This includes your assignments, checked out work, meetings, and preferences.
- The **Product** tab lists information about products, such their product structures and teams.
- The **Change** tab lists information about change process that are occurring across all products and libraries.
- The **Library** tab lists information about the data stored in the libraries.

Each tab further divides the information with its minor tabs. The following content explores what you can find on each major tab.

Exploring the Environment: Home Tab



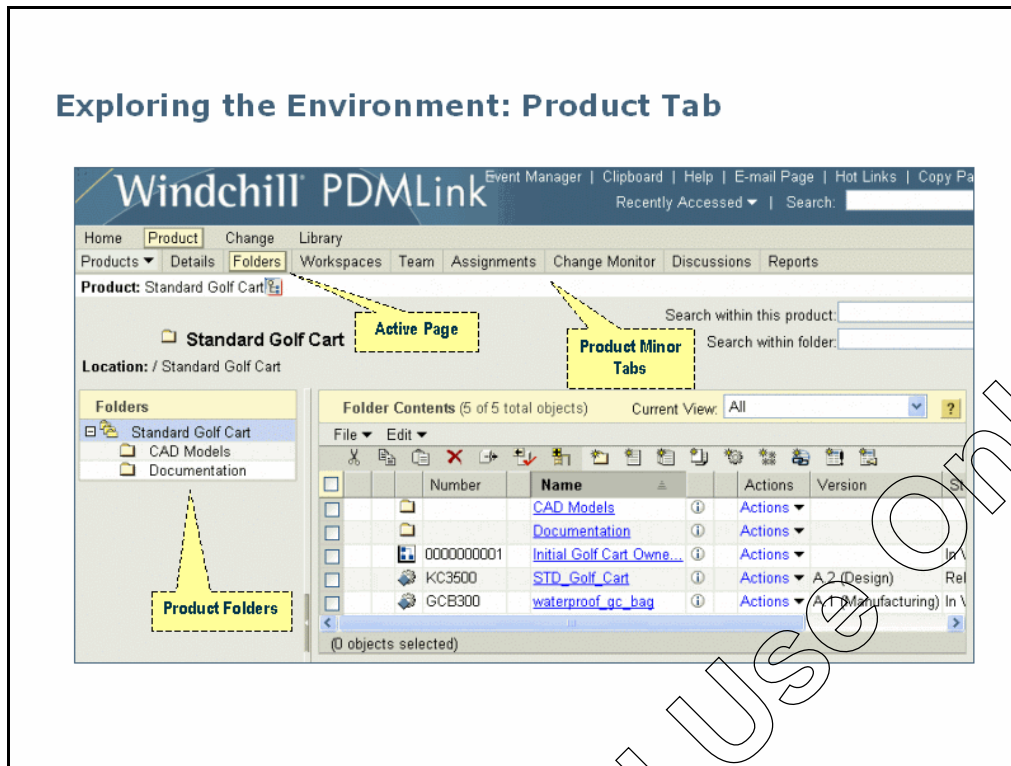
Exploring the Environment: Home Tab

The Home major tab has a toolbar with links that enable you to view and manage all of the information that is specific to you. The Overview page is currently the Active page. PDMLink recognizes the current user as John Evans. This page is customized to John Evans, and displays some information specific to John.

Each of these pages provides information that is specific to you, the user that is currently logged on.

- The **Assignments** page displays and manages items that are assigned to you.
- The **Updates** page displays all of the objects that you have recently created or modified.
- The **Checked-Out Work** page displays all of the objects that you currently have checked out.
- The **Workspaces** page displays all workspaces to which you have access, provided that you have a CAD system enabled.
- The **Meetings** page displays your meetings.
- The **Notebook** page displays links you have created to information.
- The **Subscriptions** page lists objects to which you subscribe for event notifications.
- The **Reports** page displays the reports available to run and the report results.
- The **Utilities** page displays links to end-user tools.

Exploring the Environment: Product Tab



Exploring the Environment: Product Tab

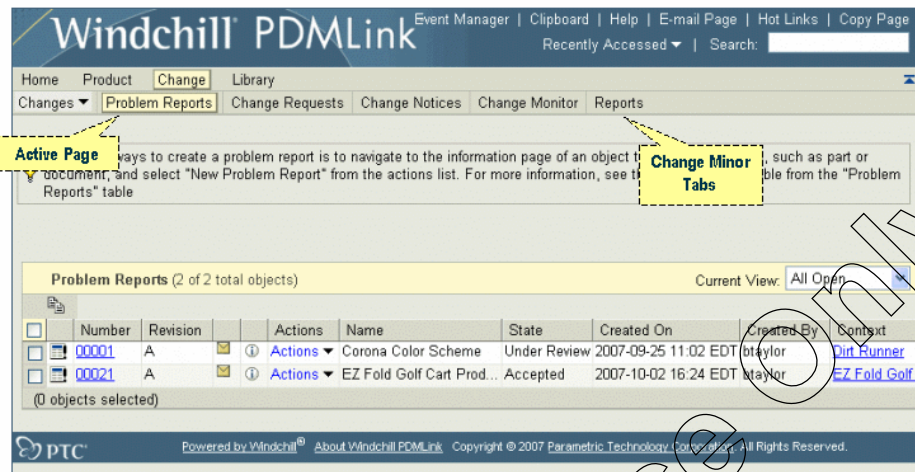
The Products List page lists all the products of which you are a team member.

If you cannot find a product that you know exists, then you are not a part of the team.

The Products drop-down menu and Products table enable you to select an active product, which exposes minor tabs for additional information:

- The **Details** page displays details about the current product.
- The **Folders** page displays the contents of the current product in a folder structure.
- The **Workspaces** page displays all of your workspaces for the current product.
- The **Team** page displays all team-related information and actions for the team members of the current product.
- The **Assignments** page displays and manages items that are assigned to you for the current product.
- The **Discussions** page displays all discussion topics for the current product.
- The **Reports** page displays the reports available to run for the current product and the report results.

Exploring the Environment: Change Tab

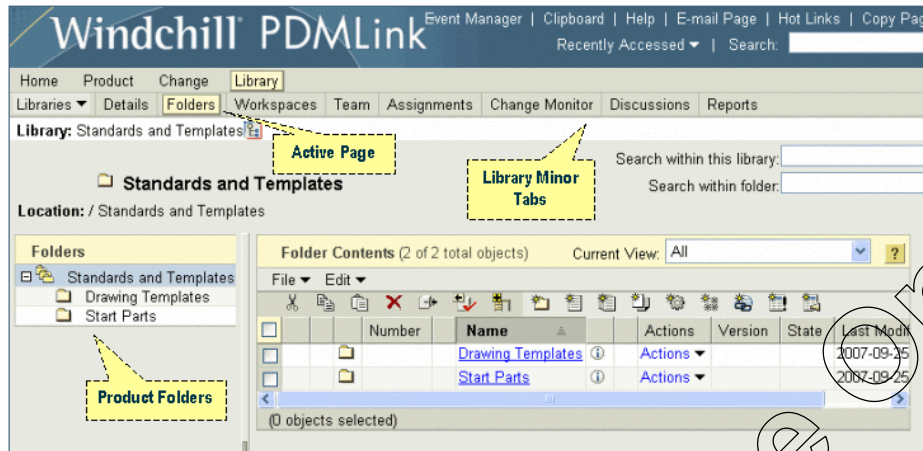


Exploring the Environment: Change Tab

The Change tab provides you access to all problem reports, enterprise change requests, and enterprise change notices of the contexts of which you are a team member. In addition, the Windchill PDMLink Change Monitor enables you to gauge the status of the change objects within your system. The links on the Change minor tab open pages that enable you to explore change objects.

- The **Problem Reports** page displays all problem reports for which you are a team member.
- The **Change Requests** page displays all the change requests for which you are a team member.
- The **Change Notices** page displays all the change notices for which you are a team member.
- The **Change Monitor** page displays the change monitor for the entire system, a product or a library.
- The **Reports** page displays reports available to run and the report results.

Exploring the Environment: Library Tab



Exploring the Environment: Library Tab

The Library tab displays information about libraries to which you have access. A library provides a place for storing and providing access to general business information that is not centered on a specific product or deliverable. For example, component parts might be stored in a Standard Parts library where general access is granted to all users. The administrator for your site will set up libraries that correspond to your company's organization and processes.

The Libraries drop-down menu and Libraries table enable you to select an active library, which exposes minor tabs for additional information:

- The **Details** page displays details about the current library.
- The **Folders** page displays the contents of the current library in a folder structure.
- The **Workspaces** page displays all of your workspaces for the current library.
- The **Team** page displays all team-related information and actions for the team members of the current library.
- The **Assignments** page displays and manages items that are assigned to you for the current library.
- The **Discussions** page displays all discussion topics for the current library.
- The **Reports** page displays the reports available to run for the current library and the report results.

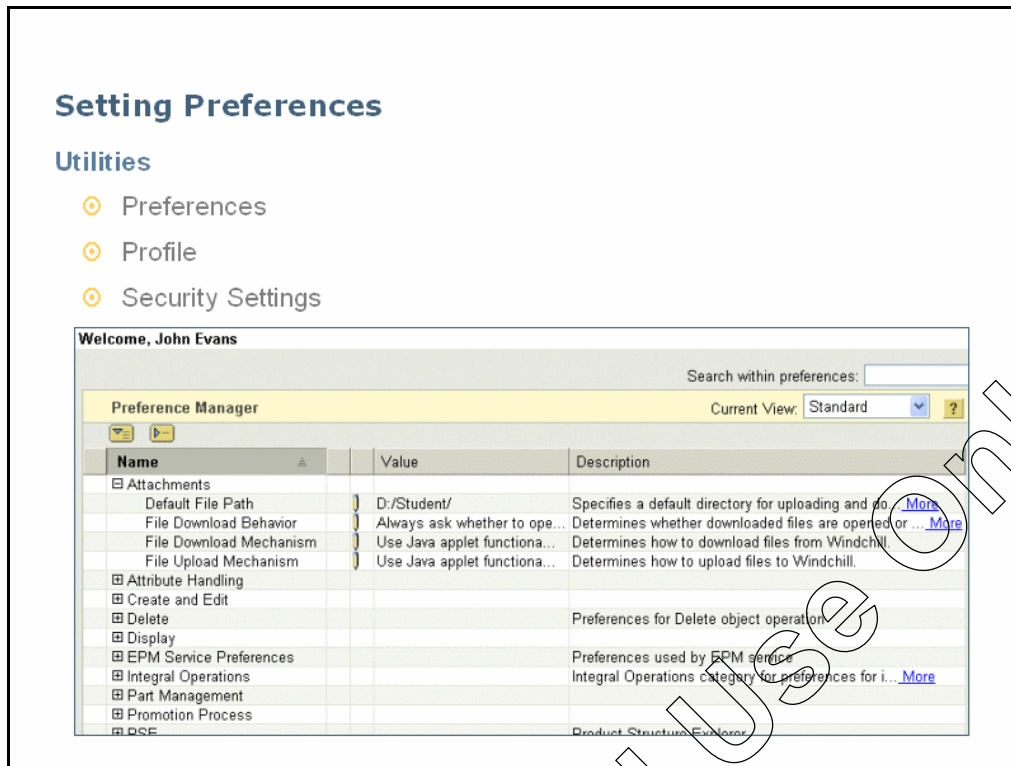


Accessing Help

At the top right of all PDMLink pages, there are a series of links to general tools and the Global Search field. The Help link opens the Windchill Help window which provides the following three types of help:

- The **Online Help** link provides general system help accessible from within most pages. Once in the help system, you can access online reference documents at ptc.com. In many tables, you will see a question mark button, such as the one pictured in the slide. This also opens the general system help, but within the context of the table you clicked.
- The **Tutorials** link provides built-in tutorials that help you understand aspects of PDMLink, and teach you how to complete tasks.
- The **Manuals** link provides a repository of publications that contain detailed information about PDMLink.

The Windchill Help page also provides a search utility that enables you to search all three help tools for information.



Setting Preferences

The Utilities page on the Home major tab provides many tools to modify your PDMLink system. Three of these tools are your Preferences, your Profile, and Your Security Settings.

- The **Preferences** window enables you to set system-wide preferences to customize many aspects of your functionality. Though your site administrator may have set some values, you can modify any of the values to suit your preference.
- The **Profile** page shows general information about the user currently logged on. This information is the registration information that the site has for you. If any of the information is incorrect or if you would like it changed, contact your site administrator. You can modify options, such as selecting a different time zone, on the User Preferences page.
- The **Security Settings** window enables you to grant permission to PDMLink to load applets or perform certain actions on your local file system. You can set all of your security settings on the Utilities page, rather than be prompted throughout the system.

Lab Exercises

Exercise 1: Logging On

Objectives

After successfully completing this exercise, you will know how to:

- Access PDMLink using a Web browser.

Scenario

In this exercise, you take the role of John Evans, an engineer at PTC Sports, as he logs on to PDMLink.

Task 1. Log on to PDMLink.

1. Double-click the **Internet Explorer** icon on your desktop.
2. Click the **Windchill Server** link in the upper-right corner of the Web browser to access the Windchill PDMLink homepage.
3. Type **jevans** in the User name field.
4. Type **ptc** in the Password field.
5. Click the **OK** button to log on to PDMLink.

This completes the exercise.

Exercise 2: Exploring the Environment

Objectives

After successfully completing this exercise, you will know how to:

- Navigate within PDMLink.
- Describe the information you can access within the Home, Product, Change, and Library major tabs.

Scenario


In this exercise, you take the role of John Evans as he explores the PDMLink environment.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as John Evans (jevans/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Explore the Home major tab.


1. Select the **Assignments** minor tab to view the Assignments page. Currently, no assignment is listed.
2. Select the **Updates** minor tab to view the Updates page.
3. Select the **Checked-Out Work** minor tab to view the Checked-Out Work page.
4. Select the **Workspaces** minor tab to view the Workspaces page.
5. Select the **Meetings** minor tab to view the Meetings page.
6. Select the **Notebook** minor tab to view the Notebook page.
7. In the My Notebook table, click the **Expand** icon  to the left of the My General Links folder to view a link.
8. Select the **Subscriptions** minor tab to view the Subscriptions page. Currently, no subscription is listed.
9. Select the **Reports** minor tab to view the Reports page.
10. Select the **Utilities** minor tab to view the Utilities page.


Task 2. Explore the Product tab.

1. Select the **Product** major tab to view the Products page.



If you are in a live classroom environment and you are not taken to the Products list page after selecting the Product tab, click the Products drop-down menu just below the Home major tab and select Full Product List.

2. In the Products table, click the **View information** icon  for the Standard Golf Cart product.
3. Select the **Details** minor tab to view the product attributes.
4. Select the **Folders** minor tab to view the Folders page.
5. Select the **Workspaces** minor tab to view the Workspaces page.
6. Select the **Team** minor tab to view the Team page.
7. Select the **Assignments** minor tab to view the Assignments page. Currently, no assignment is listed.
8. Select the **Change Monitor** minor tab to view the Change Monitor page.

9. Select the **Discussions** minor tab to view the Discussions page.
10. Click the Expand icon  to the left of the Testing folder to view the posting.
11. Select the **Reports** minor tab to view the Reports page.

Task 3. Explore the Change tab.

1. Select the **Change** major tab to view the Change items page.
2. Click the **Current View** drop-down menu to change the view.
3. Select **All Open** to open all problem reports.
4. Select the **Change Monitor** minor tab to access the Changer Monitor.

Task 4. Explore the Library tab.

1. Select the **Library** major tab to view the Libraries page.



If you are in a live classroom environment and you are not taken to the Libraries list page after selecting the Library tab, click the Libraries drop-down menu and select Full Library List.

2. Click the **Standards and Templates** link to open the library.

This completes the exercise.

For Educational Use Only

Exercise 3: Accessing Help

Objectives

After successfully completing this exercise, you will know how to:

- Access PDMLink's built-in tutorials, online help, and online manuals.

Scenario


In this exercise, you again take the role of John Evans, this time exploring PDMLink's help.

Initial Conditions


To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as John Evans (jevans/ptc).
- Start on the Folders page of the Library major tab.

Task 1. Explore Online Help.

1. In the upper-right corner of the PDMLink window, click the **Help** link to open the Windchill Help window.
2. In the Windchill Help window, click the **Online Help** link to open the Windchill Online Help window.
3. In the left panel, click the **Working with Windchill Objects** book link to expand the book topics.
4. Select the **Renaming an Object** topic to open the help information in the right panel.
5. Click the **Search** button in the top-left corner to open the search field in the left panel.
6. Click the **Windows Close** button  to close the Windchill Online Help window.



Task 2. Explore Tutorials.

1. In the Windchill Help window, click the **Tutorials** link to open the Tutorials window.
2. Observe the available tutorials. Click the **Windows Close** button  to close the Tutorials window.




You must have an active Internet connection to view the list of tutorials.

Task 3. Explore Manuals.

1. In the Windchill Help window, click the **Manuals** link to open the Publications window.
2. Observe the available manuals. Click the **Windows Close** button  to close the Publications window.
3. Click the **Windows Close** button  to close the Windchill Help window.

Task 4. Explore Context-Sensitive Help.

1. Click the **Help** icon  in the upper-right corner of the Folder Contents table to open the Folders Page online help topic.
2. Click the **View Other Topics** button to expose the Contents list in the left panel.

3. Click the **Windows Close** button  to close the Windchill Online Help window.

This completes the exercise.

For Educational Use Only

Exercise 4: Setting Preferences

Objectives

After successfully completing this exercise, you will know how to:

- Set user preferences.
- Access your profile.
- View your security settings.

Scenario

In this exercise, you take the role of John Evans as he explores and sets user preferences. You will examine user preferences and set a working document directory. You will also view your profile. Lastly, you will view your security permissions.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:




- Log on to PDMLink as John Evans (jevans/ptc).
- Start on the Folders page of the Library major tab.

Task 1. Set the Default File Path preference.

1. Select the **Home** major tab.



If you are in a live classroom environment and you are not taken to the Utilities page after selecting the Home major tab, select the Utilities minor tab in the Home major tab.

2. On the Utilities page, click the **Preference Manager** link to open the Preference Manager window.
3. Click the **Expand** icon  to the left of the Attachments node to view the preferences.
4. Click the **Set preference** icon  next to the Default File Path preference to open the Set Preference page.
5. Type **D:\Student** in the New field of the Set Preference page.
6. Click the **OK** button to set the preference.
7. Click the **Set preference** icon  next to the File Download Mechanism preference to open the Set Preference page.
8. Click the **Value** drop-down menu at the bottom of the page.
9. Click the **Use Java applet functionality to download files**.
10. Click the **OK** button to set the preference.
11. Select the **Utilities** minor tab to return to the Utilities page.

Task 2. Explore your profile.

1. Click the **Profile** link to view John's profile.

Task 3. View your security settings.

1. Select the **Utilities** minor tab to return to the Utilities page.
2. Click the **Security Settings** link to open the Edit PTC Security Settings window.

3. Observe the available security settings. Click the **Cancel** button to close the Edit PTC Security Settings window.

This completes the exercise.

For Educational Use Only

Summary

After successfully completing this module, you should know how to:

- Identify and describe the capabilities of PDMLink's primary object types.
- Identify PDMLink storage locations, iteration and version controls, process controls, access controls, and collaboration features.
- Access PDMLink.
- Navigate within PDMLink.
- Access Help.
- View and Modify Preferences.

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. Which object is NOT a standard Windchill PDMLink object?
 - A - CAD document
 - B - Part
 - C - Drawing
 - D - End item
2. When you check in a modified object...
 - A - the old object is deleted from the system.
 - B - the object moves to the next state in its life cycle.
 - C - its iteration is incremented.
 - D - none of the above.
3. A part does NOT contain data, but can have many relationships. Which of the following can a part be associated to?
 - A - A document, such as a specification.
 - B - A CAD document that contains a 2-D drawing or a 3-D model.
 - C - Other parts arranged in a product structure.
 - D - All of the above.

For Educational Use Only

Locating Product Information

Introduction

In this module, you explore the tools and methods available to locate information stored in Windchill PDMLink 9.0.

Windchill PDMLink provides powerful tools that enable you to locate objects and view the information that they hold. The primary way to locate an object is by using PDMLink's search tools. This is the best way to locate many types of objects. Another way to locate objects is by browsing for them.

Objectives

After completing this module, you will be able to:

- Describe searching and browsing methods.
- Execute basic, advanced, and context sensitive searches.
- Save advanced searches.
- Browse Products and Libraries.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

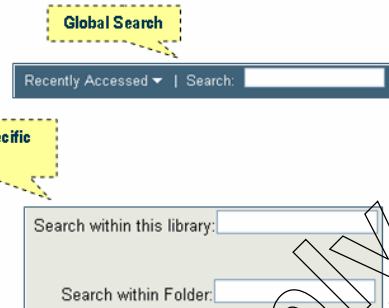
You may use the space below to take your own notes.

For Educational Use Only

Locating Information: Search

Search for objects

- Global searches
- Advanced searches
- Context specific searches
- Desktop Integration searches



The screenshot shows a search interface. At the top, there is a 'Global Search' button. Below it, there is a search bar with a dropdown menu labeled 'Recently Accessed' and a search input field. To the right of the search bar, there is a 'Context Specific Search' button. Below the search bar, there are two more search input fields: 'Search within this library:' and 'Search within Folder:'.

Locating Information: Search

The process of locating an object is a simple one, but there are many choices for how you can begin. You can initiate a global search that searches both products and libraries for objects. Alternatively, you can use an advanced search to further narrow your criteria. You can also save searches to reuse them later.

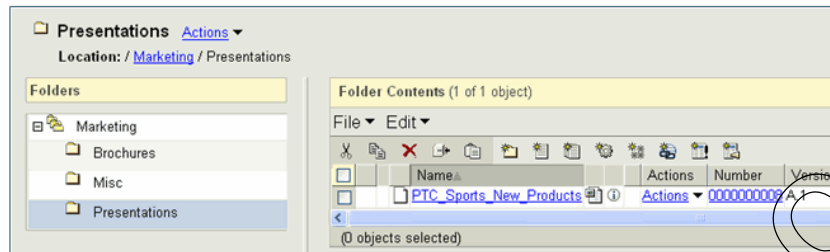
You can initiate context-sensitive searches from within a specific product or library so you can search for objects within that product or library. And lastly, you can initiate a search from within Microsoft Desktop Applications such as Microsoft Word, using PDMLink's Desktop Integration features.

You will learn how to use most of these search options in the demonstrations and exercises of this module.

The search keywords may include wildcard characters, such as asterisks. Wildcards enables you to modify your search to be more specific, or more general, than just the word you entered. Without wildcards, search results are limited to the objects that exactly match the word or words you enter in the search field.

Browse for objects

- Products
- Libraries



Another method you can use to locate information is to browse for it. For example, if you know you are searching for a document that belongs to the Marketing department, you can browse to the Marketing library and browse its folders to locate the object.

Alternatively, you could navigate down the folder structure until you locate it.

Viewing Object's Details

View a Located Object's

- Details
- Contents
- Relationships

View results by clicking
an object's details icon

Search Results (7 of 7 total objects)

	Name	Number	Actions	Context	Version	State
<input type="checkbox"/>	Golf Cart Owner's Man... More	0000000002	Actions	Golf Cart	A.1.1	In Work
<input type="checkbox"/>	Golf Cart Req	0000000003	Actions	Golf Cart	A.1.1	In Work
<input type="checkbox"/>	Golf Cart Owner's Man... More	0000000004	Actions	Golf Cart	A.1.1	In Work
<input type="checkbox"/>	Golf Cart Owner's Man... More	0000000006	Actions	Golf Cart	A.1.1	In Work
<input type="checkbox"/>	Golf Cart Spec	0000000007	Actions	Golf Cart	A.1.1	In Work
<input type="checkbox"/>	Golf Cart Owner's Man... More	0000000005	Actions	Golf Cart	A.1.1	In Work
<input type="checkbox"/>	Golf Cart Owner's Man... More	0000000001	Actions	Golf Cart	A.2.2	In Work

(0 objects selected)

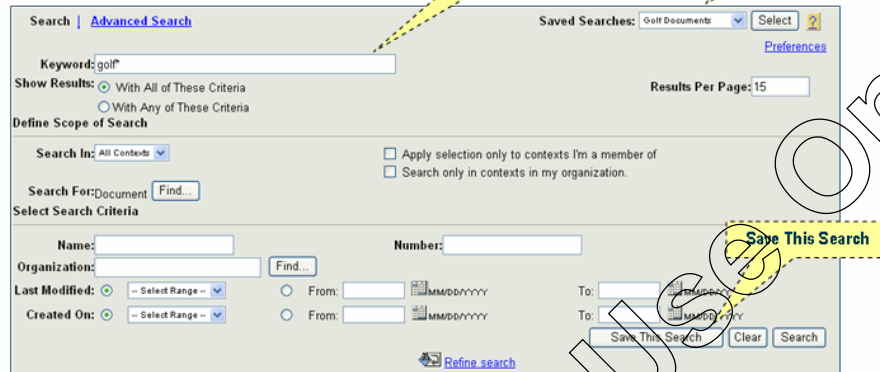
Viewing Object's Details

Regardless of how you locate an object, you can view its details, its contents, and its relationships by clicking its View information icon.

Saving Searches

Searching

- 🕒 Advanced searches
 - Narrow your search with specific criteria.
- 🕒 Saved Searches
 - Save searches to run again later.



The screenshot shows the 'Advanced Search' interface. At the top, there's a 'Keywords' field with 'golf' entered. Below it, 'Show Results' options are set to 'With All of These Criteria'. The 'Define Scope of Search' section includes a 'Search In' dropdown set to 'All Contexts' and checkboxes for 'Apply selection only to contexts I'm a member of' and 'Search only in contexts in my organization'. The 'Search For' dropdown is set to 'Document'. The 'Select Search Criteria' section has fields for 'Name', 'Number', 'Organization', 'Last Modified', and 'Created On', each with a 'Find...' button. At the bottom right, there are buttons for 'Save This Search', 'Clear', and 'Search'. A 'Refine search' link is at the bottom center. Three yellow callout boxes point to specific features: 'Specify additional search criteria' points to the 'Keywords' field, 'Execute Saved Searches' points to the 'Saved Searches' dropdown, and 'Save This Search' points to the 'Save This Search' button.

Saving Searches

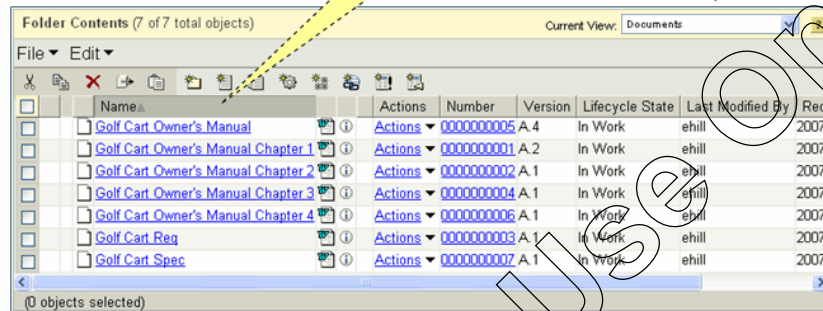
Advanced search capabilities may be accessed by clicking on the Search link. Searches may be filtered by using attributes, such as keyword, name, number, context, and so on.

When using the search page, you can save and name your search criteria so you can execute the same search again in the future. As a default, your last search is always saved, although you can change this in your search preferences.

Browsing for Objects

Browsing

- Browse for objects in
 - Product Folders
 - Library Folders
- Modify Current Views
 - Filter the Folders table
 - Sort the list



Browsing for Objects

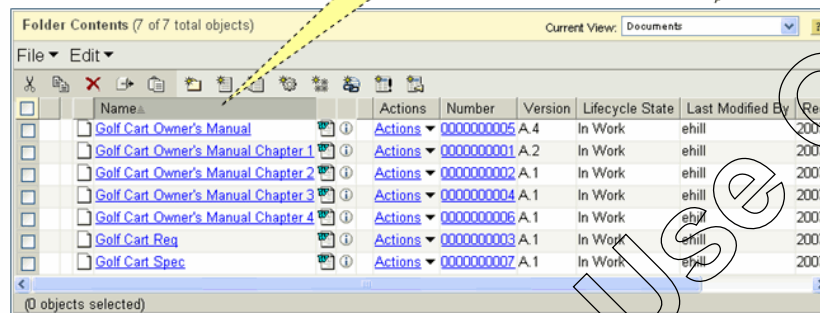
Within Folders pages, you can limit the types of objects that display in the Folders table by selecting an option from the Current View drop-down list. You can filter the table by selecting:

- Pending Changes
- Generic Parts
- In Work
- All Contents as Table
- Links
- By Owner
- CAD Documents
- Created or Modified by Me
- Not Released
- Configurable Generic Parts
- Documents
 - Discussed
 - Released
- Recently Modified
- Variant Specifications
- Promotion Requests
- Folder and Contents
- Parts
- Change Management Objects
- Dynamic Documents
- Folders
- Customize

Browsing for Objects

Browsing

- Browse for objects in
 - Product Folders
 - Library Folders
- Modify Current Views
 - Filter the Folders table
 - Sort the list



Browsing for Objects (cont.)

You can also sort the tables by any column heading. Simply click it to sort it in ascending order, and again to sort it in descending order.

Lab Exercises

Exercise 1: Searching for Objects

Objectives

After successfully completing this exercise, you will know how to:

- Execute basic searches.
- Execute advanced searches.
- Execute context sensitive searches.
- Save advanced searches.

Scenario

In this exercise, you take the role of John Evans. Erica Hill told John that she uploaded the Golf Cart Owner's User Guide. John wants to review it now that it has been released. As John, you can use multiple searching methods to locate the guide.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans@ptc).
- Start on the Overview page of the Home major tab.

Task 1. Locate the Golf Cart Owner's Manual documents with a basic global search.

1. Type ***golf*** in the global Search field in the upper-right corner of the page to specify a search criteria for golf cart related documents.
2. Press the ENTER key to launch the search.

Task 2. Modify the search to search for a specific object type.

1. Click the upper part of the Internet Explorer scroll bar to scroll up.
2. Click the **Customize...** link in the Define Scope of Search section on the Search page to open the list of searchable objects.
3. In the Find Type dialog box, select the **Object** check box to select all rows on the page.
4. Clear the **Object** check box to clear all rows on the page.
5. Select the **Document** check box to select the Document object type.
6. In the Find Type dialog box, click the **OK** button to save the information and exit the window.
7. Click the **Search** button to launch the modified search.

Task 3. Save a Search.

1. Click the **Save This Search** button to save this modified search.
2. Type **Golf Documents** in the Search Name field to assign a name to this search.
3. Click the **OK** button to save the information.

Task 4. Launch Context Specific Search.

1. Select the **Product** major tab to open the products information.
2. Ensure that you are viewing the Standard Golf Cart product. Select the **Folders** minor tab to view all folders and contents.

3. Type ***spec*** in the Search within this product field to launch the search within the Standard Golf Cart product.
4. Press ENTER to start the search.
5. Select the **Folders** minor tab to return to the Folders page.

This completes the exercise.

For Educational Use Only

Exercise 2: Browsing for Objects

Objectives

After successfully completing this exercise, you will know how to:

- Browse Products.
- Browse Libraries.

Scenario

In this exercise, you take the role of John, and again locate the Golf Cart Owner's Manual. However, this time, you do it by browsing.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the Folders page of the Product major tab.

Task 1. Browse folders using the Current Views menu to filter the Folders table.

1. In the Folders table of the left pane, select the **Documentation** folder to view the folder contents.
2. In the Folders table of the left pane, click the **CAD Models** folder link in the Folders window to view the folder contents.
3. Click the **Current View** drop-down menu to access the view options.
4. Select **CAD Documents** to view all CAD documents.
5. Click the **Current View** drop-down menu again to access the view options.
6. Select **All** to view all objects.
7. Click the **Number** column heading to sort the objects by number in ascending order.
8. Click the **Name** column heading to sort the objects by name in ascending order.
9. In the left pane, select the **Standard Golf Cart** folder to view the top-level objects.
10. Select the **Library** major tab to navigate through a library.
11. Click the **Libraries** drop-down menu just below the Home major tab to view the list of libraries.
12. Review the list. Select **Standards and Templates** to return to the library.
13. In the left pane, select the **Drawing Templates** folder to view the drawing templates.
14. In the left pane, select the **Start Parts** folder to view the start part templates.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Describe searching and browsing methods.
- Execute basic, advanced, and context sensitive searches.
- Save advanced searches.
- Browse Products and Libraries.

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. Which of the following searches are you NOT able to perform within PDMLink?
 - A - Basic searches
 - B - Advanced searches
 - C - Context specific searches
 - D - Multi-server searches
2. True or False? To browse for objects, you access the Folders page of a product or a library.
 - A - True
 - B - False
3. You can limit the object types that display in the Folders table by..
 - A - modifying the user preferences.
 - B - selecting an option from the Current View drop-down list.
 - C - accessing the appropriate sub-folder for an object type.
 - D - all of the above.

For Educational Use Only

Viewing Product Information

Introduction

In this module, you learn about the tools and methods available to view product information stored in Windchill PDMLink 9.0.

Because product information is complex and multifaceted, many different objects are used to define and store it. You learn how to explore the information that is stored with the three major objects: end items and parts, CAD documents, and documents. You also learn how to view representations with ProductView.

Objectives

After successfully completing this module, you will be able to:

- Explain the benefits of Visualization.
- View the details and content of Windchill objects.
- Identify representation viewing tools.
- View representations with ProductView.
- View Windchill product structure.
- View the relationships and histories of Windchill objects.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

For Educational Use Only

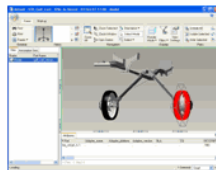
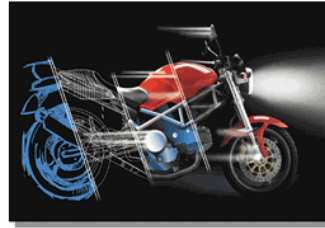
Introduction to Visualization

PDMLink Visualization

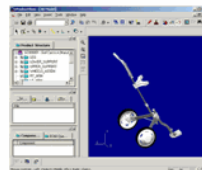
- View and share intellectual property about products.
- Discuss and markup digital products.

Visualization Tools

- ProductView Lite
- ProductView Standard



ProductView Lite



ProductView Standard



Introduction to Visualization

Through PDMLink, you can view and share your company's intellectual property to gain a better understanding of the product information you are accessing, regardless of the format that data is stored in.

You can also collaborate on and discuss the digital product.

Visualization is the primary language for discussing products – and PDMLink uses visualization everywhere, enabling you to discuss products in context. In PDMLink, you can talk about a three dimensional, interactive, intuitive representation of your product.

The great aspect about viewing a digital product is that you can see what it is. It is intuitive, it is unambiguous, and it is interactive. You can spin it, rotate it, open it, examine it, and see how it is all put together.

Windchill offers two tools to view digital product information: ProductView Lite and ProductView Standard. ProductView Lite provides basic viewing capabilities. ProductView Standard does everything that ProductView Lite does, and more. However, to use both, you must download and install them. You can do this from the Windchill home page.



In this course, you use ProductView Lite. There is a separate course available that introduces you to ProductView Standard and its additional capabilities.

Viewing Object Information

Viewing Details

- Search results
- Folder table
- Product structures
- Workspaces

View information icon

ⓘ Name: golf_cart.asm
 Number: GOLF_CART.ASM
 Version: A.2
 State: In Work
 Created by: John Evans

File ▾ Edit ▾						
	Name	Actions	Number	Version	Lifecycle State	
	card_holder prt	Actions ▾	CARD HOLDER.PRT	A.1	In Work	
	golf_cart_skel prt	Actions ▾	GOLF_CART_SKEL.PRT	A.1	In Work	
	golf_cart.asm	Actions ▾	GOLF_CART.ASM	A.2	In Work	
	handle prt	Actions ▾	HANDLE.PRT	A.1	In Work	
	hub_cap prt	Actions ▾	HUB_CAP.PRT	A.1	In Work	
	left_actuator_skel prt	Actions ▾	LEFT_ACTUATOR_SKEL.PRT	A.1	In Work	
	left_actuator.asm	Actions ▾	LEFT_ACTUATOR.ASM	A.1	In Work	
	leg_skel prt	Actions ▾	LEG_SKEL.PRT	A.1	In Work	
	leg.asm	Actions ▾	LEG.ASM	A.1	In Work	

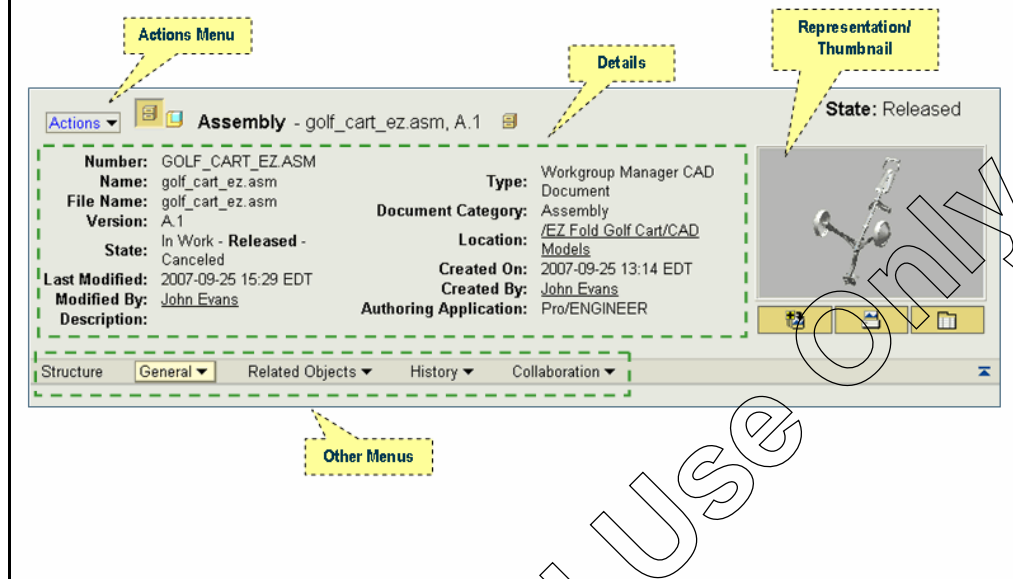
Viewing Object Information

Once you have located an object, you can view its details by clicking the View information icon—the icon that uses the international information symbol.

This icon displays in the row next to nearly every type of object you encounter, regardless of whether you locate the object by searching for it, browsing for it in folders or workspaces, or navigating through the product structure. Clicking the View information icon takes you to the object's details page.

Viewing Object Information (cont.)

Viewing Details



Viewing Object Information (cont.)

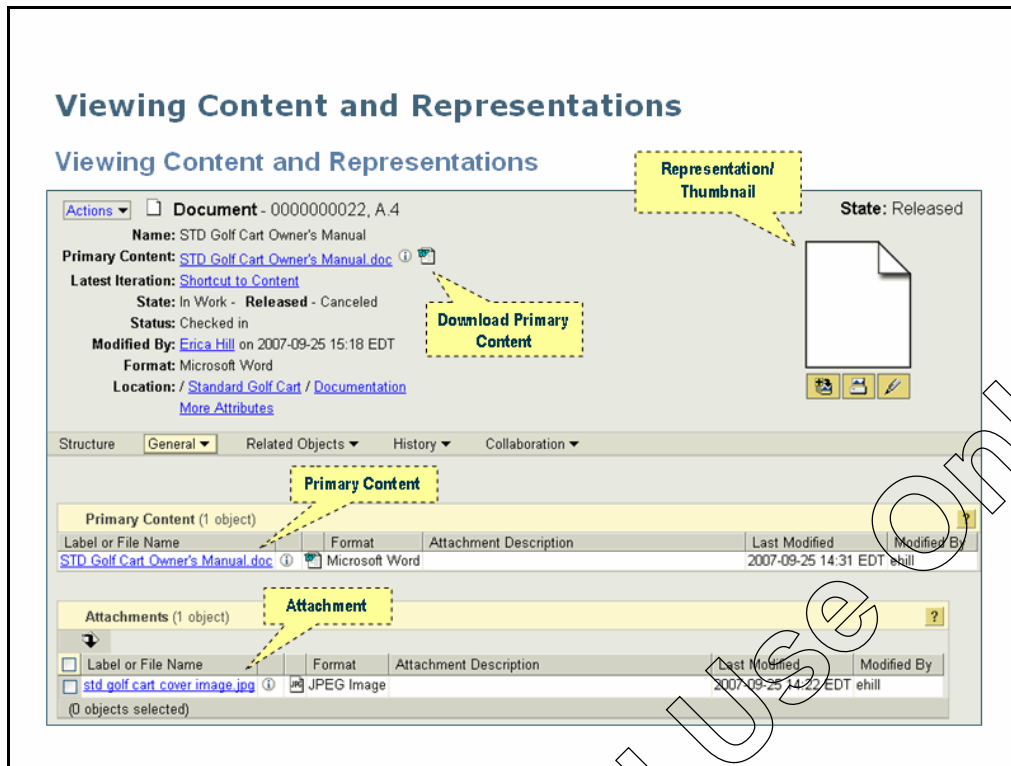
The details pages for documents, end items, parts, and CAD documents appear very similar.

The details page provides a central location for accessing information about and performing actions on an object. The figure above shows a CAD document details page.

The Actions menu, near the top of this page, enables you to take specific actions with the object. For example, you can check out, check in, and so on.

Below the CAD document name and the Actions menu are the general document details and the document thumbnail. Most of the details are self-explanatory.

Additional information about the CAD document, for example associated objects or communication related to the object, is described in the tables available at the bottom of the information page. The menu toolbar controls what is displayed in the tables. In the subsequent sections, you will learn more about these menus.



Viewing Content and Representations

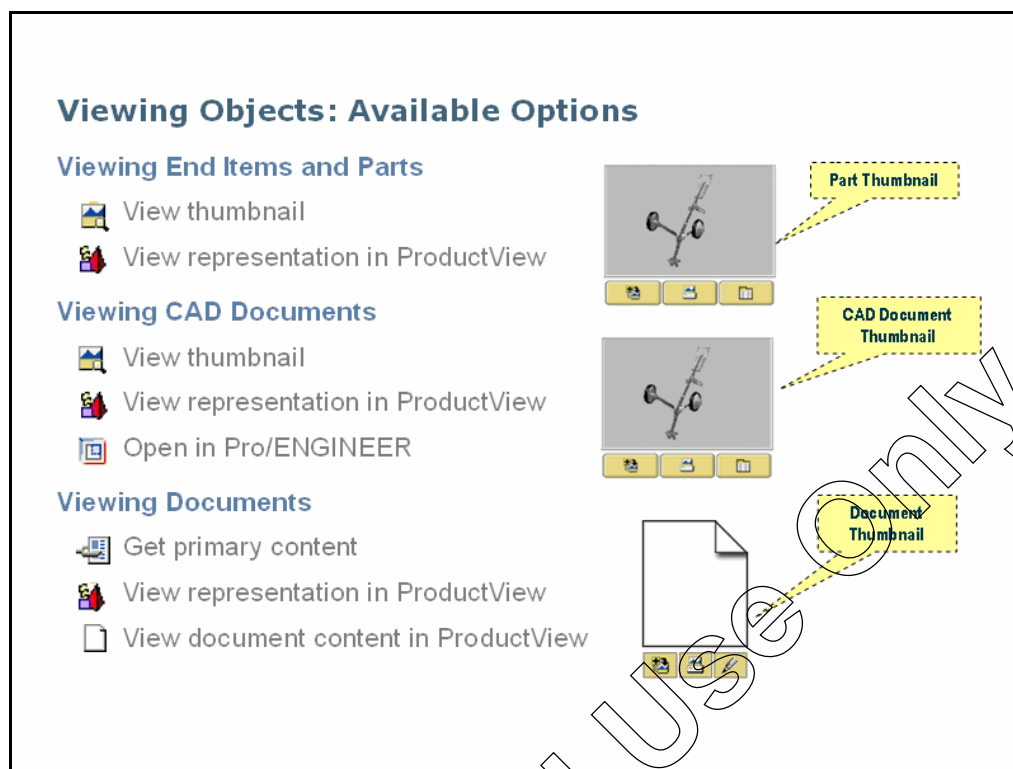
A details page also provides links to the content and representations that are stored as part of the object.

A document object's details page is shown. At the top is an important field, the Primary Content field. This field provides a link to the primary file that is stored in this document. Notice that you can also see its format.

The lower part of the details page provides links that enable you to view the relationships and histories of documents. This screen shot shows the General link, which includes the Primary Content and Attachments tables. These tables list the files that are attached to the document.

Attachments are files that are stored as secondary content along with the primary file. You can attach files when creating, adding, or updating a document. The author included this graphic file of the document's cover art as an attachment.

If a part, document, or CAD document has a representation, you can access it by clicking the thumbnail icon on the details page. However, you can also view content and representations without ever viewing a details page.



Viewing Objects: Available Options

Although end items and parts do not have content, they often do store representations that enable you to view the product they are defining. These representations are typically created when the end item or part is associated to a CAD document that contains a CAD model. You are able to view either the thumbnail representation or the fully navigable representation in ProductView by clicking the appropriate icon.

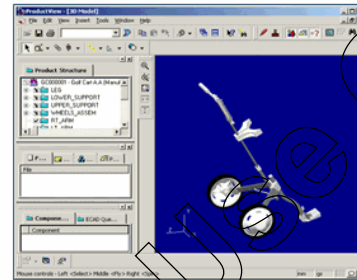
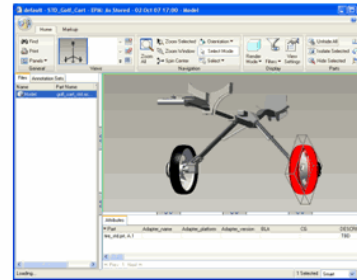
Because CAD documents actually contain the original models, you can also view representations of these models from the CAD document. In addition, if you are working with CAD documents in your workspace and have the authoring CAD application, you can view the original CAD Model there.

Documents are a little different. Representations of documents are not stored in the system. Consequently, you can download the file contained within it by clicking the content icon, and either save it to disk or open it immediately. Alternatively, if it is a format that ProductView can display, you can view the content in ProductView.

Viewing Representations: Tools

Tools

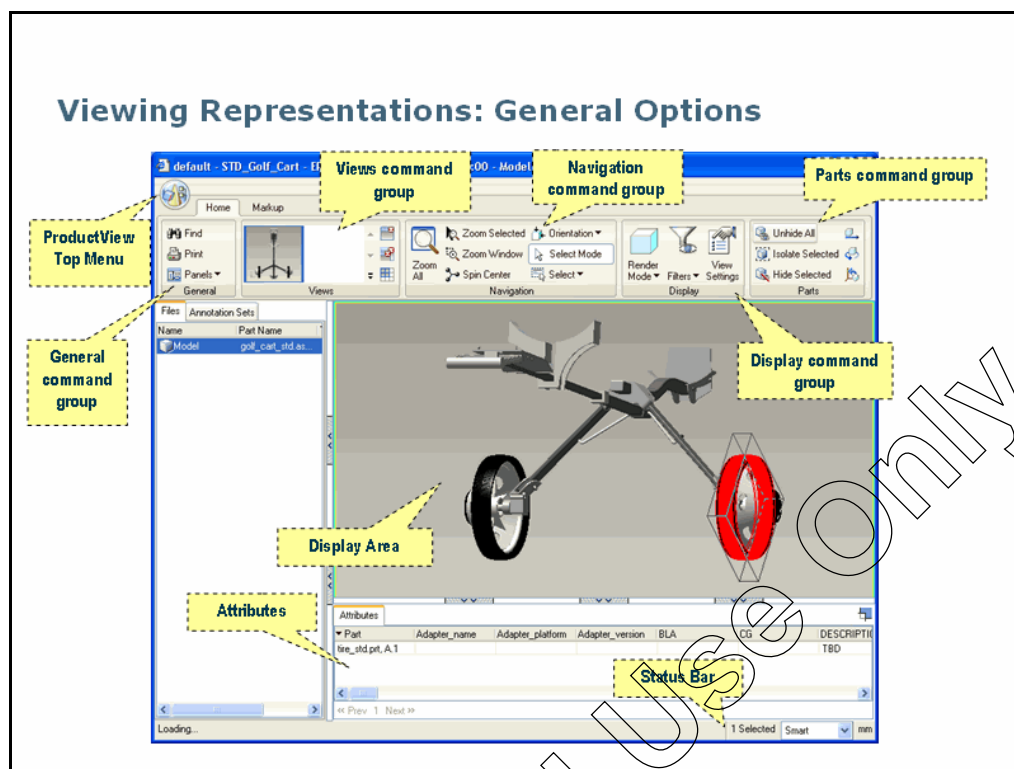
- ProductView Lite
 - View
 - 3-D models
 - 2-D drawings
 - Images
 - Documents
 - ECAD data
 - Dimension and measure
 - Models
 - Drawings
 - Annotate all view types
- ProductView Standard
 - All of the above and more...



Viewing Representations: Tools

As stated earlier, there are two viewers: ProductView Lite and ProductView Standard.

ProductView Lite is a data visualization tool that provides basic viewing capabilities for 3-D models, 2-D drawings, images, documents, and ECAD data. You can dimension, measure, and annotate models and drawings. ProductView Standard does everything that ProductView Lite does, and more.



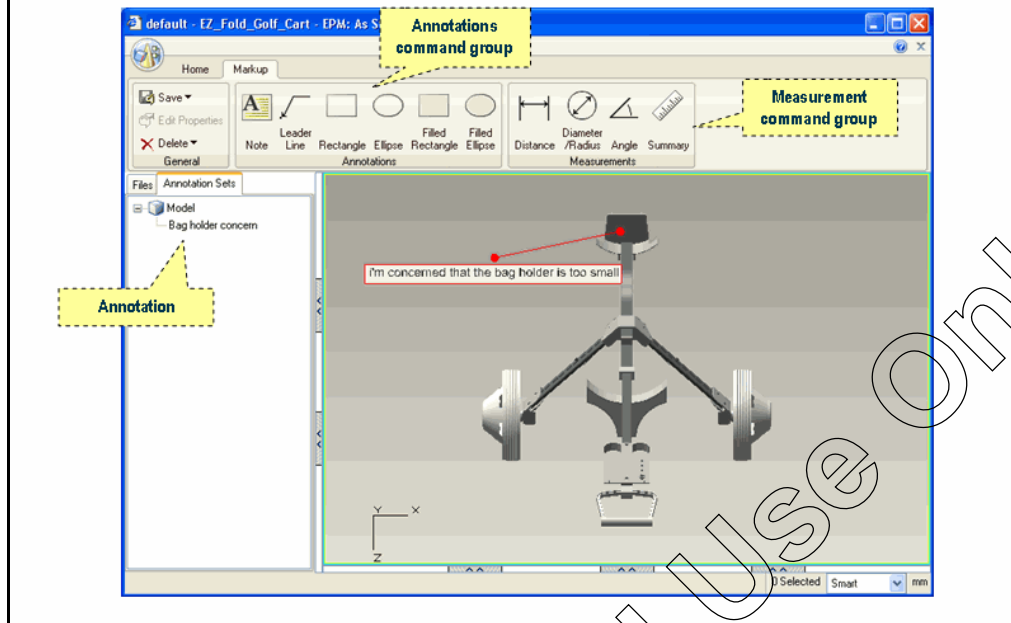
Viewing Representations: General Options

ProductView Lite is composed of five main elements. The top-level cascading menu, which is accessed by clicking the logo in the upper-left corner, contains basic commands for using ProductView. The Ribbons area contains the Home and Markup tabs, which have an associated set of the command groups. The Panels area is composed of the primary (vertical) panel, which contains the Files and Annotation Sets tabs, and the horizontal panel, which contains the Attributes tab. The viewing area is where you open files for viewing. Finally, the status bar displays information about the current view, along with selection and units settings.

The horizontal panel on the Home major tab contains the following command groups.

- General
- View
- Navigation
- Display
- Parts

Viewing Representations: Markup Options



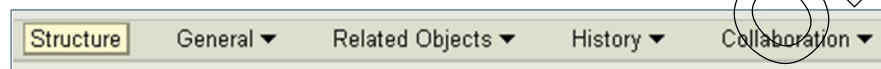
Viewing Representations: Markup Options

The Markup tab is used to create annotations and perform measurements. Once saved, the annotation can be accessed from the Annotation Sets tab on the vertical panel.

Viewing Objects: Relationships, Histories, and Other Information

Menus

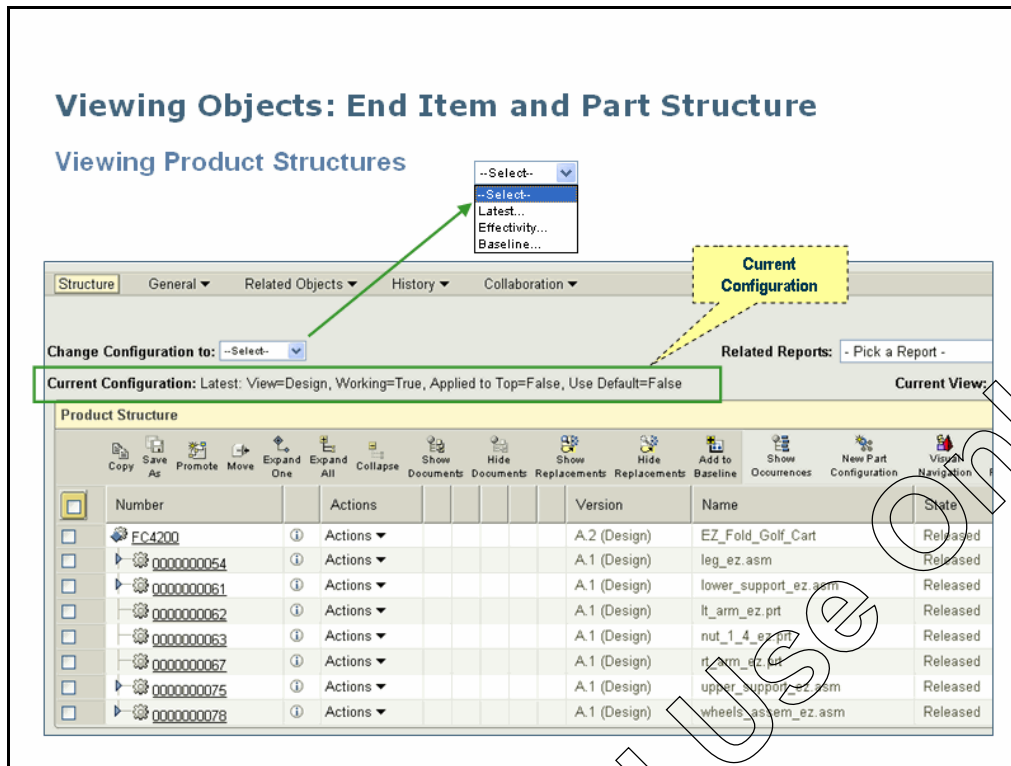
- Structures
- General
- Related objects
- History
- Collaboration



Viewing Objects: Relationships, Histories, and Other Information

You have now seen the type of details you can view, and the means of viewing content. From within each object's details page, you can also view additional information, such as structure, and all of the relationships it has with other objects, or in other words, its history.

PDMLink has organized the additional object information under several menus. These menus are available on the details page of end items, parts, CAD documents, and documents.



Viewing Objects: End Item and Part Structure

The Product Structure table displays a hierarchical representation of the parts and other lower-level end items that make up the end item being viewed.

Because a product structure can be expanded and collapsed, you can navigate through this structure, viewing parts and assemblies, and expanding the assemblies to see the component parts. For each node, additional information about that part is displayed and you can perform actions on that part, such as linking to the details page.

For parts and end items, the product structure displayed is based on the current configuration specification, which you can change using the Change configuration to drop-down menu.

Notice that the current configuration is set to Latest and the View is set to Design. If you change it, the product structure is then displayed based on the new configuration. The menu provides three options:

- **Latest** – displays the latest configuration.
- **Effectivity** – displays parts that meet the effectivity criteria you specify. You can choose effectivity based on date, lot number, or serial number.
- **Baseline** – displays the baseline you select if a baseline has been created.

Product Structure: Displaying Documents

Viewing Product Structures

Related documents

Show Documents

Product Structure					
	Number	Document	Actions	Version	Name
<input type="checkbox"/>	GC000001	CAD Document	Actions	A.3 (Design)	GOLF_CART
<input type="checkbox"/>	000000005		Actions	A.4	Golf Cart Owner's Manual
<input type="checkbox"/>	GOLF_CART.ASM		Actions	A.7	golf_cart.asm
<input type="checkbox"/>	000000036		Actions	A.1 (Design)	leg.asm
<input type="checkbox"/>	LEG.ASM		Actions	A.1	leg.asm
<input type="checkbox"/>	000000044		Actions	A.1 (Design)	lower_support.asm
<input type="checkbox"/>	LOWER_SUPPORT.ASM		Actions	A.1	lower_support.asm
<input type="checkbox"/>	000000046		Actions	A.2 (Design)	lt_arm.prt
<input type="checkbox"/>	LT_ARM.PRT		Actions	A.2	lt_arm.prt
<input type="checkbox"/>	000000047		Actions	A.1 (Design)	nut_1_4.prt
<input type="checkbox"/>	NUT_1_4.PRT		Actions	A.1	nut_1_4.prt

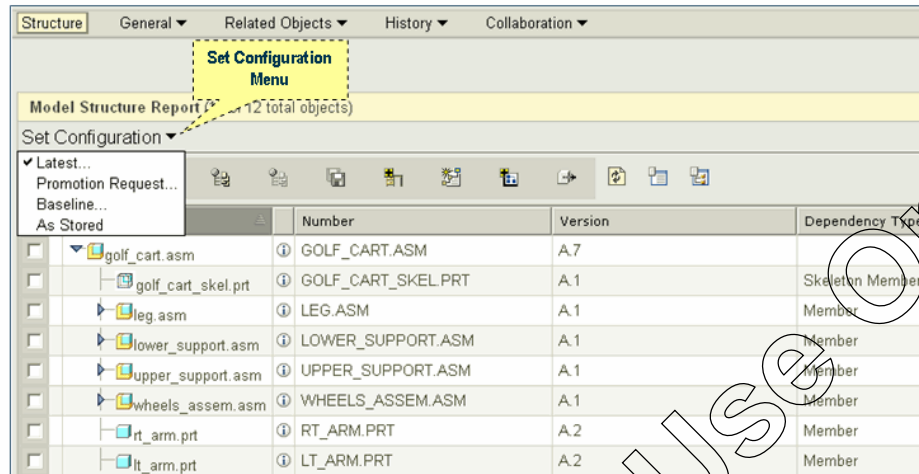
Product Structure: Displaying Documents

The **Show Documents** button shows all of the documents associated to selected end items and parts. They are located in the table with their associated part or end item. These documents include both the CAD documents and the standard documents.

Viewing Objects: CAD Document Structure

CAD Document Structure

Set Configuration

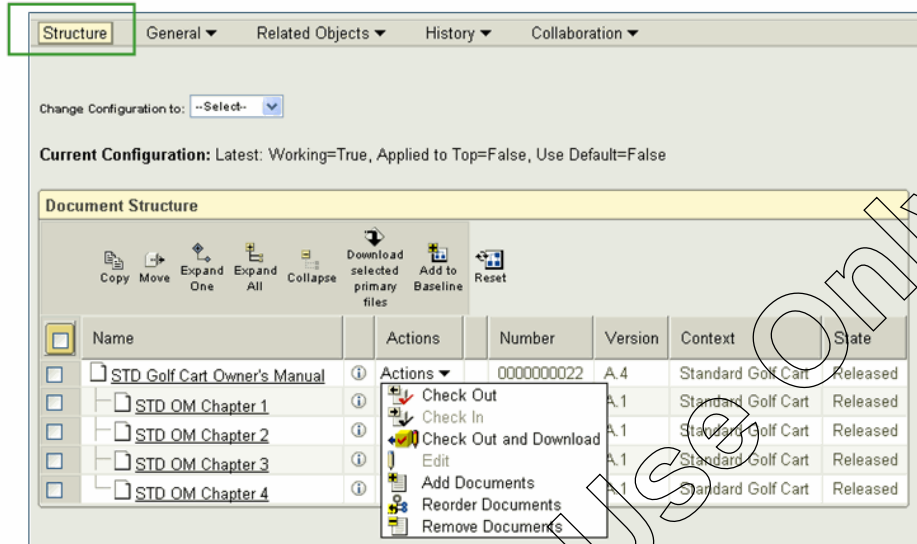


Viewing Objects: CAD Document Structure

The CAD document structure page is similar to the Product Structure page. It enables you to view the hierarchy of CAD documents that make up a 3-D model. Model Structure Report enables you to see the structure of an object without having to open an editing application, such as Pro/ENGINEER. You can also use the Set Configuration menu to change the displayed CAD document configuration. The available configuration options are Latest, Promotion Request, Baseline, and As Stored.

Viewing Objects: Structure Menu

Document Structure



Change Configuration to: --Select--

Current Configuration: Latest: Working=True, Applied to Top=False, Use Default=False

Document Structure

Copy Move Expand One Expand All Collapse Download selected primary files Add to Baseline Reset

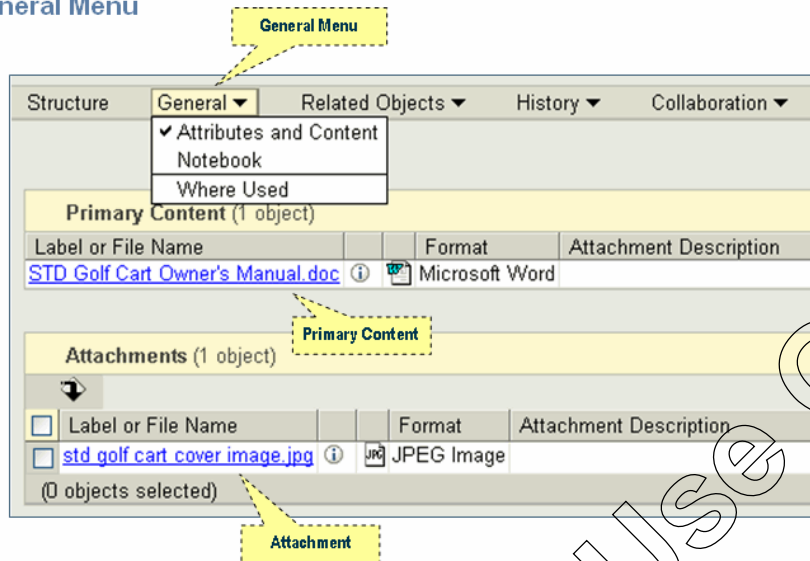
	Name	Actions	Number	Version	Context	State
<input type="checkbox"/>	STD Golf Cart Owner's Manual	Actions	0000000022	A.4	Standard Golf Cart	Released
<input type="checkbox"/>	STD OM Chapter 1	Check Out		A.1	Standard Golf Cart	Released
<input type="checkbox"/>	STD OM Chapter 2	Check In		A.1	Standard Golf Cart	Released
<input type="checkbox"/>	STD OM Chapter 3	Check Out and Download		A.1	Standard Golf Cart	Released
<input type="checkbox"/>	STD OM Chapter 4	Edit		A.1	Standard Golf Cart	Released
		Add Documents		A.1	Standard Golf Cart	Released
		Reorder Documents				
		Remove Documents				

Viewing Objects: Structure Menu

On a details page of a document, select Structure. The information page is refreshed to display the document structure table. The displayed document structure is also dependent on the Latest, the Promotion Request, or the Baseline configuration option.

Viewing Objects: General Menu

General Menu



Viewing Objects: General Menu

The General menu enables you to view associated document Attributes and Content, Notebook, and Where Used information.



The available menu selections depend on the object type. The menu options of a document differ from those of a part.

Viewing Objects: Related Objects Menu

Related Objects Menu

Baselines
Changes
Documents
Part Instances
Parts

Related Objects Menu

Structure General **Related Objects** History Collaboration

References Documents (2 of 2 total objects) Current View: Default

<input type="checkbox"/>	Number	Version	Actions	Name	Context	State	Last Modified	Comments
<input type="checkbox"/>	0000000003	A.1		Golf Cart Req	Golf Cart	In Work	2007-05-03 04:15 PM EDT	
<input type="checkbox"/>	0000000007	A.1		Golf Cart Spec	Golf Cart	In Work	2007-05-03 04:15 PM EDT	

(0 objects selected)

Reference Documents

Viewing Objects: Related Objects Menu

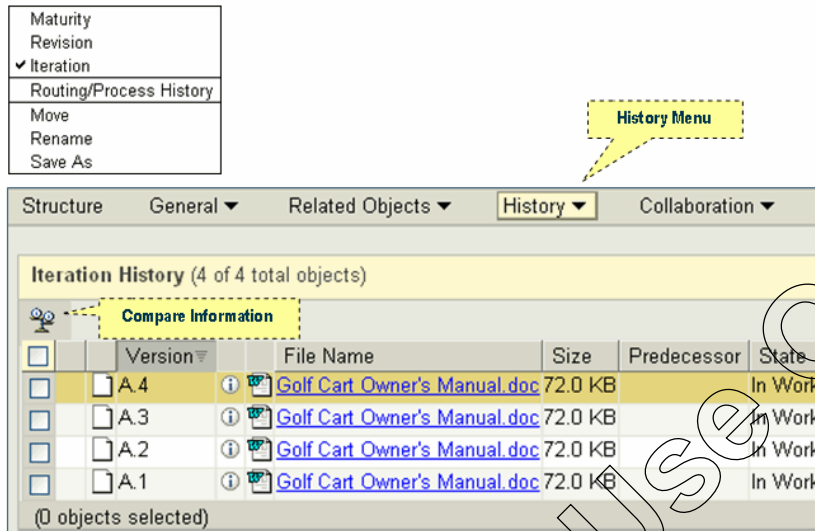
The Related Objects menu includes tables displaying objects related in some way to the object of the information page you are viewing. Click a link to open the related information table or tables.



This figure only lists the menu selections for a document object. The menu options of a CAD document or a part slightly differ.

Viewing Objects: History Menu

History Menu



Viewing Objects: History Menu

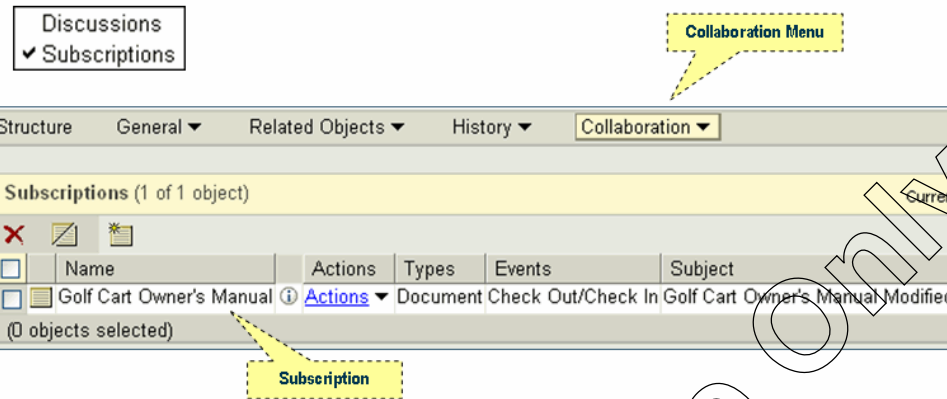
The History menu provides various links to object history information, such as Maturity (life cycle) history, Revision and Iteration history, or Process history. Additionally, history related to the Move, Rename, and Save As operations is also available. The Compare Information icon enables you to compare different versions and iterations and view the differences.



Other object types, such as parts and end items may have additional menu selections.

Viewing Objects: Collaboration Menu

Collaboration Menu



Viewing Objects: Collaboration Menu

The Collaboration menu enables you to view the related discussions and subscriptions.

Lab Exercises

Exercise 1: Examining Documents

Objectives

After successfully completing this exercise, you will know how to:

- View the details, content, relationships, and histories of documents.

Scenario



You again take the role of John Evans as he explores the Golf Cart Owner's Manual that he previously searched for.

Initial Conditions



To successfully complete this exercise, you must establish the following initial conditions:


- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the Folders page of the Library tab.

Task 1. Access a document's primary content.

1. Select the **Product** major tab to view the products information.
2. In the Folders window, select the **Documentation** folder to view the folder contents.
3. Click the Microsoft Word icon  left of the STD Golf Cart Owner's Manual document to open the primary content file.
4. In the Choose File Operation dialog box, click the **OK** button to open the content in Microsoft Word.
5. Click the **Windows Close** button  to close the Microsoft Word application.

Task 2. View a document's details, history, and relationships.

1. Click the **View information** icon  next to the STD Golf Cart Owner's Manual document to open the details page.
2. Click the **Actions** drop-down menu in the top-left corner of the details page to view the available selections.
3. Review the list of actions. Click anywhere on the page to close the Actions drop-down menu.
4. In the Iteration History table at the bottom, select the **A.3** check box.
5. In the Iteration History table, select the **A.4** check box.
6. Click the **Compare information** icon  just below the Iteration History label.
7. In the Comparison Options dialog box, select the **Select All** check box.
8. Click the **OK** button to generate the comparison report between the two iterations.
9. Review the Comparison Report. Click the **Close** button to close the Comparison Report window.
10. Click the **Structure** link just above the Iteration History table to view the document structure.
11. Click the **General** drop-down menu to view all menu options.
12. Select **Attributes and Content** to view the associated attachments, also known as the secondary content.
13. In the Attachments table, click the JPG icon next to the std golf cart cover image.jpg file name to open the attachment.
14. In the Choose File Operation window, click the **OK** button to open the file.

15. The std golf cart cover image opens. Click the Windows Close button  to close the Microsoft Photo Editor.
16. Click the **Related Objects** drop-down menu to view all options.
17. Select **Documents** to view the associated reference documents.
18. Click the **Related Objects** drop-down menu again to view all options.
19. Select **Parts** to view the associated parts.
20. Click the **Related Objects** drop-down menu again to view all options.
21. Select **Baselines** to view the associated document baseline.
22. Click the **History** drop-down menu to view all options.
23. Select **Maturity** to view the life cycle history of the document.
24. Select the **Folders** minor tab to return to the folder contents.

This completes the exercise.

For Educational Use Only

Exercise 2: Examining Product Structure

Objectives

After successfully completing this exercise, you will know how to:

- View the details, content, relationships, and histories of end items and parts.

Scenario



In this exercise, you take the role of John Evans as he explores the Standard Golf Cart product structure, its end items, and its parts.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the Folders page of the Product tab.

Task 1. View the details, relationships, and histories of end items and parts.

1. In the Folders table in the left pane, select the **Standard Golf Cart** root-level folder to view the contents.
2. In the Folder Contents table, click the **View information** icon  next to the STD_Golf_Cart end item to view the object details.
3. Click the **Actions** drop-down menu in the top-left corner of the details page to view the available selections.
4. Review the selections. Click anywhere on the page to close the Actions drop-down menu.
5. In the Product Structure table, select the **Select all rows** check box to select all objects.
6. In the Product Structure toolbar, click the **Expand All** link to expand all the nodes in the product structure.
7. In the Product Structure table, select the **Select all rows** check box again to select all objects.
8. In the Product Structure toolbar, click the **Show Documents** link to display all the related documents for each part or end item.
9. In the Product Structure table, select the **Select all rows** check box to select all objects.
10. In the Product Structure toolbar, click the **Hide Documents** link to hide all the related documents from the product structure.
11. Click the **Related Reports** drop-down menu in the upper-right corner of the Product Structure table to view all available BOM reports.
12. Select **Single-Level Consolidated BOM** to generate a single-level BOM report.
13. Click the **Windows Close** button  to close the BOM report window.
14. Click the **General** drop-down menu to view all menu options.
15. Select **Attributes** to view the expanded list of end item attributes.
16. Click the **Related Objects** drop-down menu to view all menu options.
17. Select **CAD Documents** to view the CAD document related to the golf cart end item.
18. Click the **Related Objects** drop-down menu again to view all menu options.
19. Select **Documents** to view the document related to the Golf Cart end item.
20. Click the **History** drop-down menu to view all menu options.
21. Select **Iteration** to view the iteration history of the golf cart end item.
22. Click the **Structure** link to return to the golf cart end item structure.

23. Click the **View information** icon ⓘ for the leg_std.asm part to open the details page.
24. Click the **General** drop-down menu to view all menu options.
25. Select **Where Used** to view the parent part.
26. Select the **Folders** minor tab to return to the folder contents.

This completes the exercise.

For Educational Use Only

Exercise 3: Examining CAD Document

Objectives

After successfully completing this exercise, you will know how to:

- View the details, content, relationships, and histories of CAD documents.

Scenario








In this exercise, you take the role of John Evans as he explores the Standard Golf Cart product and its CAD documents.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the Folders page of the Product tab.

Task 1. Access CAD document's details page.

1. In the Folders table in the left pane, select the **CAD Models** folder to view the folder contents.
2. Click the lower part of the Folder Contents table scroll bar to scroll down and view the golf cart assembly CAD document.
3. Click the **View information** icon  next to the golf_cart_std.asm CAD document to view the details.
4. Click the **Actions** drop-down menu in the top-left corner of the details page to view the available selections.
5. Click anywhere on the page to close the Actions drop-down menu.
6. Click the **Structure** link to view the CAD document structure.
7. In the Model Tree table, select the **Select all rows** check box to select all objects.
8. In the Model Structure Report toolbar, click the **Expand All** icon  to expand all CAD documents in the Model Tree.
9. In the Model Tree Table, select the **Select all rows** check box to select all objects.
10. In the Product Structure Report toolbar, click the **Show Parts** icon  to display all the related parts and end items in the structure.
11. In the Product Structure Report toolbar, click the **Single Level Report** icon  to generate the CAD document parts list.
12. Click the **Windows Close** button  to close the CAD Document Parts List.
13. In the Product Structure Report toolbar, click the **Multi Level Report** icon  to generate the CAD document indented structure report.
14. Click the **Windows Close** button  to close the CAD Document Indented Structure report.
15. Click the **General** drop-down menu to view all options.
16. Select **Attributes and Content** to view the CAD document content and attributes.
17. Click the **Related Objects** drop-down menu to view all options.
18. Select **Parts** to view the part associated to the CAD document.
19. Click the **Related Objects** drop-down menu again to view all menu options.
20. Select **CAD Documents** to view other CAD documents related to the golf_cart_std.asm object.
21. Click the **History** drop-down menu to view all menu options.

22. Select **Iteration** to view the iteration history of the CAD document.
23. Select the **Folders** minor tab to return to the folder contents.

This completes the exercise.

For Educational Use Only

Exercise 4: Viewing Representations using ProductView

Objectives

After successfully completing this exercise, you will know how to:

- Install ProductView Lite.
- Use ProductView Lite to view, navigate within, interrogate, and annotate 3-D representations stored within parts and CAD documents in PDMLink.

Scenario


In this exercise, you take the role of John Evans. John performed a field test on the golf cart and identified a problem with it. He has already submitted a problem report and is considering annotating the model with his suggestion to fix the problem.

Initial Conditions


To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the Folders page of the Product tab.

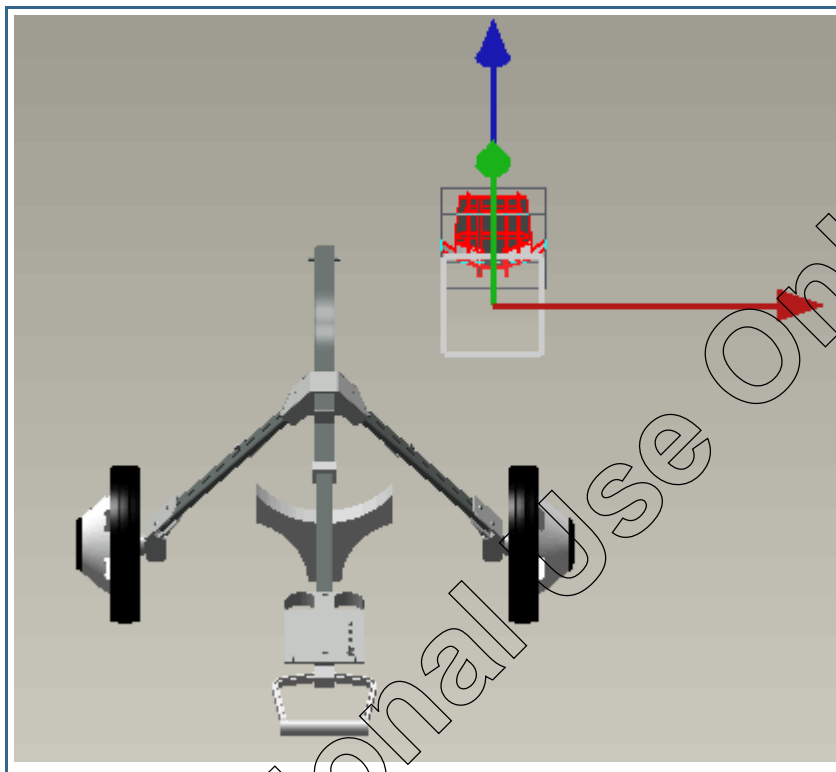
Task 1. Install ProductView Lite.

1. Click the **Products** drop-down menu in the top-left corner to access all products.
2. Select **EZ Fold Golf Cart** to open the product.
3. Click the **View information** icon  next to the **EZ_Fold_Golf_Cart** end item to view the details page.
4. Below the golf cart end item thumbnail, click the **Install ProductView Lite** link to view the installation options.
5. Accept the default installation options and click the **Install** button to install ProductView

Task 2. Open and manipulate a representation.

1. Once the installation is complete, click the golf cart assembly thumbnail to open the representation in ProductView Lite.
2. Click the **Windows Maximize** button  to maximize the ProductView window.
3. On the Files tab, double-click the **Model** entry for the golf cart assembly to open the viewable in the viewing area.
4. Rotate the viewable by right-clicking and dragging from upper-right of the golf cart assembly to the bottom-left of the viewing area.
5. Click the **Orientation** drop-down menu from the Navigation Command Group.
6. Select **Top** from the Orientation drop-down menu.
7. Click the **Render Mode** drop-down menu from the Display Command Group.
8. Select **Hidden Line Removal** from the Render Mode drop-down menu.
9. Click the **Render Mode** drop-down menu from the Display Command Group.
10. Select **Wireframe** from the Render Mode drop-down menu.
11. Click the **Render Mode** drop-down menu from the Display Command Group.
12. Select **Mesh** from the Render Mode drop-down menu.
13. Click the **Render Mode** drop-down menu from the Display Command Group.
14. Select **Shaded** from the Render Mode drop-down menu.

15. Click **Translation Mode** from the Parts Command Group.
16. Select bag holder on the top to activate the part for translation.
17. Click the X axis arrow (red) and drag the bag holderrightward, dropping it on the right side.

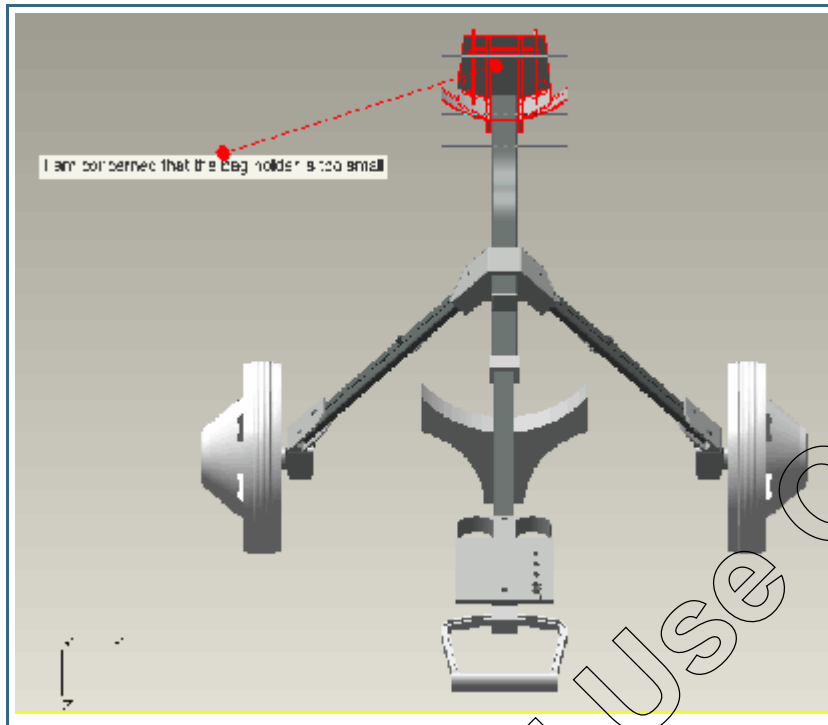


Translating the handle part

18. Click **Restore Location** from the Parts Command Group.
19. Click **Zoom Selected** from the Navigation Command Group.
20. Click **Isolate Selected** from the Parts Command Group.
21. Click **Unhide All** from the Parts Command Group.
22. Click **Hide Selected** from the Parts Command Group.
23. Click **Unhide All** from the Parts Command Group.
24. Click **Zoom All** from the Navigation Command Group.

Task 3. Annotate a representation.




1. In the Ribbon area, select the **Markup** tab.
2. Click **Note** from the Annotations Command Group.
3. Click in the open space to the left of the bag holder to place the note.
4. In the Note window, type **I am concerned that the bag holder is too small** in the Text field.
5. Click the **OK** button to complete the note.
6. Click **Leader Line** from the Annotations Command Group.
7. Click on the top side of the note box to start the leader line.
8. Click on the bag holder to terminate the leader line.



Annotating the bag holder

9. Click the **Save** drop-down menu from the General Command Group.
10. Select **Save Annotation Set** from the Save drop-down menu.
11. On the New Annotation Set window, type **Bag holder concern** in the Name field.
12. Click the **OK** button to save the annotation.

Task 4. View an annotated representation.

1. On the Files tab, double-click the **Model** entry for the golf cart assembly to restore the default viewable in the viewing area.
2. Select the **Annotation Sets** tab in the panel area.
3. Double-click the **Bag holder concern** entry to open the annotation in the viewing area.
4. Click the **ProductView Lite** icon  in the upper-left corner to open the top-level drop-down menu.
5. Select **Exit** from the top-level drop-down menu to close ProductView Lite.
6. Click the **Display List of Representations** button  below the golf cart thumbnail to open the Representations window.
7. Observe the default representation. Click the **Display list of annotations and groups** icon  for the default representation.
8. Observe the Bag holder concern annotation. Click the **Close** button to close the Annotations and Groups window.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Explain the benefits of Visualization.
- View the details and content of Windchill objects.
- Identify representation viewing tools.
- View representations with ProductView.
- View Windchill product structure.
- View the relationships and histories of Windchill objects.

For Educational Use Only

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. From a document object's details page, you can...
 - A - download and view the content file in the native application, such as Microsoft Word.
 - B - view the content file in ProductView.
 - C - view the object's relationships.
 - D - all of the above.
2. True or False? To use ProductView Lite or ProductView Standard for the first time, you must install them.
 - A - True
 - B - False
3. Which menu on the object's details page provides information about the object's maturity?
 - A - History
 - B - Related Objects
 - C - Collaboration
 - D - General

For Educational Use Only

Initiating New Designs

Introduction

In this module, you focus on Windchill PDMLink 9.0's CAD Management capabilities. Windchill PDMLink can work with a variety of CAD applications, enabling you to connect to PDMLink through the workspace.

In this module, you explore how to use Pro/ENGINEER Wildfire to connect to PDMLink, and how to create and manage the workspaces that will enable you to share CAD data through Windchill PDMLink.

Objectives

After completing this module, you will be able to:

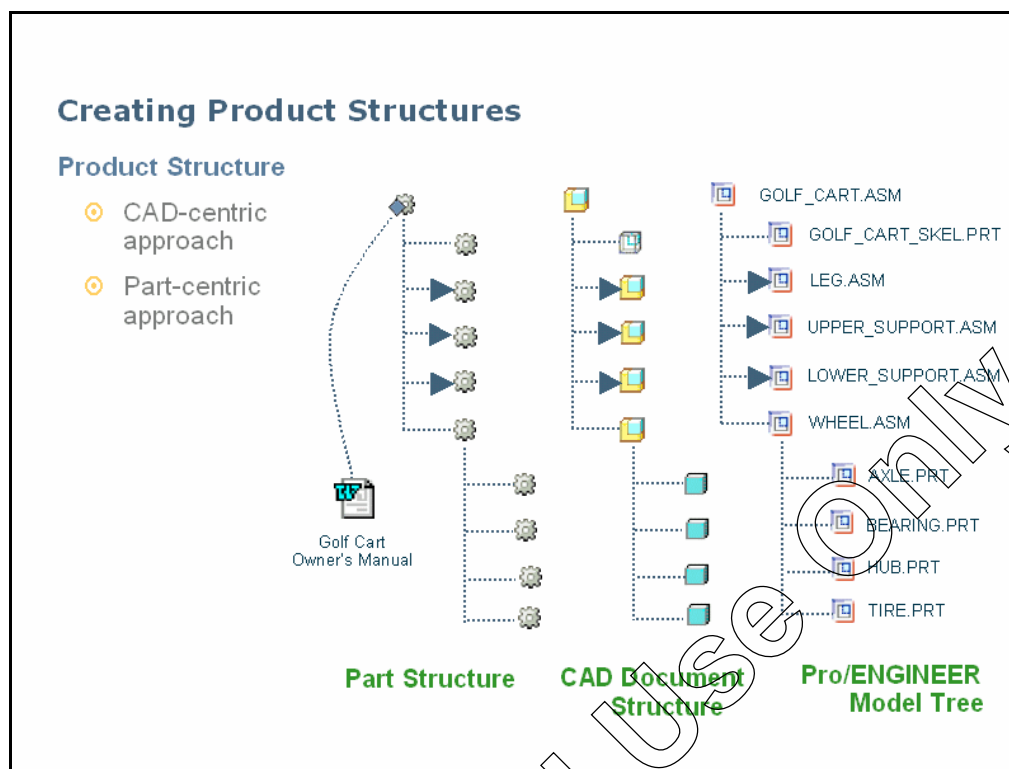
- Identify different approaches for creating product structures in PDMLink.
- Explain the purpose of the Windchill workspace.
- Register a PDMLink server.
- Create a workspace.
- Manage workspaces.
- Manage workspace preferences.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

For Educational Use Only



Creating Product Structures

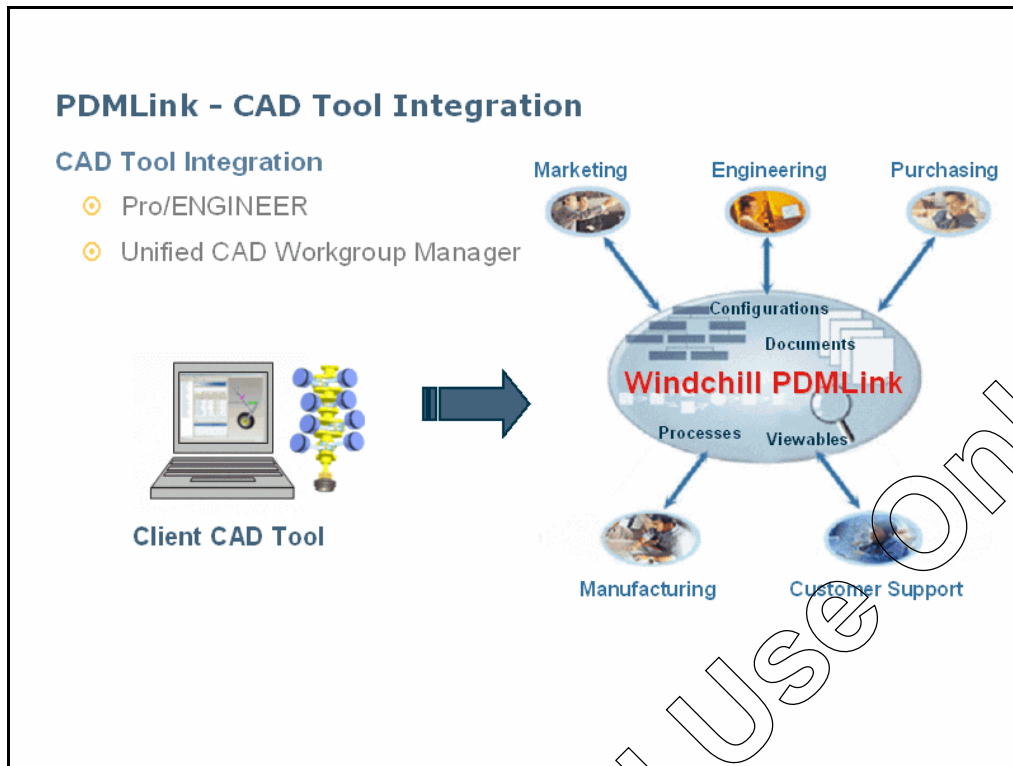
There are two approaches for creating product structures in PDM: the CAD-centric approach and the Part-centric approach.

In the CAD-centric approach, you first create CAD models using a CAD tool, such as Pro/ENGINEER. PDM can automatically build product structures when the existing CAD data is uploaded to the product's workspace in PDM. PDM can support many different CAD platforms, including Pro/ENGINEER Wildfire, Catia, AutoCAD, and more.

In the Part-centric approach, the product structure is designed before any CAD design work begins. The parts are created first; then, through workflows, the tasks of designing the CAD models are distributed to teams of engineers.



This training course is built around the CAD-centric approach, as it is widely used by various companies during their design process.

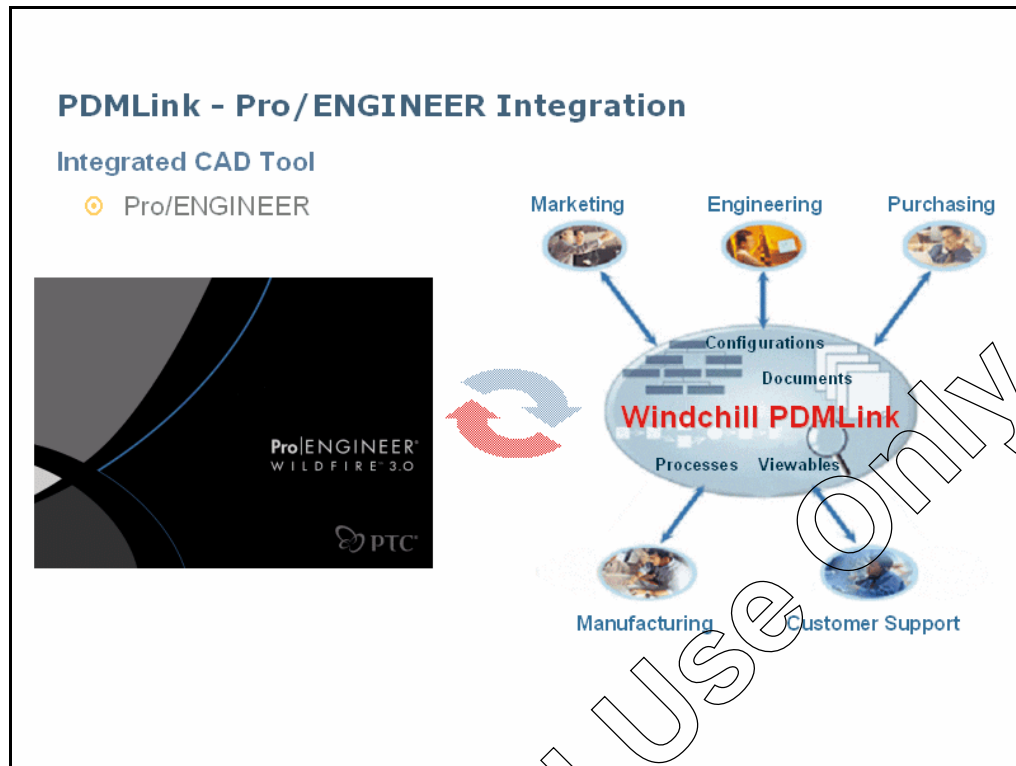


PDMLink — CAD Tool Integration

Windchill PDMLink is a PDM application designed specifically to address product information control and product development processes. Part of its capability is devoted to managing CAD data, which it does through CAD documents.

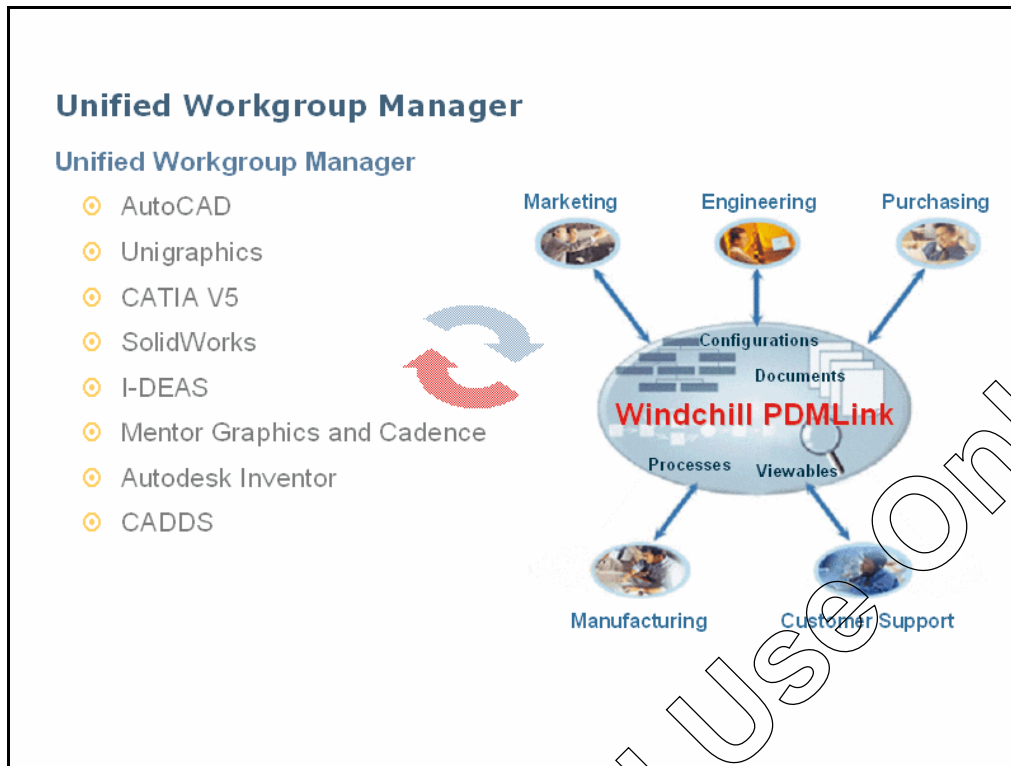
In order to manage CAD data you must be able to upload this CAD data to Windchill PDMLink. And, in order to do so as effectively as possible, you should be able to connect to it through any of the most used CAD applications.

To upload CAD data to Windchill PDMLink, you can rely on two tools: Pro/ENGINEER and Unified Workgroup Manager. Pro/ENGINEER is used to manage Pro/ENGINEER data type while Unified Workgroup Manager supports CAD data created by other third-party tools, such as AutoCAD.



PDMLink — Pro/ENGINEER Integration

Access to PDMLink is embedded into the Pro/ENGINEER user interface (UI) in many ways, so PDMLink operations can always be accessed from the most convenient point in the Pro/ENGINEER UI. Many of the most common Pro/ENGINEER PDM activities (such as Open, Check In, and Check Out) can be performed directly from the Pro/ENGINEER menus. However, Windchill PDMLink must be registered with Pro/ENGINEER to perform these tasks.



Unified Workgroup Manager

Pro/ENGINEER Wildfire is not the only tool that you can use to connect to a PDMLink server. You can also connect by using any of these CAD tools by installing an add-on module called the Unified Workgroup Manager. The Unified Workgroup Manager is available on the Utilities page of the Windchill PDMLink Home major tab.

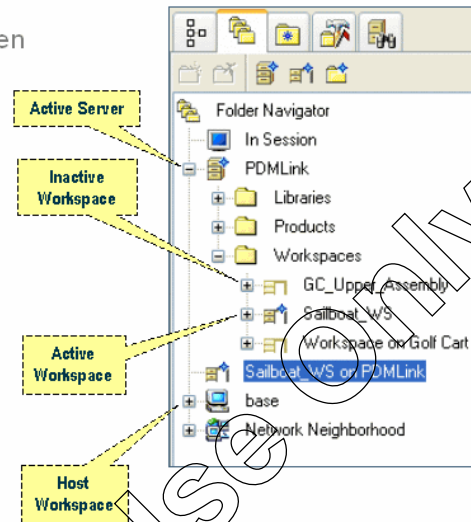


Consult Windchill documentation for the most up-to-date information on the supported CAD tools.

Introduction to the Workspace

The Workspace

- Facilitates communication between
 - PDMLink Server
 - Pro/ENGINEER Wildfire
- Exists as a local cache
- Presented as a table
- Can have multiple workspaces tied to different products
- Offline workspace access for Pro/ENGINEER Wildfire



Introduction to the Workspace

PDMLink provides an interface called the workspace that you can access from within a client CAD application, such as Pro/ENGINEER Wildfire.

The workspace facilitates communication between the PDMLink server and a Pro/ENGINEER Wildfire session. You can use the workspace to manage parts and CAD documents in the PDMLink server, directly from within Pro/ENGINEER Wildfire. It is a private area where you can track and change multiple objects and perform basic PDM operations. You can also use it to check out design information from the PDMLink server and check in modified designs.

If you check out, or download items to your workspace, they are also copied from the PDMLink server and stored in a local cache on your hard disk. The workspace enables you to access, modify, and manage the CAD files from within Pro/ENGINEER.

The information in the workspace is presented in the form of a table where you can apply various filters to view the desired data.

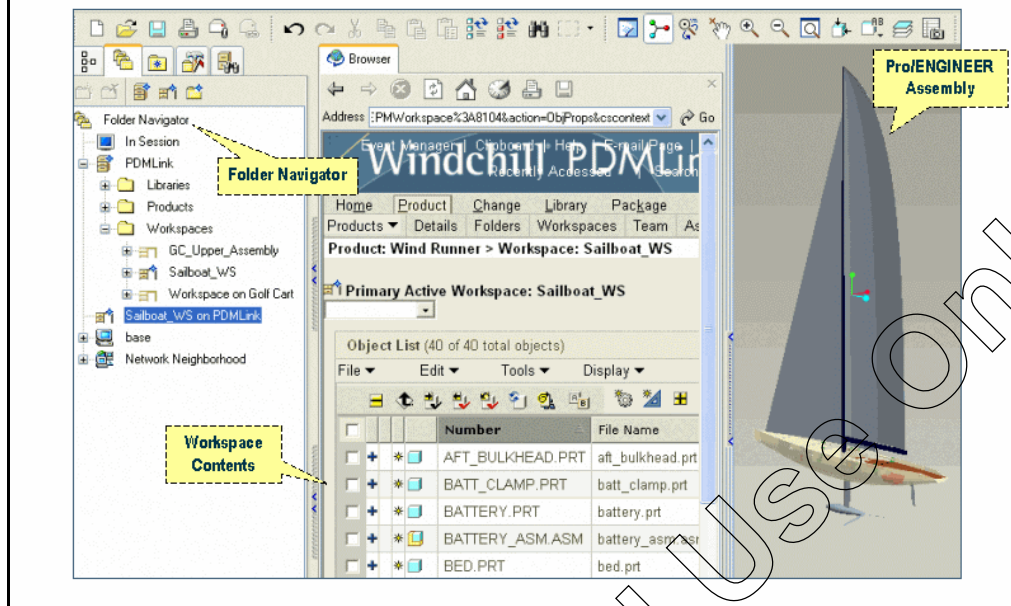
The Windchill system can create multiple workspaces. This ability is useful if you are working on several projects at one time because it enables you to create a workspace for each of your projects and segregate your design data by project affiliation.

In addition, if you connect to the workspace using Pro/ENGINEER Wildfire, you are able to work with it offline. You could use this capability to take your laptop home with your workspace, without needing to connect to Windchill PDMLink. Later, this module explores the workspace in more detail.



Although your workspace is a private area, an administrator may (as company needs require) access objects in your workspace (for example to undo the checkout on a checked-out object).

Viewing Workspace Contents



Viewing Workspace Contents

This screenshot shows a workspace on a PDMLink server being viewed in Pro/ENGINEER Wildfire. Notice that the model on that server is also being viewed.

The workspace is presented in a table format. Each row of the table represents an object that you have either downloaded, checked out, or uploaded while each column represents the object's attributes. Each column can be sorted or filtered independently which enables you to organize objects in your workspace by attributes.

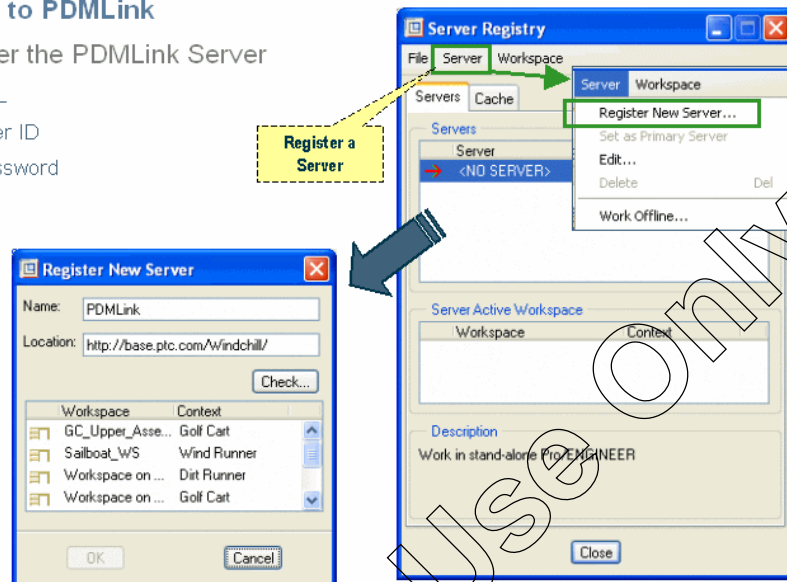
With workspaces, you are able to check out and modify both the parts and their corresponding CAD documents. You are also able to automatically generate the part product structure from the CAD documents. You can do this, and manage the models, using the PDMLink workspace from within Wildfire. If you are using a different CAD tool, you can similarly modify parts and CAD documents using the Unified Workgroup Manager.

Registering PDMLink with Pro/ENGINEER Wildfire

Connecting to PDMLink

Register the PDMLink Server

- URL
- User ID
- Password



Registering PDMLink with Pro/ENGINEER Wildfire

Regardless of whether you use the Unified Workgroup Manager or Pro/ENGINEER Wildfire, the PDMLink server is the vault where all of your product data is stored and managed. To access it from within Pro/ENGINEER Wildfire, you must first register your PDMLink server with Pro/ENGINEER. To register the PDMLink server with Pro/ENGINEER, you open the Server Registry, which can be located on the Tools menu.

You will need to know the URL of the server. You will also need your username and password.

Once you have registered the server with Pro/ENGINEER Wildfire, you can use one of the pre-generated workspaces or create a new workspace within the server.

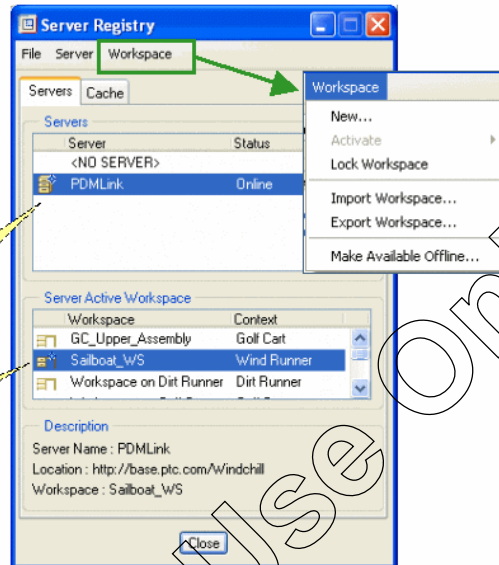
Managing Workspaces: Server Registry

Managing Workspaces

- Create a new workspace
- Change the active workspace
- Change the active server
- Lock/unlock a workspace
- Import/export a workspace

Primary Server

Active Workspace



Managing Workspaces: Server Registry

Using the Server Registry, you can create a new workspace and set a different workspace as the active workspace. The active workspace is given the blue star to indicate it is active. Note, that if you activate a different workspace on the same server, Pro/ENGINEER erases objects in session before connecting to the new workspace. Also, you can change servers by using the server registry dialog box you have already used. Like the workspace, the active server is given the blue star to indicate that it is active. If you activate a different workspace on a different server, Pro/ENGINEER does not automatically erase objects in session. You can save in-session objects to the new workspace.

You can also lock a workspace. The primary purpose of locking a workspace is to prevent unintended changes to the workspace cache when it has been exported, so when the portable workspace is imported back, there will be a minimum of conflicts. Additionally, you can lock or unlock objects within the workspace.

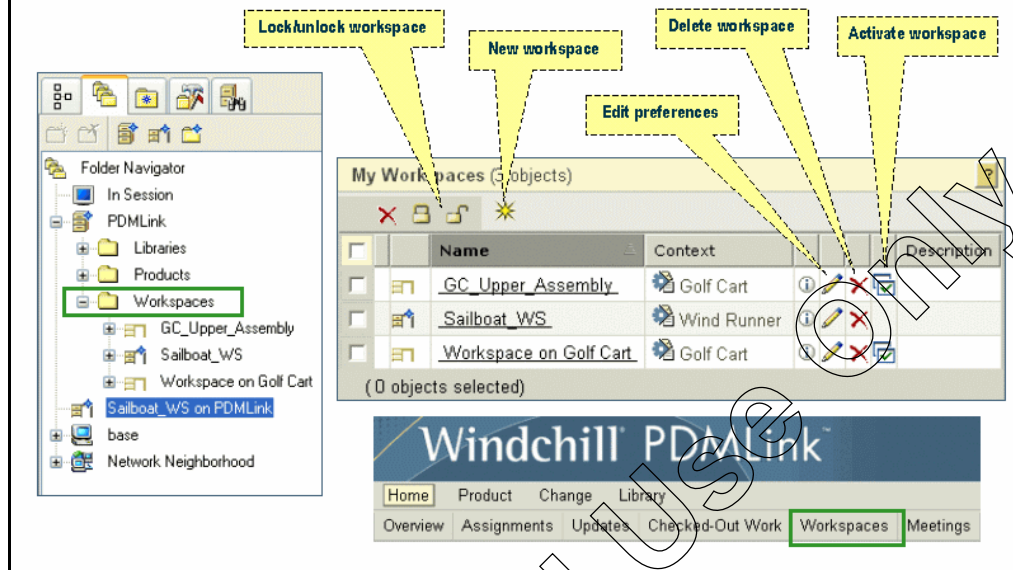


The lock behavior only applies to the workspace cache on the client, not the server-side workspace. When viewing workspaces from a stand alone browser, there is no concept of locked or unlocked workspaces.

You can use your active workspace to load CAD objects into and out of your Windchill database without explicitly retrieving them into Pro/ENGINEER. In addition, the workspace import and export functionality enables you to bring attached files that cannot be retrieved into the CAD application. This functionality is supported only for Pro/ENGINEER CAD documents; which can include file types that are supported by Pro/ENGINEER but cannot be opened directly, such as material files or texture files, which become CAD documents upon import.

Managing Workspaces: Folder Navigator

Managing Workspaces



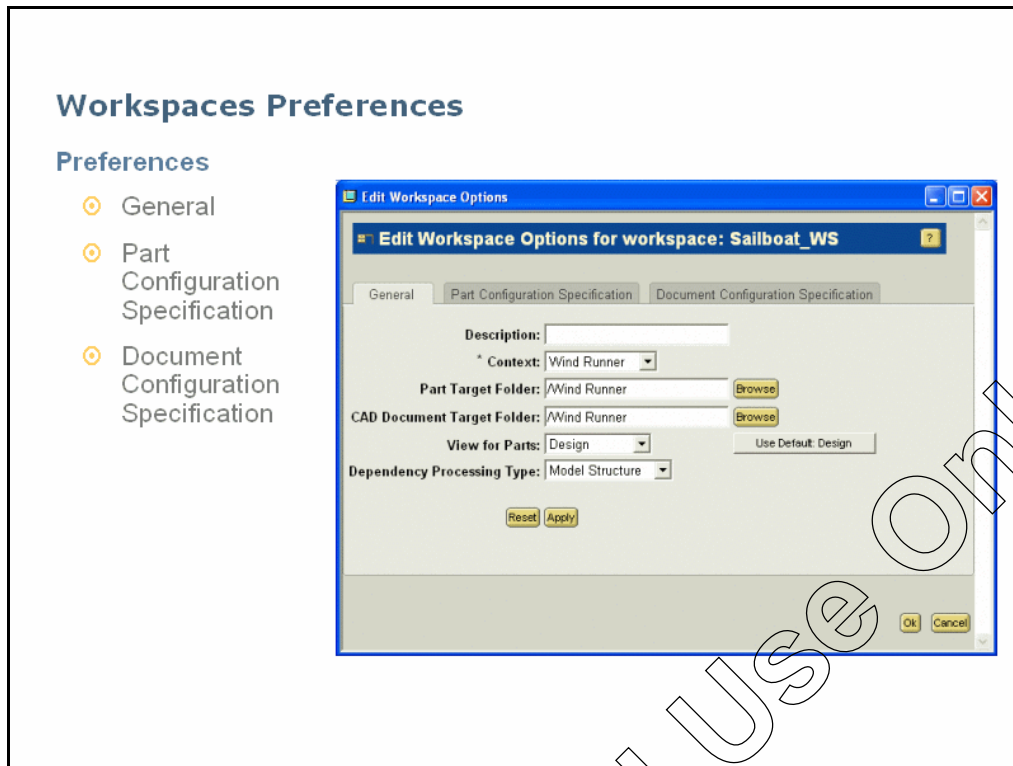
Managing Workspaces: Folder Navigator

You are also able to manage your workspaces on the workspaces page of the Home major tab, and within the Pro/ENGINEER Folder Navigator.

If you have multiple workspaces configured, you can view all of them using the workspaces page on the Home major tab. You can also switch between them on that page, using Pro/ENGINEER Wildfire's Folder Navigator. Some of the operations are common and can be performed either from the Folder Navigator or from the Server Registry menu.

While within the workspace, you can lock or unlock individual objects. Locking a workspace object gives it a read-only status. It may be desirable to make an object read-only for any of the following reasons:

- To reduce the number of times that the Conflicts dialog box is presented for objects that are not intended to be modified.
- To give the user better visibility into changes made implicitly by the CAD application (for example, unplanned or unexpected changes required during regeneration).
- To prevent the object from being saved.



Workspace Preferences

Workspaces can be configured for your convenience. Typical reasons to set workspace preferences are to provide a common attribute sets (such as life cycle state), identify storage folders, and specify configuration options for all objects managed in a workspace.

The general tab of the Edit Workspace Option window enables you to customize workspace options, such as the target folder location for the uploaded objects, view for the Windchill parts, or the dependency processing mechanism. Other tabs enable you to retrieve the objects based on their configuration specification, such as standard, baseline, or effectivity.

Lab Exercises

Exercise 1: Creating Workspaces

Objectives


After successfully completing this exercise, you will know how to:

- Register a PDMLink server with Pro/ENGINEER Wildfire.
- Create a workspace on your server.



Scenario

In this exercise, you take the role of John Evans. He is an engineer at PTC Sports that is already familiar with PDMLink, and Pro/ENGINEER Wildfire. John has just received a new computer with Pro/ENGINEER Wildfire and wants to configure it to work with PDMLink. To do this, he will register the PDMLink Server with Pro/ENGINEER. John will be working on the Super Lite Golf Cart product and needs to create a workspace for himself on that server.

Task 1. Register the PDMLink Server with Pro/ENGINEER Wildfire.

1. Double-click the **Pro/ENGINEER** icon on the desktop to launch Pro/ENGINEER.
2. Click the **Windows Maximize** button  to maximize the Pro/ENGINEER window.
3. Click **Tools** on the Pro/ENGINEER's main menu to access the menu options.
4. Select **Server Registry...** to view the list of registered servers.
5. In the Server Registry dialog box, click the **Server** menu to view menu options.
6. Select **Register New Server...** to register the PDMLink server with Pro/ENGINEER.
7. Type **PTC Sports** in the Name text field of the Register New Server dialog box.
8. Type **http://ptc-training.ptc.com/Windchill/** in the Location text field.
9. Click the **Check...** button to verify the connection between Pro/ENGINEER and PDMLink.
10. A login dialog box appears. Type **jevans** in the User Name text field.
11. Type **ptc** in the Password text field.
12. Click **OK** to log on.
13. In the Register New Server dialog box, select the **SL Golf Cart** workspace.
14. Click the **OK** button to save the information.
15. In the Server Registry dialog box, select **PTC Sports**.
16. In the Server Registry dialog box, click the **Server** menu to access the menu options.
17. Select **Set as Primary Server** to set the PTC Sports as the primary server.
18. Click **Close** to close the Server Registry dialog box.

Task 2. Create and activate a workspace.

1. In the Folder Navigator window (left pane), click the **Expand** icon  to the left of the PTC Sports node to view the subcomponents.
2. Select the **Workspaces** node to view the list of available workspaces.
3. In the My Workspaces table, click the **New Workspace** icon  to create a new workspace.
4. Type **SL Lower Support** in the Name text field.
5. Type **Super Lite Lower Support Assembly** in the Description field.
6. Click the **Context** drop-down menu.

7. Select **Super Lite Golf Cart** to associate the new workspace with the Super Lite Golf Cart product.
8. Ensure that the Activate Workspace check box is selected. Click the **OK** button to create the workspace.

This completes the exercise.

For Educational Use Only

Exercise 2: Managing Workspaces

Objectives

After successfully completing this exercise, you will know how to:

- Manage your workspaces.
- Set workspace preferences.

Scenario

In this exercise, you take the role of John Evans. John is interested in viewing all of his workspaces, and viewing the options he has for setting preferences.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Pro/ENGINEER session as John Evans (jevans/ptc).
- Activate the SL Lower Support Assembly workspace.

Task 1. Manage workspaces and set preferences.

1. In the embedded Web browser, select the **Home** major tab to view all personal workspaces.
2. Select the **Product** major tab to view the product information.
3. Click the **Workspaces** minor tab to view only those workspaces that are associated to the Super Lite Golf Cart product.
4. In the Folder Navigator window, select the **SL Lower Support on PTC Sports** workspace to return the workspace.
5. In the right pane, click the **Primary Active Workspace: SL Lower Support** drop-down menu to view the available selections.
6. Select **Edit Preferences** to open the Edit Workspace Options dialog box.
7. Select the **Browse** button next to the Part Target Folder field.
8. In the Set Location dialog box, select **CAD Models** to set the location of all parts to the CAD Models folder.
9. In the Set Location dialog box, click the **OK** button to save the information.
10. Select the **Browse** button next to the CAD Document Target Folder field.
11. In the Set Location dialog box, select **CAD Models** to set the location of all CAD documents to the CAD Models folder.
12. In the Set Location dialog box, click the **OK** button to save the information.
13. In the Edit Workspace Options window, Click the **Ok** button to save the information and close the window.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Identify different approaches for creating product structures in PDMLink.
- Explain the purpose of the Windchill workspace.
- Register a PDMLink server.
- Create a workspace.
- Manage workspaces.
- Manage workspace preferences.

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. Which statement correctly defines a characteristic of a PDMLink workspace.
 - A - It is an interface that you can access only from within Pro/ENGINEER Wildfire.
 - B - It is a shared area where you can track and change multiple objects and perform basic PDM operations.
 - C - It is a private area where you can track and change multiple objects and perform basic PDM operations.
 - D - It can only be used to manage CAD documents.
2. All of the following options enable you to view all available workspaces EXCEPT...
 - A - the server registry menu in Pro/ENGINEER.
 - B - the Workspace Manager.
 - C - the Folder Navigator pane in Pro/ENGINEER.
 - D - the Workspace page on the Home major tab.
3. Adam has installed Pro/ENGINEER on a new computer. In order to connect to the Windchill PDMLink server using Pro/ENGINEER, he must first...
 - A - register the PDMLink server with Pro/ENGINEER.
 - B - create a new workspace.
 - C - activate a workspace
 - D - set a primary Windchill server.

For Educational Use Only

Sharing CAD Models

Introduction

Windchill PDMLink 9.0 provides the means to share and collaborate on product CAD data. In this module, you explore the tools and processes that enable you to upload and share CAD data throughout the organization.

Objectives

After successfully completing this module, you will be able to:

- Upload models to a workspace.
- Check in CAD documents to a context.
- Identify CAD document storage locations.
- Identify available actions in the workspace.
- Explore additional check in options.
- Use the Event Manager.
- Manage visualization representations.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

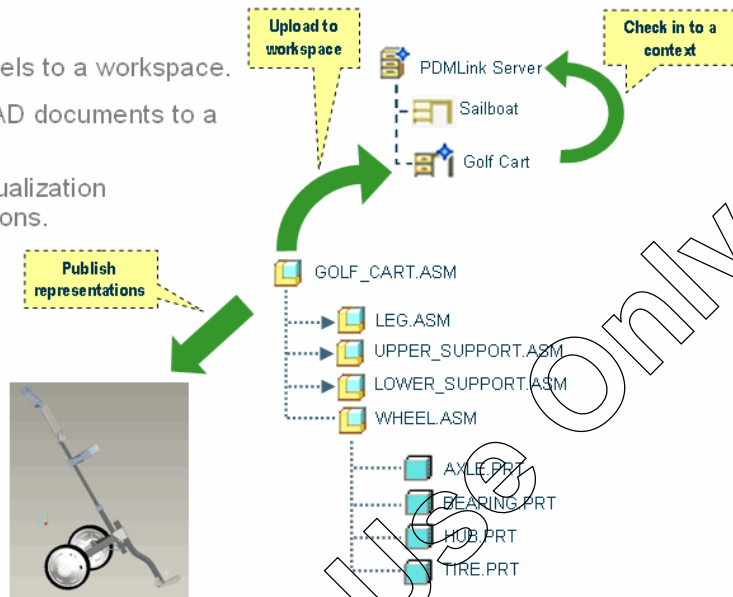
You may use the space below to take your own notes.

For Educational Use Only

Sharing CAD Models

Three Steps

- Upload models to a workspace.
- Check In CAD documents to a context.
- Manage visualization representations.

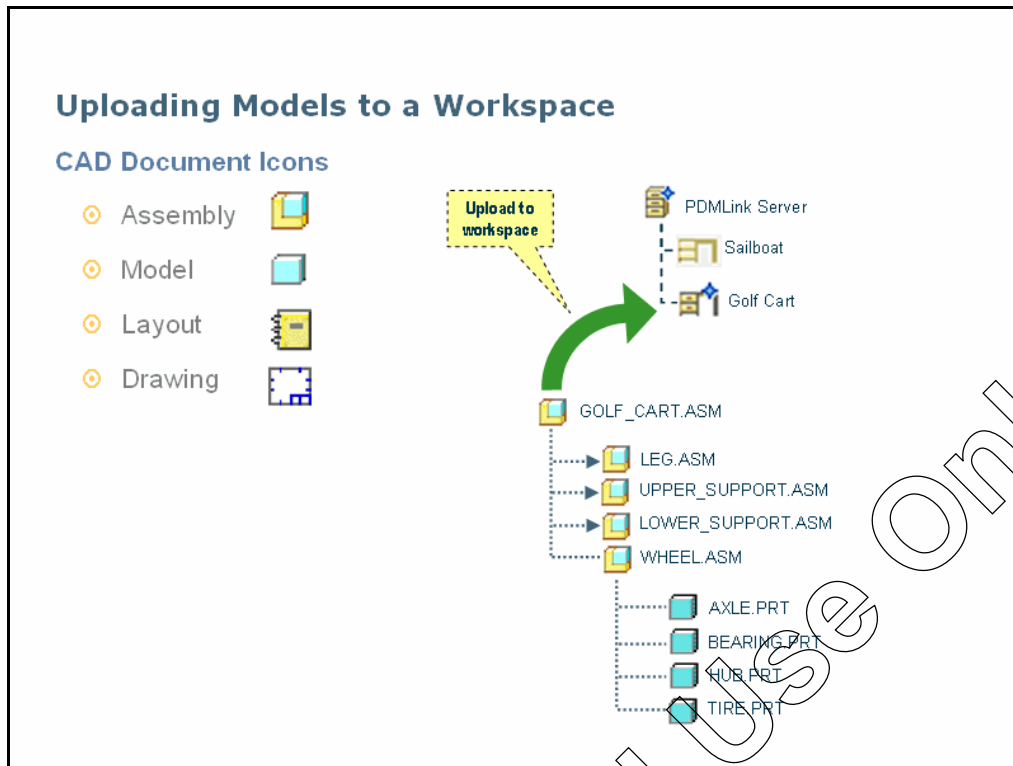


Sharing CAD Models

Sharing CAD data with others is a simple three step process.

First, you upload the CAD Models to your workspace, which will create CAD documents in a structure. Next, you check them in to share them. Finally, if needed, you can publish representations of them.

By the end of this module, you will be able share CAD models using these features.



Uploading Models to a Workspace

The first step in sharing models with others through PDMLink is to upload them.

Uploading models places them within the workspace on the PDMLink server, which if you recall, is a space reserved for only you. For each assembly model, layout, or drawing that you upload, PDMLink generates a CAD document. They are given icons specific to their content like documents.

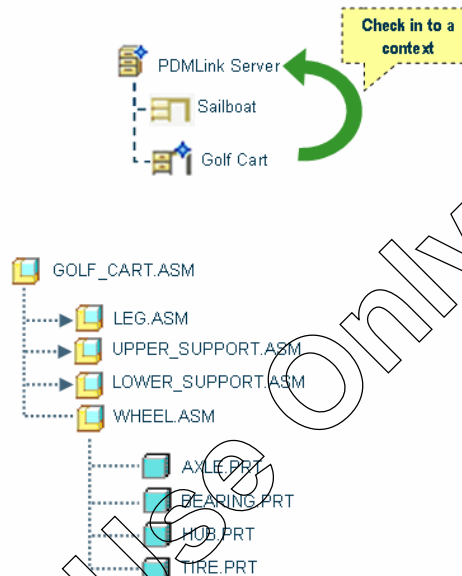
You can initiate the Upload process from within PDMLink, or from within Pro/ENGINEER Wildfire.

After you have uploaded the CAD data here, you still need to share the models with others.

Checking In CAD Documents

Check In

- ⦿ Adds new objects to the shared environment
- ⦿ Enables other users to:
 - Access the latest version
 - Check it out to their workspace



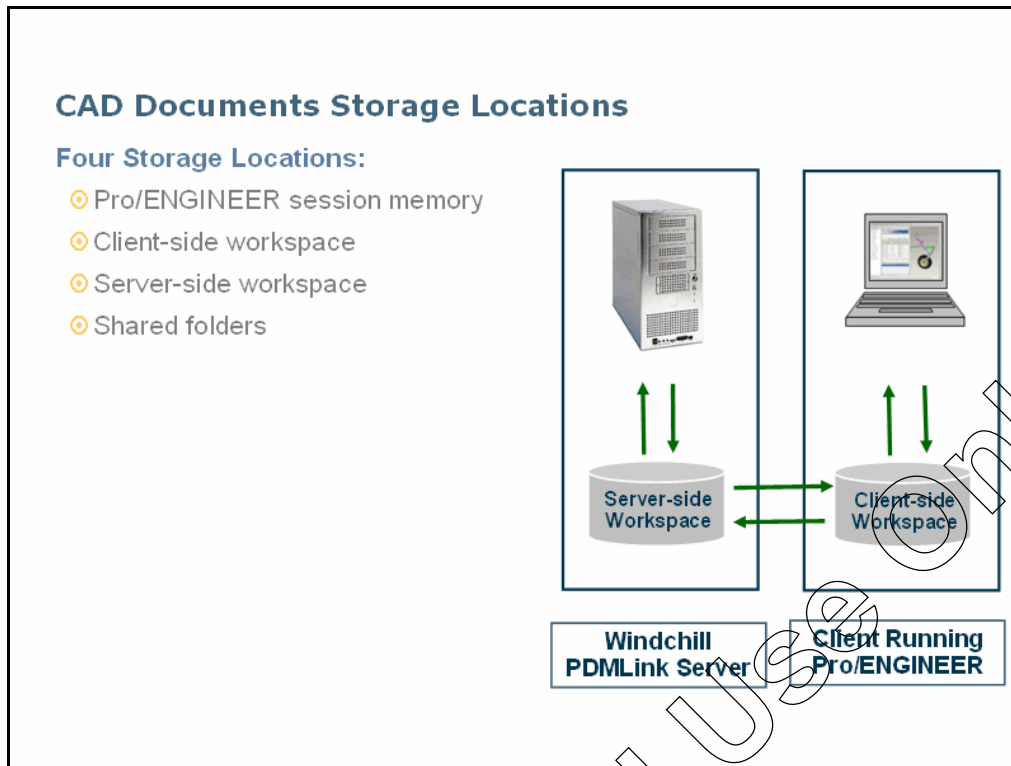
Checking In CAD Documents

Once you have finished working on objects in your workspace, you can share the design changes with other users. The check in operation makes your changes available to anyone that has permission to explore the appropriate products or libraries. Objects that have not been modified are not included in the check in process.

The check in process serves several purposes:

If you created a new object in your workspace on the server or imported an object into your workspace on the server, check in adds the object to the shared environment for the first time and makes it accessible to other users.

Check in also enables other users to access the latest version of the object and to check it out to their workspace on the PDMLink server.

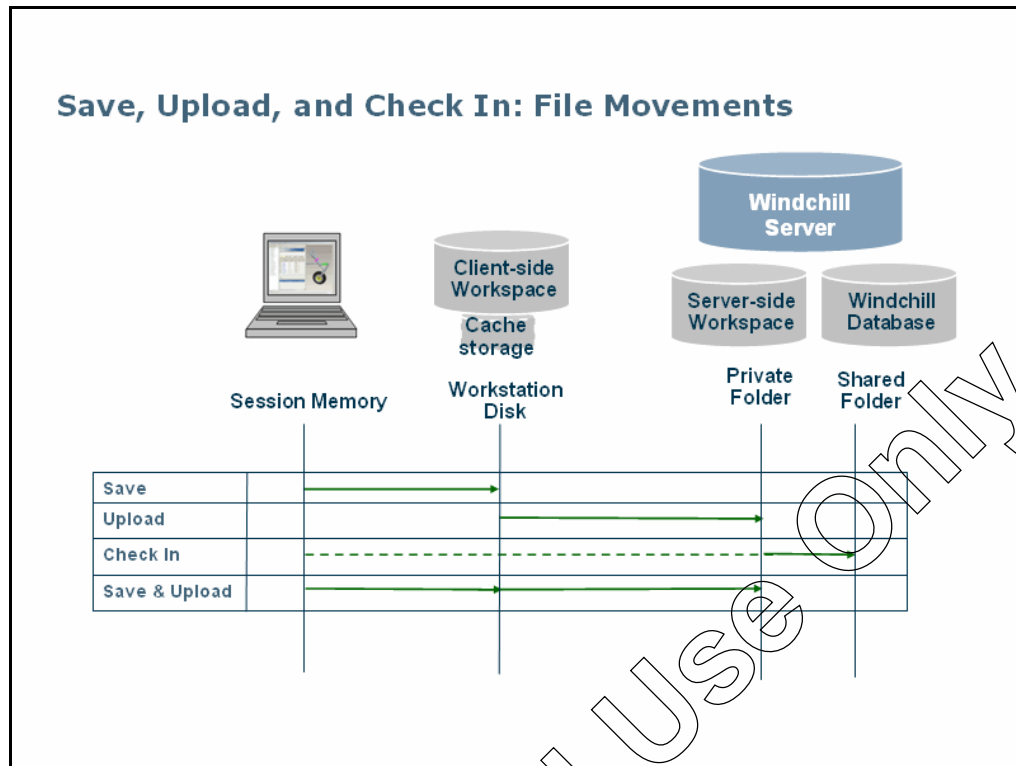


CAD Documents Storage Locations

The Pro/ENGINEER interaction with Windchill leverages four distinct storage locations:

- Pro/ENGINEER session memory
- Client-side workspace (also known as workspace cache)
- Server-side workspace (located in a private folder)
- Shared folders (also known as the commonspace)

Every time a user creates a new workspace, a new distinct storage location is created in the user's personal folder on the server (server-side workspace) and on the client (client-side workspace cache). Together, the server-side workspace and the client-side workspace cache make up the workspace.



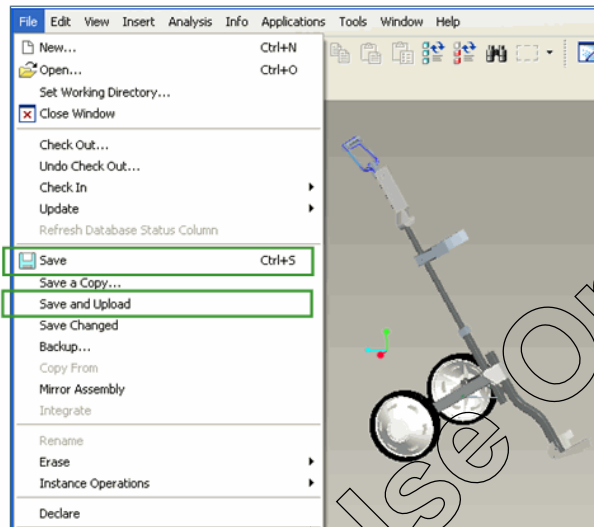
Save, Upload, and Check In: File Movements

This figure illustrates how the data moves through the system from a Pro/ENGINEER session to a Windchill shared folder. The solid lines show the main purpose of the different commands. For example, Check In moves data from a user's private folder to a shared folder. Dotted lines show where the Wildfire integration is optimized to enable multiple operations to happen with one end-user action.

Saving and Uploading CAD Models

Save Methods

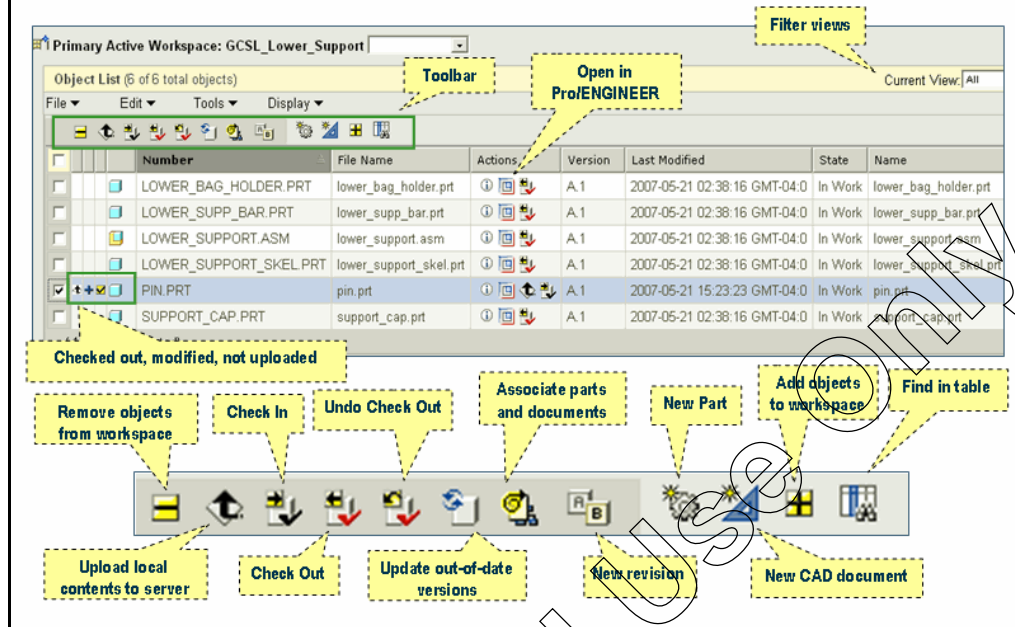
- Save
- Save and Upload



Saving and Uploading CAD Models

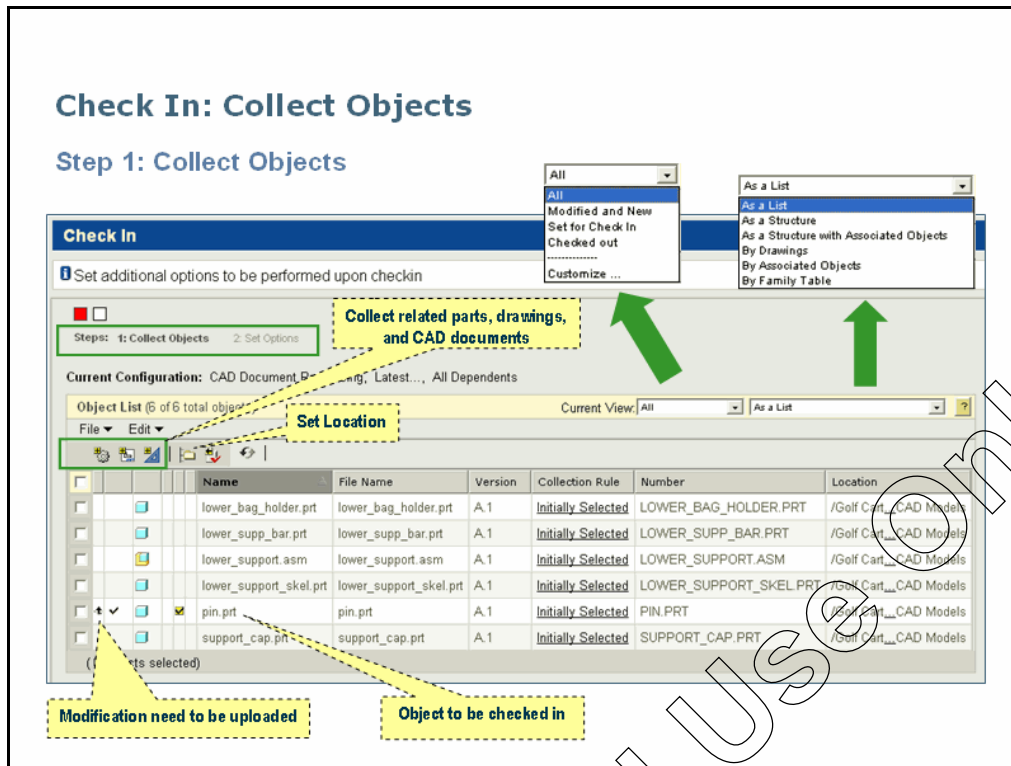
You can initiate the Upload process from within PDMLink, or from within Pro/ENGINEER Wildfire. You can use the Save command to save the session contents to the client-side workspace. You also can use the Save and Upload command to upload copies of the files you are editing in Pro/ENGINEER to your workspace on the PDMLink server without making your changes visible to other users.

Workspace: Available Actions



Workspace: Available Actions

The workspace is your primary tool to work with and share CAD data. Once the CAD models are stored in the workspace, you can use various actions, such as check out, check in, upload, and so on, to manipulate the CAD documents. This figure also shows a complete list of actions available on the workspace toolbar.

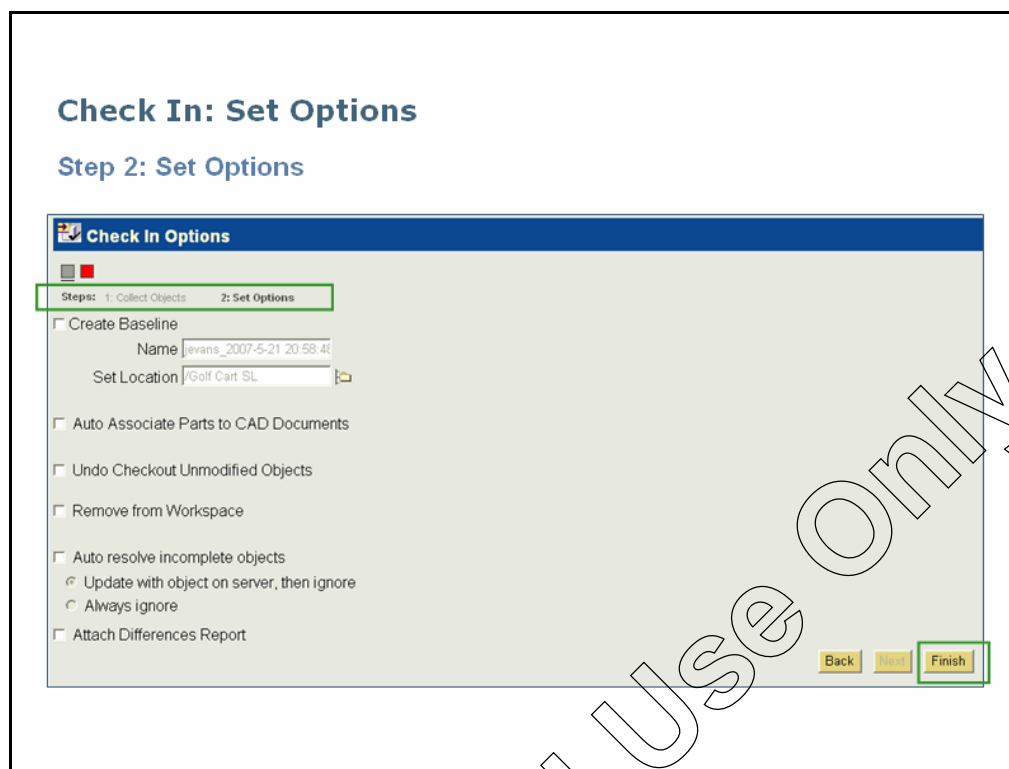


Check In: Collect Objects

When you initiate check in, the whole process is completed in two steps. In the first step, the Check In page appears and displays the initially selected object(s) and any other dependents collected by default in a table. The toolbar enables you to collect all other related objects, such as drawings and other CAD documents. You can also set the folder location for the CAD documents. However, the set location icon is only available for the new objects.

From the Current Views drop-down list at the top-right corner of the table, you can select the default view or click Customize to create a customized display for table objects and their attributes. You can also select a display for the table. By default, all objects are listed in the table as a list.

The Collect Objects page also indicates which objects in the workspace are modified and need to be uploaded. In addition, you can use the Current View menu and select to show only those objects which are set for check in.



Check In: Set Options

In Step 2 of the check in Wizard, you can set any of the following options:

- Selecting Create Baseline by default creates a baseline with a default name, number, and location. You can edit the name, number, and location path, or click the set location button to browse to a new storage location for the baseline.
- Selecting Auto Associate Parts to CAD Documents automatically creates (as necessary) and actively associates parts for the CAD documents that are not already associated to parts.
- You can undo the checkout of unmodified dependents of the objects selected for check in by selecting Undo Checkout Unmodified Objects.
- Selecting Remove from Workspace enables you to clear the checked-in objects from your workspace upon completion of the check in.
- If the objects selected for check in or objects added to the list based on dependencies include incomplete objects, an Auto resolve incomplete objects check box is also available. You can select how the auto-resolve functionality handles incomplete objects in one of the following two ways:
 - By using the default method, Update with object on server, then ignore, the system searches for an object on the server with the same file name. If the object is located, the incomplete object is updated by the found file, and is therefore available for check in. If no object is located to update the incomplete object, the system ignores the incomplete object (which is removed from the check in list).
 - The system also can be set to Always ignore an incomplete object.



Your site administrative settings may not enable the ignore option, but required dependents cannot be ignored.

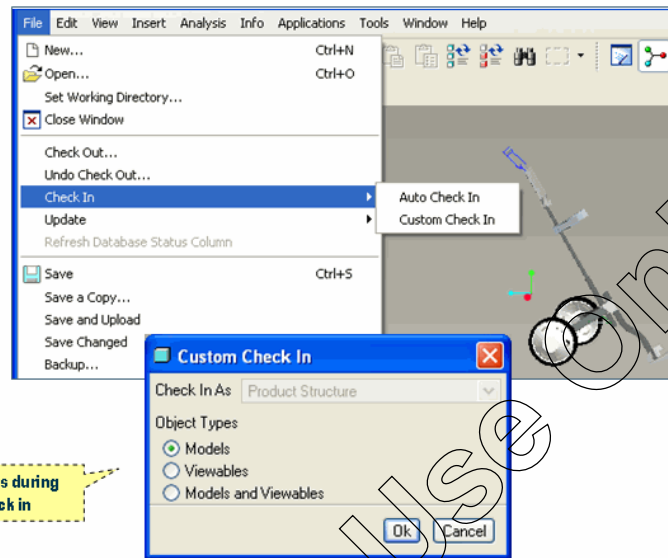
- Optionally, select the Attach Differences Report check box to generate a report that compares the checked-in object to its predecessor iteration and attach the report to the checked-in object. This option is only available from an active workspace.

Finally, click Finish. At this point, the check in is complete.

Checking In CAD Models using Pro/ENGINEER

Check In Methods

- 🕒 Auto Check In
- 🕒 Custom Check In



Checking In CAD Models using Pro/ENGINEER

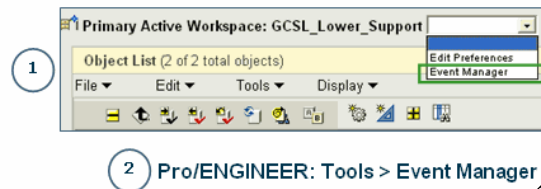
Instead of checking in the CAD documents from the active workspace, you can also use the Pro/ENGINEER menu options to check in the models. The Pro/ENGINEER menu offers two types of check ins: Auto Check In and Custom Check In. Auto Check In is similar to the workspace check in. It saves the models to the workspace first, and then checks in the models to the shared PDMLink context, such as a product.

Custom Check In provides an additional option. It enables you to generate the ProductView viewables on the client side, and then performs the check in. You can check in the models, viewables, or both. If you don't generate the viewables during check in, PDMLink server will do that at a later time.

Using the Event Manager





Event Manager

- Monitor transactions
- View status



Event Manager: <http://base.ptc.com/Windchill/>

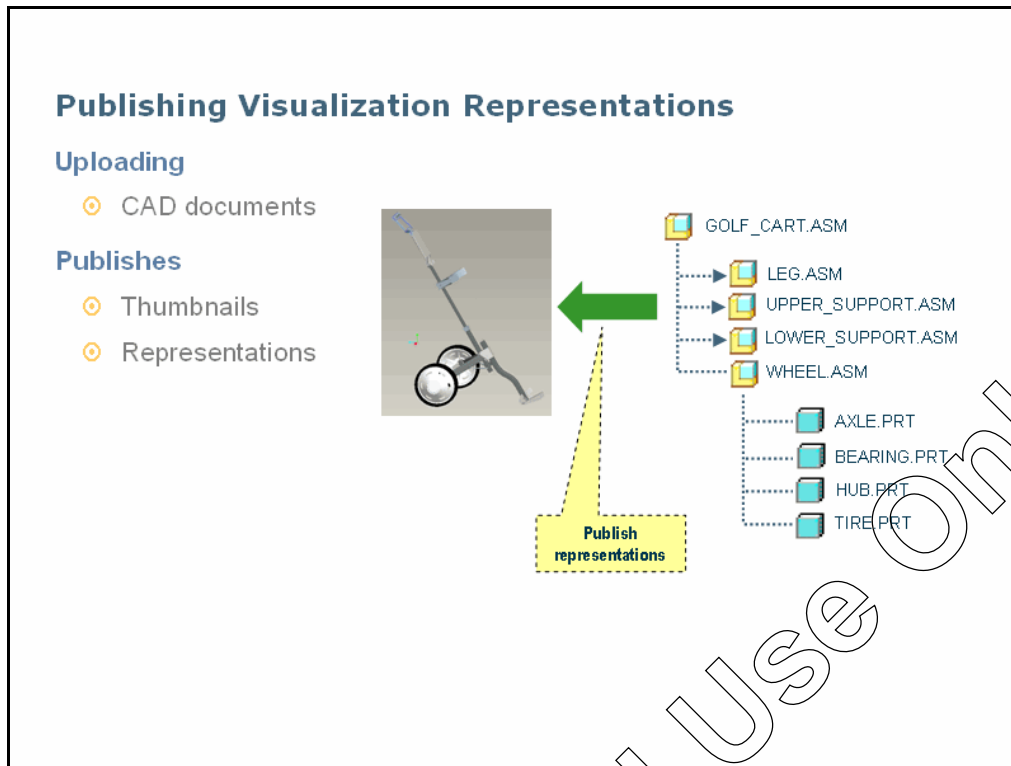
Events (42 of 42 total objects) View Conflicts icon Current View: Default

	Name	Status		Start Date	End Date
<input type="checkbox"/>	Upload	Failed		2007-05-21 19:17:13 GMT-04:0	2007-05-21 19:17:13 GMT-04:0
<input type="checkbox"/>	Save	Succeeded		2007-05-21 19:17:13 GMT-04:0	2007-05-21 19:17:13 GMT-04:0
<input type="checkbox"/>	Undo Checkout	Succeeded		2007-05-21 19:14:47 GMT-04:0	2007-05-21 19:14:49 GMT-04:0
<input type="checkbox"/>	Download	Succeeded		2007-05-21 19:14:49 GMT-04:0	2007-05-21 19:14:49 GMT-04:0

Using the Event Manager

Whenever you complete any transaction with the workspace, information is stored about the transaction. You can view these events by using the Event Manager, which can be accessed from the drop-down menu within the workspace. Alternatively, you can launch the Event Manager by clicking the Pro/ENGINEER's Tools menu and then selecting the Event Manager option.

If there are any exceptions in a transaction, they are indicated with a View Conflicts icon. You can click the icon to learn more about the exception.



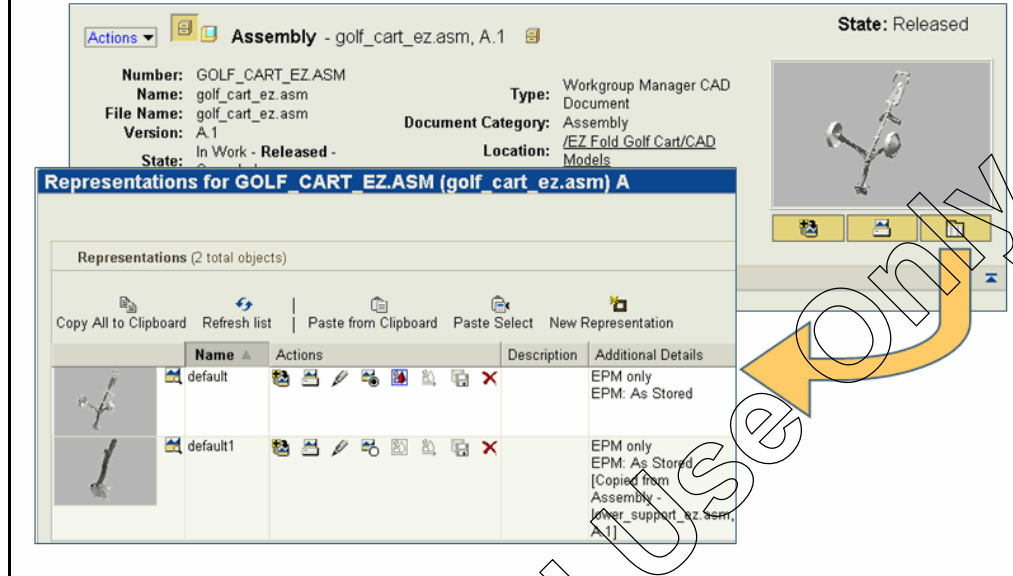
Publishing Visualization Representations

The Visualization Services built into Windchill PDMlink are responsible for managing all of the data supported by ProductView. When you upload a CAD document, a generic viewable or representation for the object is created. This process is called publishing.

The representation stores the ProductView files created for the object. A single CAD document may have multiple representations for different configurations of an assembly; however, one representation is designated as the default representation. A thumbnail of the default representation is displayed in search results and on the details pages for CAD documents.

Managing Visualization Representations

Object Representations



Managing Visualization Representations

You can easily view the default representation simply by clicking its thumbnail image. But how do you view and manage multiple representations?

PDMLink provides you with a number of tools to manage these representations. These tools include the Representations table and the Visualization Clipboard.

The Representations table enables you to view each of the representations that are associated to a specific object. Using this tool, you can create new representations, edit the default representation, and print or save representations to zip files.

Windchill systems are typically configured so publishing takes place automatically as CAD documents and parts are checked in.

The Batch Print All functionality is dependent on system configuration and requires standard ProductView

Lab Exercises

Exercise 1: Saving, Uploading, and Checking in CAD Models

Objectives

After successfully completing this exercise, you will know how to:

- Save CAD models to the workspace.
- Upload CAD models to the workspace.
- Check in CAD documents from a workspace to a product.

Scenario



In this exercise, you take the role of John Evans, an engineer at PTC Sports. As John you upload the golf cart lower support assembly he has been working on.

Initial Conditions


To successfully complete this exercise, you must establish the following initial conditions:

- Open a Pro/ENGINEER session and log on to Windchill PDMLink as John Evans (jevans/ptc).
- Ensure that the SL Lower Support workspace is set as the active workspace.

Task 1. Upload and check in the Pro/ENGINEER models to PDMLink.

1. Click the **File** menu in the Pro/ENGINEER's main menu bar.
2. Select **Open** to open a Pro/ENGINEER assembly.
3. In the File Open window, click the **Look In** drop-down menu to choose a different location.
4. Browse to D:\Student\Intro_to_PDMLink_9.0\Super Lite Golf Cart\CAD_Files\lower_support folder and select **lower_support_sl.asm** to open the assembly.
5. In the File Open window, click **Open** to open the assembly and components in Pro/ENGINEER.
6. Click the **File** menu in the Pro/ENGINEER's main menu bar.
7. Select **Save** to save the golf cart lower support assembly.
8. In the Save Object dialog box, click **OK** to save the assembly and components to the SL Lower Support workspace.
9. Click **File** on the Pro/ENGINEER's main menu.
10. Select **Close Window** to close the lower support assembly.
11. In the left pane, select the **SL Lower Support on PTC Sports** workspace to view the workspace contents.
12. In the Object List table, select the **Select all rows** check box to select all objects.
13. In the workspace toolbar, click the **Upload local contents to server** icon  to upload the components to the server.
14. In the Object List table, select the **Select all rows** check box to select all objects.
15. Click the **Check in object** icon  to check in the objects to the Super Lite Golf Cart product.
16. Click the lower part of the scroll bar to reach the bottom of the page.
17. Click the **Next** to view additional check in options.
18. Select the **Auto resolve incomplete objects** check box to resolve the ghost objects in the lower support assembly.
19. Click **Finish** to complete the check in process.


Task 2. Manually remove CAD documents from the workspace.

1. In the Object List table, select the **Select all rows** check box to select all objects.
2. Click **Remove objects from workspace** icon  to remove the all CAD document from the workspace.
3. Confirm the objects to be removed and click **OK** to finish the process.
4. In the Erase Confirm dialog box, click **OK** to remove all objects from the Pro/ENGINEER session.

Task 3. View the Event Manager log information.

1. In the right pane, click the **Primary Active Workspace: SL Lower Support** drop-down menu to view the available selections.
2. Select **Event Manager** to launch the Event Manager window.
3. Review the Status column in the Events table. Click the **Close** button to close the Event Manager window.

Task 4. View the checked in CAD documents by browsing through the PDMLink Product.

1. In the right pane, select the **Folders** minor tab to view the folder contents.
2. Click the **CAD Models** link to open the folder contents.
3. Click the lower part of the inner scroll bar to scroll down and reach the lower_support_sl.asm CAD document.
4. Click the **View information** icon  next to the lower_support_sl.asm CAD document to view the details page.
5. Click the **Structure** link at the bottom of the details page to view the subcomponents.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Upload models to a workspace.
- Check in CAD documents to a context.
- Identify CAD document storage locations.
- Identify available actions in the workspace.
- Explore additional check in options.
- Use the Event Manager.
- Manage visualization representations.

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. What happens when you upload a Pro/ENGINEER assembly to the PDMLink workspace?
 - A - All CAD documents are automatically shared with other users.
 - B - Uploading models places them within the workspace on the PDMLink server, which is a space reserved for only you.
 - C - PDMLink generates a CAD document object for each assembly model, layout, or drawing that you upload.
 - D - All of the above.
 - E - B and C only.

2. Every time a user creates a new workspace...
 - A - a new distinct storage location is created only in the user's personal folder on the server.
 - B - a new distinct storage location is created in the user's personal folder on the client.
 - C - a new distinct storage location is created in the user's personal folder on the server and on the client.
 - D - no space is reserved on the server or the client, as the workspace exists only virtually.

3. When you perform a Save operation on a model from within the Pro/ENGINEER menu...
 - A - the model is saved from the session memory to the private folder on the server (server-side workspace).
 - B - the model is saved from the session memory to the cache location on the disk (client-side workspace).
 - C - the model is moved from the client-side workspace to the server-side workspace.
 - D - the model is saved to the Pro/ENGINEER session memory only.

For Educational Use Only

Modifying CAD Models

Introduction

In this module, you learn how to modify CAD data within PDMLink. While Windchill PDMLink 9.0 can work with many different CAD Authoring tools, in this module you focus on using Pro/ENGINEER Wildfire. You also learn about the fundamentals of family table management.

Objectives

After successfully completing this module, you will be able to:

- Identify the three step process used to modify CAD models.
- Add CAD documents to the workspace.
- Check out CAD documents.
- Modify CAD documents.
- Check in CAD documents.
- Use family tables.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

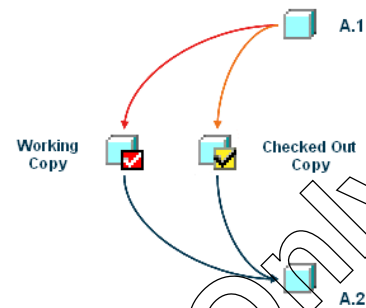
You may use the space below to take your own notes.

For Educational Use Only

Modifying CAD Models

Three-Step Process

- ⦿ Check out a CAD document
- ⦿ Modify the CAD document
- ⦿ Check in the CAD document

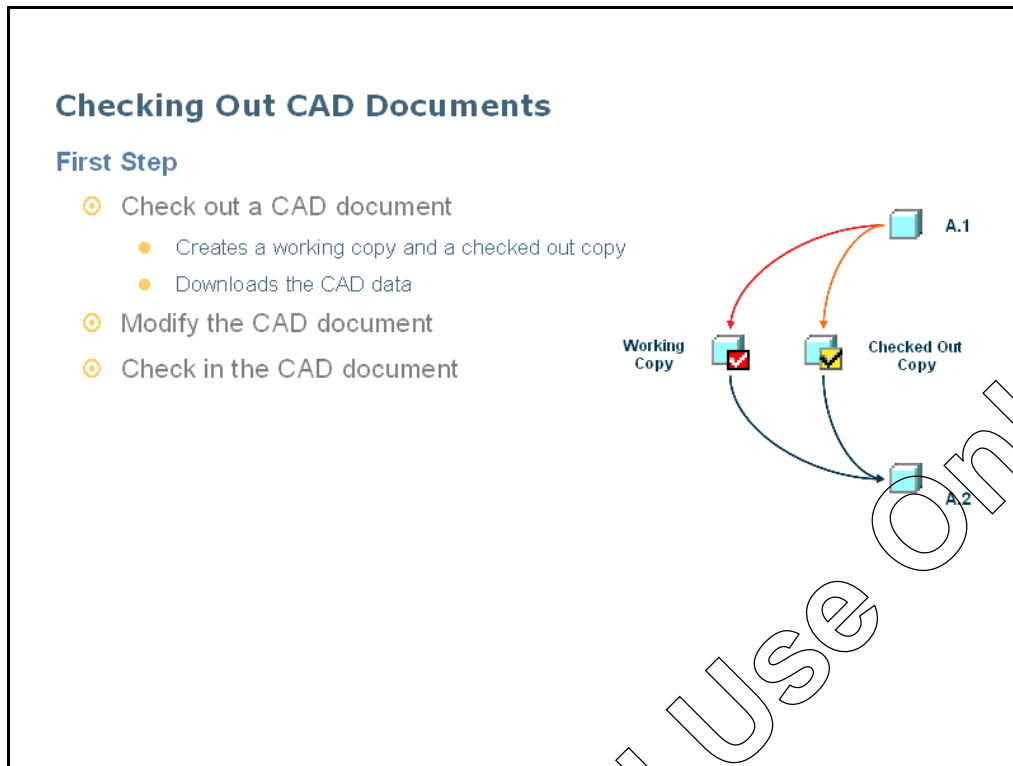


Modifying CAD Models

Modifying data with PDMLink is a simple process that uses three steps to modify CAD documents.

You begin this process from within Pro/ENGINEER Wildfire, from within a workspace, or from within the Unified Workgroup Manager. You will be focusing on the Pro/ENGINEER method in this module.

First, check out the CAD documents you want to modify. Next, modify them, and finally, check them back in.



Checking Out CAD Documents

In order to modify an object, you must perform a check out operation. When you check out a document, you communicate your intention to modify the design. In addition, the check out process enables you to determine the configuration of the desired objects as well as the workspace in which you can modify them.

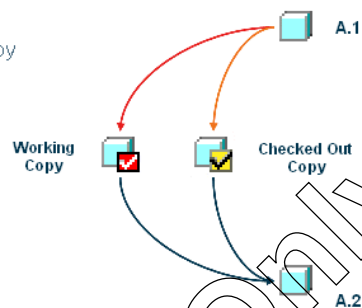
When the CAD document is checked out, two copies of the document exist. The first, the working copy, exists in the workspace you designate; only you can see and modify this copy. The second, the checked out copy, remains available for everyone to view. It is exactly the same as the CAD document that you have checked out—the only difference is that it is checked out—signaling to others that it is being modified.

During the check out process, all of the data that defines an object and its relationships is copied to the local workspace. You can specify whether the physical files should be copied from the PDMLink server to a workspace, or whether the files should be accessed through a link. Linked files are only retrieved from the PDM server when requested by Pro/ENGINEER. By using linked files, you maintain local copies of only those objects that you have retrieved into a Pro/ENGINEER session after check out.

Modifying CAD Documents

Second Step

- Check out a CAD document
 - Creates a working copy and a checked out copy
 - Downloads the CAD data
- Modify the CAD document
 - Attributes
 - Contents
 - Relationships
- Check in the CAD document



Modifying CAD Documents

After you have checked out the CAD document, you can open its contents and modify them in Pro/ENGINEER.

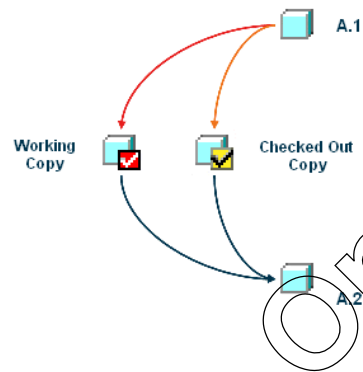
You can make changes to the working item. You can modify both its attributes and relationships, and also its content; however, no one is aware of these changes until you check it back in.

Note that if you have multiple workspaces, a working copy can only be modified from the workspace where it was checked out. The object is inaccessible from any other workspace until it is checked in.

Checking In CAD Documents

Third Step

- Check out a CAD document
 - Creates a working copy and a checked out copy
 - Downloads the CAD data
- Modify the CAD document
 - Attributes
 - Contents
 - Relationships
- Check in the CAD document
 - Reunites the two copies
 - Creates a new iteration from the working copy uploading any new content as required



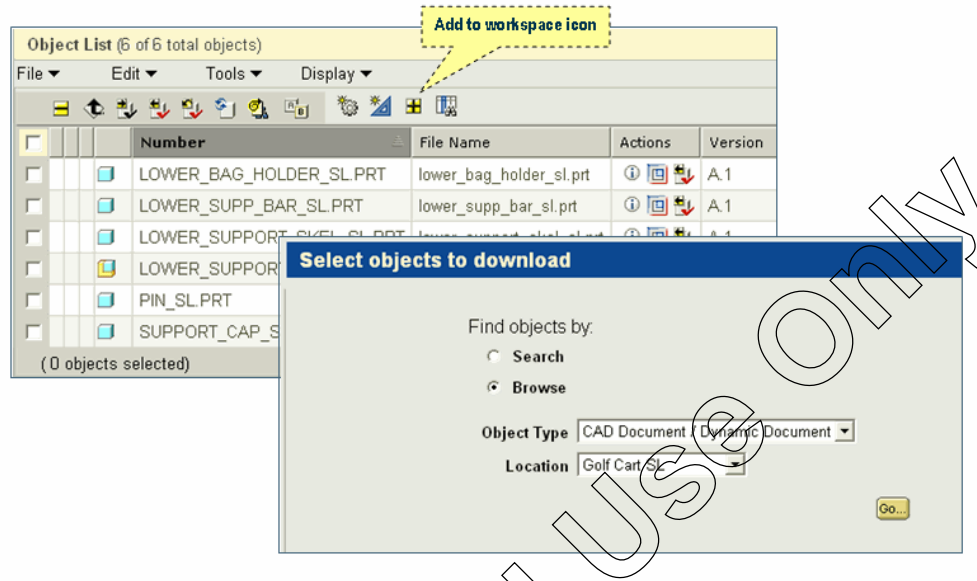
Checking In CAD Documents

Once you have completed your changes you can check the CAD document back in. You have many options as part of this process, but the end result is that the CAD document is checked back in.

When it is checked back in, a new iteration is created from the working copy. You can still view the previous iterations by viewing the iteration history.

Add to Workspace: Workspace Menu

Using the workspace menu



Add to Workspace: Workspace Menu

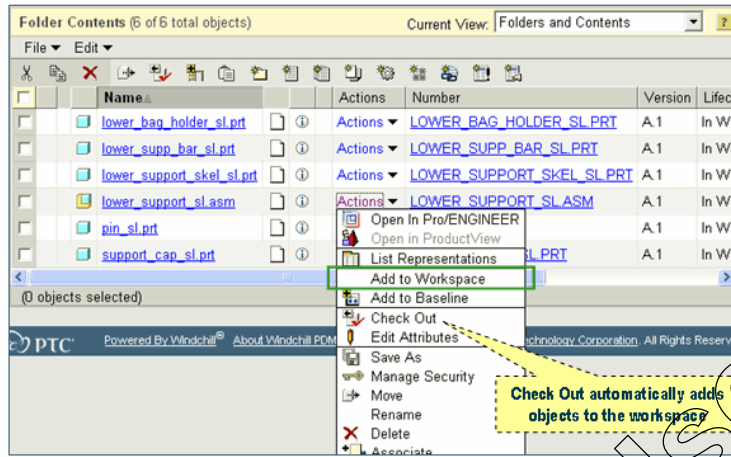
You can use the Add command to update workspace objects, or to add objects from Windchill to your workspace. The files associated with the objects can optionally be transferred to your local disk for read access by you. The Add to workspace action prompts you to either search for the desired object or browse for it in the PDMLink environment.



In the Windchill preferences user interface, you can set preferences for Add to Workspace and Check Out behavior.

Add to Workspace: Object's Actions Menu

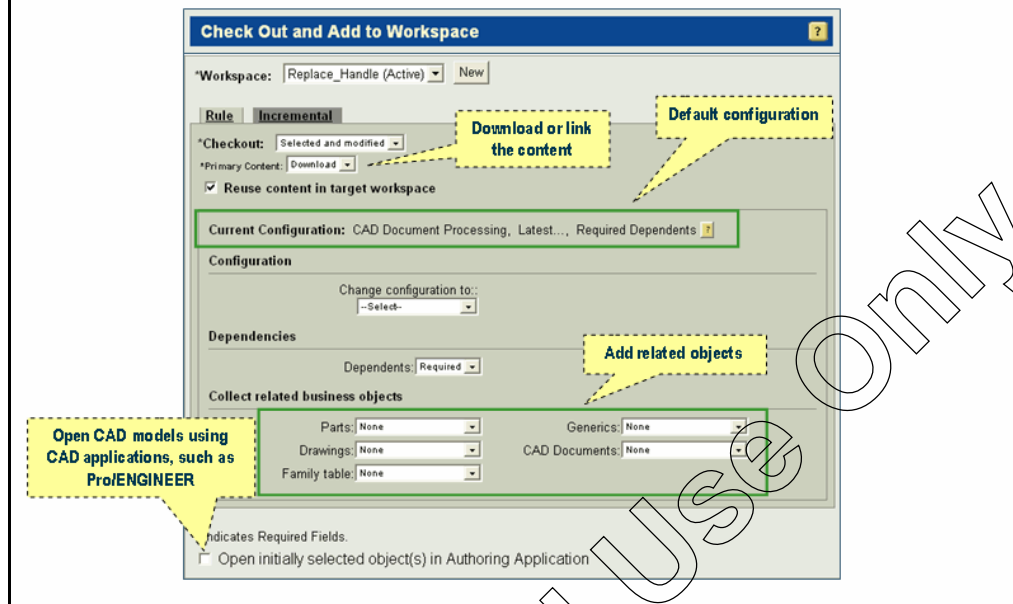
Using the Object's Actions Menu



Add to Workspace: Object's Actions Menu

You can also initiate the add action from other places in Windchill (for example, from an object's information page, or a folders page) by selecting the Add to Workspace action from an Actions menu. If you select the Check Out option from the Actions drop-down menu, the selected objects and the corresponding required dependents are automatically added to the workspace.

Check Out and Add to Workspace: Rules



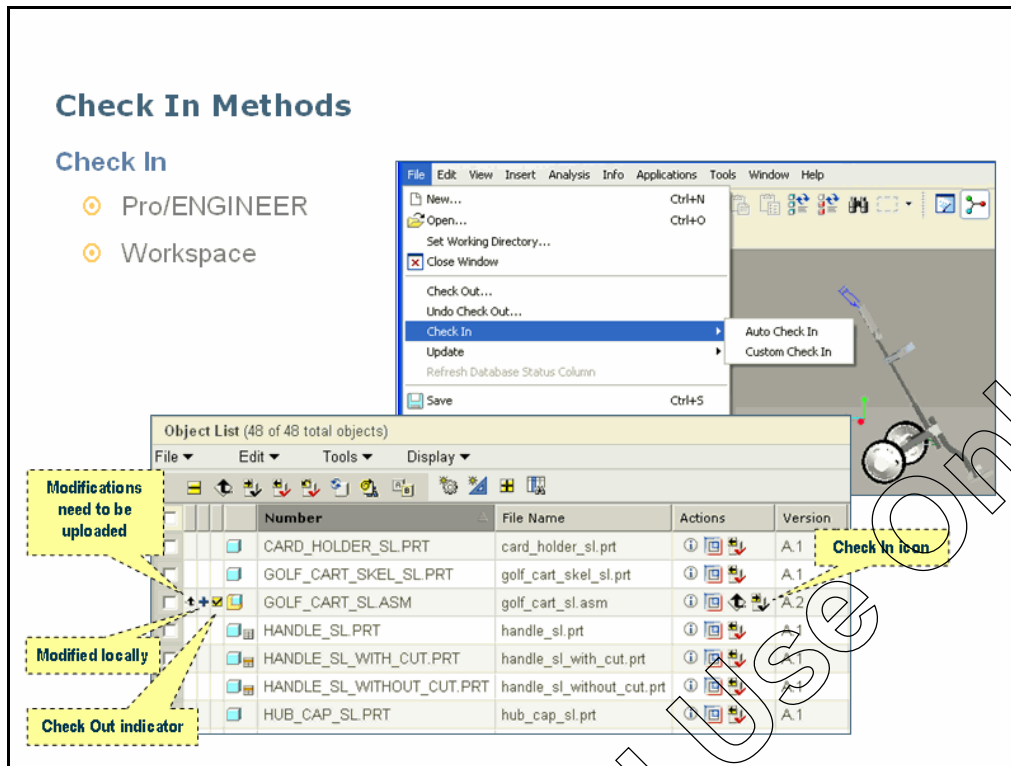
Check Out and Add to Workspace: Rules

During the Check Out and Add To Workspace operation, the Add to Workspace configuration page appears. By default, the page displays the Rules (tabbed) version of the collection user interface. You can toggle to the advanced mode of collection by selecting the Incremental tab. In the incremental mode you can create a customized display for table objects and their attributes.

You can select either the download or the link option from the Primary Content drop-down list (applies to all the objects collected for check out). Download enables you to download the content to the workspace upon execution of action. Link, on the other hand, only downloads the metadata to the workspace and, if necessary, a link is created to the commonspace content for later content download.

The default behavior of the system is to download only the required dependents to the workspace. However, you can change the setting to include all or no dependents. Similarly, you can select all related objects, such as drawings, parts, or family table components while adding objects to the workspace.

Finally, you have the option to open the selected objects in the native CAD tool, such as Pro/ENGINEER.



Check In Methods

From within Pro/ENGINEER Wildfire, you are able to check in objects you have checked out by using the File menu. You have two options when checking in: Auto Check In and Custom Check In.

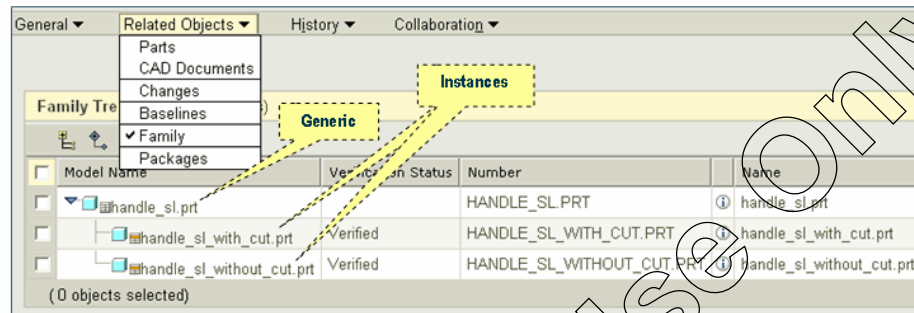
- **Auto Check In** enables you to check in the file without changing any of your default options. Typically, you will use this option if during your check out you modified the models, rather than any relationships of the CAD document.
- **Custom Check In** enables you to select extra check in options. It also enables you to create client-side ProductView viewables.

The workspace toolbar can also be used to check in the objects. The workspace table displays the current status of each object by using various types of indicators. By looking at these indicators, you can quickly understand whether the object has been modified and needs to be checked in or not.

Family Table Management

Display Objects

- Generics
- Instances
- Nested family tables



Family Table Management

The Family table, located on the details page of a CAD document, displays a tree that shows the current object's family. Family tables are a feature unique to Pro/ENGINEER, so some of this information may not be relevant to you.

You can use family tables to create variations of design models in Pro/ENGINEER. The original design model is called the generic model and contains the detailed geometry. The variations are stored in a table as instances of the generic model. Windchill PDMLink manages the instances as individual objects dependent on the generic model. You can include all instances when checking out a generic model or while modifying an instance in Pro/ENGINEER. You can replace an instance with another instance from the same family table in Pro/ENGINEER without affecting parent-child relationships.

If you are accustomed to using family tables, Windchill PDMLink has many features to support them. From the family table on the details page you can view generics, instances, and a nested family table structure, if a component part has them.

Family Table: Characteristics

Characteristics

- ◉ Each instance is an independent object.
- ◉ Modify family tables using Pro/ENGINEER.
- ◉ Download the generic without downloading any instances.
- ◉ Manage the instances independently of each other as long as you are not making changes to the family table definition.
- ◉ Changes to instances in Pro/ENGINEER are saved in the generic model CAD document. Therefore, the generic model CAD document will need to iterate with changes to the instance.
- ◉ Any changes to the generic will require the entire family table CAD documents to iterate.

Family Table: Characteristics

A family table has the following characteristics:

- Each instance is an independent object.
- Modify family tables using Pro/ENGINEER.
- Download the generic without downloading any instances.
- Manage the instances independently of each other as long as you are not making changes to the family table definition.
- Changes to instances in Pro/ENGINEER are saved in the generic model CAD document. Therefore, the generic model CAD document will need to iterate with changes to the instance.
- Any changes to the generic will require the entire family table CAD documents to iterate.

Lab Exercises

Exercise 1: Checking Out and Modifying CAD Models

Objectives

After successfully completing this exercise, you will know how to:

- Check out CAD documents.
- Modify CAD data.
- Check in CAD documents with modified CAD data.

Scenario


In this exercise, you again take the role of John Evans and work with the Super Lite Golf Cart assembly. Specifically, you assemble the lower support assembly into the main golf cart assembly. You do all of this using Pro/ENGINEER Wildfire.

Initial Conditions






To successfully complete this exercise, you must establish the following initial conditions:




- Log on to Windchill PDMLink as John Evans (jevans/ptc) through Pro/ENGINEER Wildfire.
- Maximize the Pro/ENGINEER window and start on the Folder Browser tab of the Pro/ENGINEER.

Task 1. Activate a new workspace.



1. In the Pro/ENGINEER Folder Navigator window, ensure that the PTC Sports node is expanded. Select **Workspaces** to view all workspaces.
2. In the My Workspaces table, click the **Activate Workspace** icon  next to the SL Golf Cart workspace to activate the workspace.
3. In the Change Workspace dialog box, click **Yes** to confirm the change.

Task 2. Open and modify the golf cart assembly in Pro/ENGINEER.


1. Click **Open an existing object** icon  on the Pro/ENGINEER main menu.
2. Using the Look In drop-down menu, browse to the PTC Sports\Products\Super Lite Golf Cart\CAD Models folder and select **golf_cart_sl.asm** file.
3. Click **Open** to open the assembly in Pro/ENGINEER.
4. Click the **Datum planes on/off** button  on the Pro/ENGINEER toolbar to turn off the datum planes display.
5. Click the **Datum axes on/off** button  on the Pro/ENGINEER toolbar to turn off the datum axes display.
6. Click the **Datum points on/off** button  on the Pro/ENGINEER toolbar to turn off the datum points display.
7. Click the **Coordinate systems on/off** button  on the Pro/ENGINEER toolbar to turn off the Coordinate systems display.
8. In the Model Tree window, click the **Settings** drop-down menu to view the available options.
9. Select **Tree Filters....**
10. In the Model Tree Items dialog box, select the **Features** check box in the Display column to enable the features display in the model tree.

11. Click the **OK** button to save the information and close the Model Tree Items dialog box.
12. Click the **Add component to the assembly** icon  in the Pro/ENGINEER feature toolbar to add a component assembly.
13. In the Conflicts dialog box, click **Ok** to check out the golf cart assembly.
14. In the Open dialog box, use the Look In drop-down menu and browse to PTC Sports\Products\Super Lite Golf Cart\CAD Models folder and select **lower_support_sl.asm**.
15. Click **Open** to open the lower support assembly in Pro/ENGINEER.
16. In the bottom-left corner of the Pro/ENGINEER window, click the **Automatic** drop-down menu to select a different constraint.
17. Select **Coord Sys** to select the Coordinate Systems as the constraint type.
18. In the Pro/ENGINEER main toolbar, click the **Search** icon  to search for the first coordinate system.
19. In the Search Tool window, click the **Look In** drop-down menu to view other objects.
20. Select LOWER_SUPPORT_SL.ASM.
21. In the Search Tool dialog box, click the **Find Now** button to view the coordinate systems for the lower support assembly.
22. Select the CSYS_ASM_DEF:F5(CSYS):LOWER_SUPPORT_SL coordinate system. (Enlarge the window to view the full name, if necessary.)
23. Click the **Move to Right** button  to move the selected coordinate system to the right window.
24. Click **Close** to exit the Search Tool window.
25. In the Pro/ENGINEER model tree, expand the LEG_SL.ASM node to view the components.
26. Select CSYS_ASM_DEF to select the second coordinate system.
27. Click the green check mark in the bottom-right corner to save and apply the changes.

Task 3. Save and check in the changes.


1. Click the **Save** icon  in the Pro/ENGINEER's main toolbar to save the assembly to the workspace.
2. In the Save Object window, click **OK** to confirm the workspace as the target save location.
3. Click **File** in the Pro/ENGINEER's main menu bar.
4. Select **Close Window** to close the golf cart assembly.
5. In the Folder Navigator pane, select **SL Golf Cart on PTC Sports** to refresh the workspace contents.
6. Click the lower part of the Object List table scroll bar to scroll down and view the GOLF_CART_SL.ASM CAD document.
7. Select the **Check In** icon  next to the GOLF_CART_SL.ASM object to check in the assembly.
8. Click the **Next** button at the bottom of the page to view more check in options.
9. Do not select any other check in option. Click the **Finish** button to complete the check in process.

Task 4. Manually remove objects from the workspace.

1. In the workspace table, select the **Select all rows** check box to select all objects.
2. Click the **Remove objects from workspace** icon  to remove all objects from the SL Golf Cart workspace.
3. Click the lower part of the scroll bar to scroll down.

4. Click **OK** to remove the objects from the workspace.
5. In the Erase Confirm dialog box, click **OK** to remove all objects from the Pro/ENGINEER session.

Task 5. Verify the results by navigating through the PDMLink environment.

1. In the Pro/ENGINEER's Folder Navigator window, expand the PTC Sports node and browse to PTC Sports\Products\Super Lite Golf Cart cabinet and then select the **CAD Models** folder to view the folder contents.
2. Click the lower part of the Folder Contents table scroll bar to scroll down and view the golf_cart_sl.asm CAD document.
3. Click the **View Information** icon  next to the golf_cart_sl.asm object to open the details page and confirm the changes.

This completes the exercise.

For Educational Use Only

Exercise 2: Using Family Tables

Objectives

After successfully completing this exercise, you will know how to:

- Use Pro/ENGINEER family tables.

Scenario

In this exercise, you take the role of John Evans and work with the golf cart upper support assembly. Specifically, you work with the golf cart's Handle model and its family table.


PTC Sports has a design policy that any generic part in an assembly must be replaced with an instance from the family table. You check out the golf cart upper support assembly, and replace the generic part with an instance of the handle part. You then check in the golf cart assembly. You do all of this using Pro/ENGINEER Wildfire.

Initial Conditions



To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans/ptc) through Pro/ENGINEER Wildfire.
- Maximize the Pro/ENGINEER window and start on the Folder Browser tab of the Pro/ENGINEER.

Task 1. Activate a new workspace.

1. In the Pro/ENGINEER's Folder Navigator window, expand the PTC Sports node and select the **Workspaces** folder to view all workspaces.
2. Click the **Activate Workspace** icon  next to the Replace Handle workspace to activate the workspace.
3. In the Change Workspace dialog box, click **Yes** to confirm the change.

Task 2. Replace a family table generic part with an instance in the golf cart assembly.


1. Click **Open an existing object** icon  on the Pro/ENGINEER main menu.
2. Using the Look In drop-down menu, browse to the PTC Sports\Products\Super Lite Golf Cart\CAD Models folder and select **upper_support_sl.asm** file.
3. Click **Open** to open the assembly in Pro/ENGINEER.
4. Select the HANDLE_SL.PRT model in the Model Tree.
5. Click **Edit** in the Pro/ENGINEER main menu.
6. Select **Replace...** to open the Replace window.
7. In the Replace window, click the **Browse** button  next to the Select 1 item field to view the available family table instances.
8. In the Family Tree window, select HANDLE_SL_WITH_CUT.
9. In the Family Tree window, click **OK** to save the information and close the Family Tree window.
10. In the Replace window, click **OK** to complete the replace process.
11. In the Conflicts window, click the **Ok** button to check out the object.

Task 3. Save and check in the upper support assembly.

1. Click **File** in the Pro/ENGINEER's main menu.
2. Select **Check In** to check in the assembly.

3. Select **Auto Check In** to perform the check in process in background.
4. Click **OK** to save the changes in the workspace as well.
5. In the Conflicts dialog box, click the **Set All** drop-down menu.
6. Select **Continue** to save without checking out family table and other parts.
7. In the Conflicts dialog box, click **Ok** to continue saving the assembly.

Task 4. Verify the changes in PDMLink.

1. Click **File** in the Pro/ENGINEER's main menu.
2. Select **Close Window** to close the upper support assembly.
3. In the Folder Navigator pane, expand PTC Sports\Products\Super Lite Golf Cart and select **CAD Models** folder to view the folder contents.
4. Click the lower part of the Folder Contents table scroll bar to view the upper support assembly CAD document.
5. Click the View information icon  for the upper_support_sl.asm CAD document to open the details page.
6. Click the **Structure** link to view the upper support assembly structure.
7. Observe that the handle generic part has been replaced by an instance.

This completes the exercise.

For Educational Use Only

Summary

After successfully completing this module, you should know how to:

- Identify the three step process used to modify CAD models.
- Add CAD documents to the workspace.
- Check out CAD documents.
- Modify CAD documents.
- Check in CAD documents.
- Use family tables.

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. When you check in a CAD document...
 - A - a new iteration is created for that CAD document.
 - B - you can still view the previous iteration by viewing the iteration history.
 - C - the CAD document is unlocked automatically.
 - D - all of the above.
2. Add to Workspace option can be used to...
 - A - add the selected CAD documents and their related dependents to the workspace.
 - B - indicate your intent to modify the object.
 - C - optionally check out the selected CAD documents.
 - D - A and C.
3. By default, when you check out a CAD document from a PDMLink product...
 - A - only the selected object is added to the workspace.
 - B - the selected object and all required and optional dependents are added to the workspace.
 - C - no object is added to the workspace automatically.
 - D - the object and all required dependents are automatically added to the workspace.

For Educational Use Only

Fundamentals of Product Structures

Introduction

In this module, you learn some of the concepts and terms that surround products and product structures. You also learn to describe the objects that define Windchill PDMLink 9.0 products.

You learn how object masters and versions define the product structure. In addition, you learn how to describe the part-centric and CAD-centric approaches to new product introduction, and you also learn how to describe the tools available to manage product structures.

The purpose of this module is to give you a high-level overview of products and product structures and review how Windchill PDMLink manages the complete product data set.

Objectives

After successfully completing this module, you will be able to:

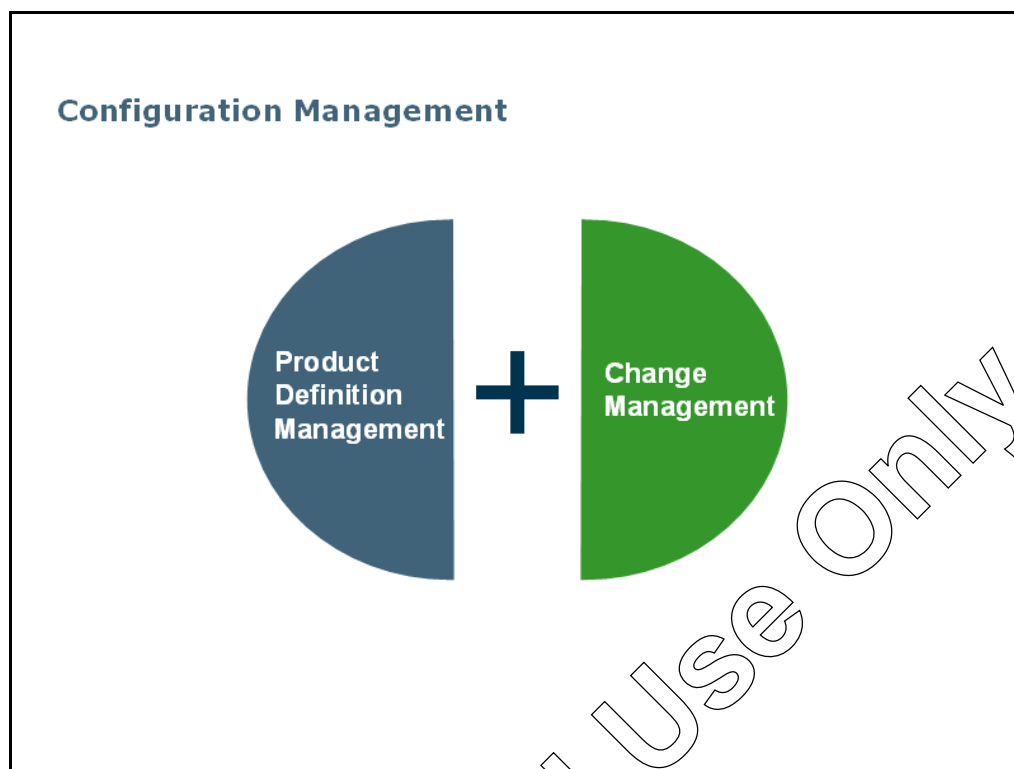
- Describe the role of product structures in configuration management.
- Describe the objects that define product structures.
- Describe the process of creating the product structure objects using part-centric design and CAD-centric design.
- Describe how object masters and versions define and manage the product structure.
- Describe the tools available to manage product structures.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

For Educational Use Only

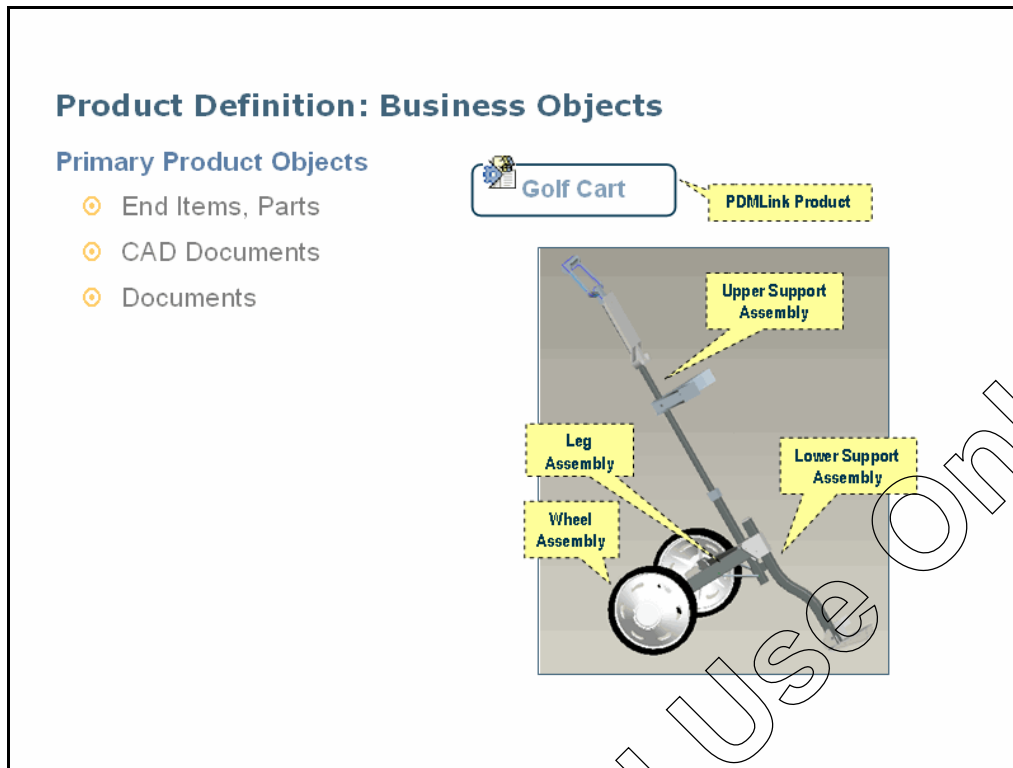


Configuration Management

Configuration Management refers to the collective activities associated with determining and documenting the content of manufactured products as they are developed, produced, sold, modified, and retired from service.

Configuration Management is comprised of two components. The first component, product definition management, is the modeling of product structures and all the information associated to them that describes the product. The second component is the management of changes to the structure and information that invariably occur over time.

Windchill PDMLink provides features that support both components of Configuration Management. In this module, you explore the PDMLink features that support the first component of Configuration Management: Product Definition Management.



Product Definition: Business Objects

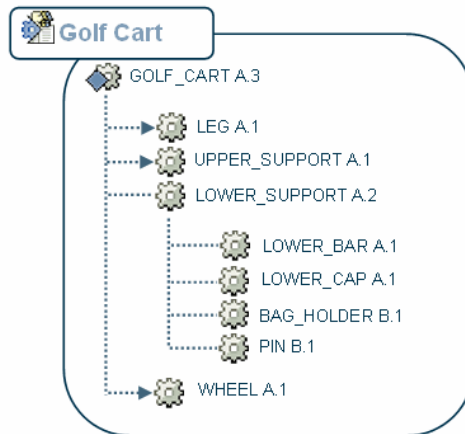
To understand how PDMLink organizes product information, you can re-examine the objects that together, define the product. PDMLink enables you to organize and manage a product's information. A product is defined by end items, parts, CAD documents, and documents. For example, the golf cart in the slide above is a PTC Sports' product.

A product is typically considered as the real-world item manufactured and sold to customers. PDMLink expands the concept of a product to include the environment in which users collaborate to develop that end item. This environment, known as the product context, organizes and manages all of the information associated to the finished manufactured product.

Product Definition: End Items and Parts

Primary Product Objects

End Items, Parts



Product Definitions: End Items and Parts

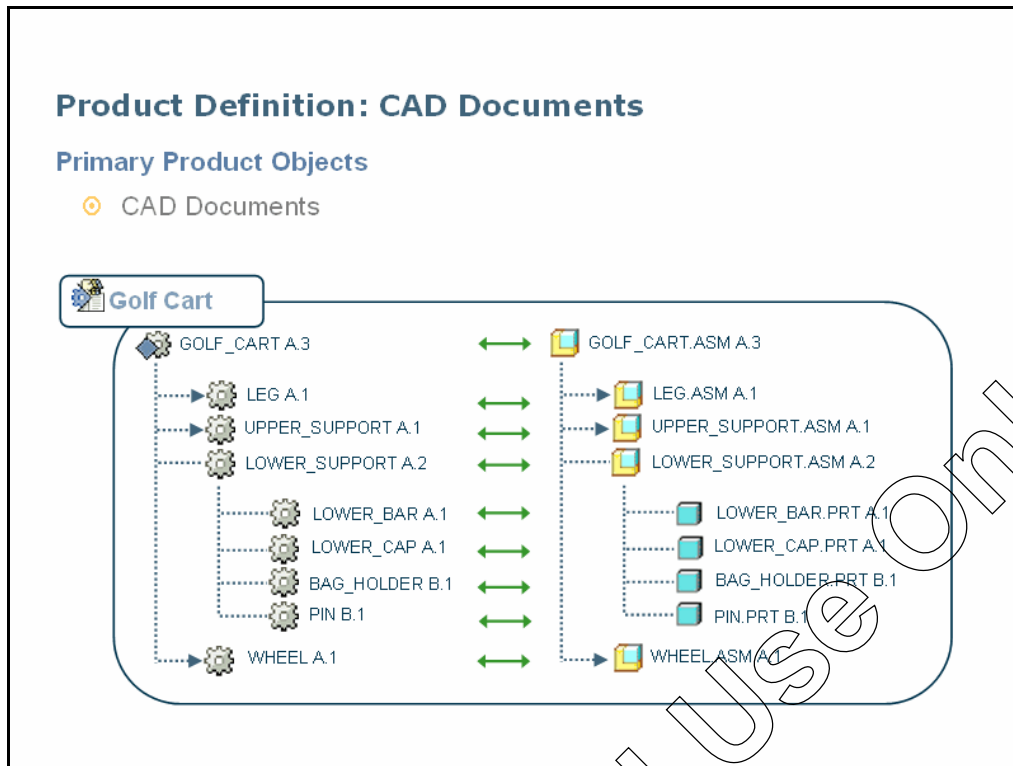
This module discusses end items and parts. You can use the golf cart as an example and examine how it can be represented in PDMLink.

Within a particular product context, the object being developed for eventual delivery is referred to as the end item. The golf cart is a completed product, and therefore is best represented by an end item.

Parts are the basic physical elements that make up the end item. Parts are listed below the end item in a structural hierarchy and represent the rest of the product structure. An end item is, in fact, a special kind of part that represents a unit of functionality that is assembled and delivered on its own.



An end item may itself contain other end items, such as a finished component from a supplier.

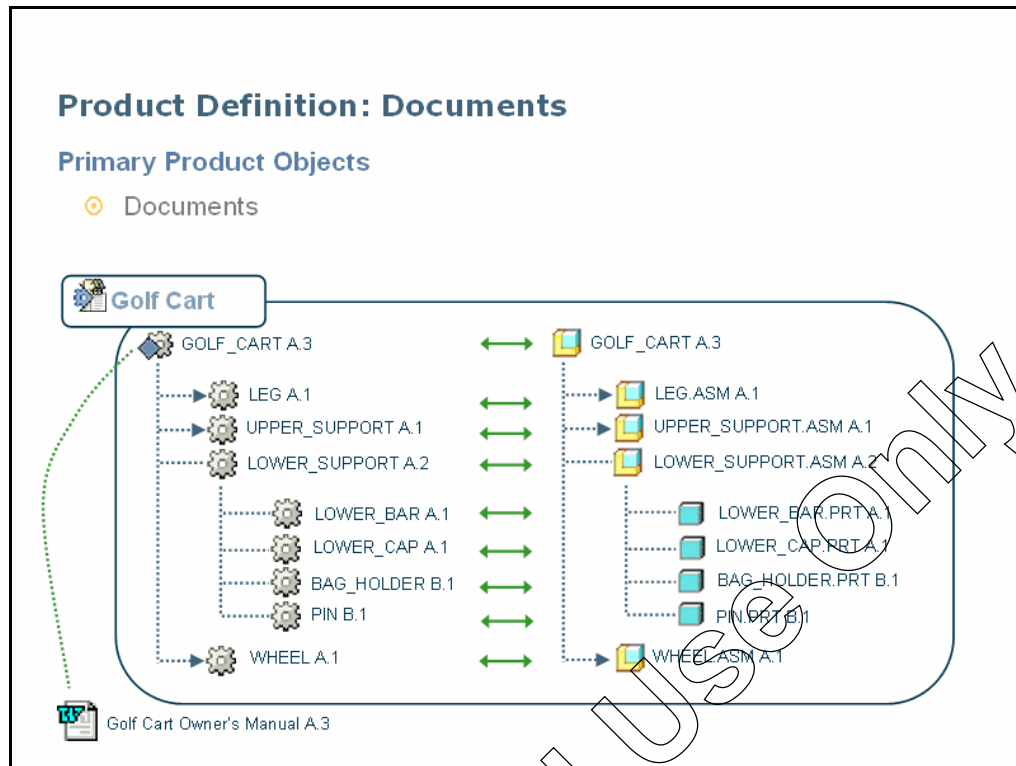


Product Definition: CAD Documents

Parts and end items store details and the specifics about them, such as their name. However, they do not have content or contain files.

Each part or end item can be associated to a CAD document that contains a CAD model of an assembly or component. For example, the **GOLF_CART** end item has a relationship to a **GOLF_CAR.ASM** CAD document that contains details and the CAD data file.

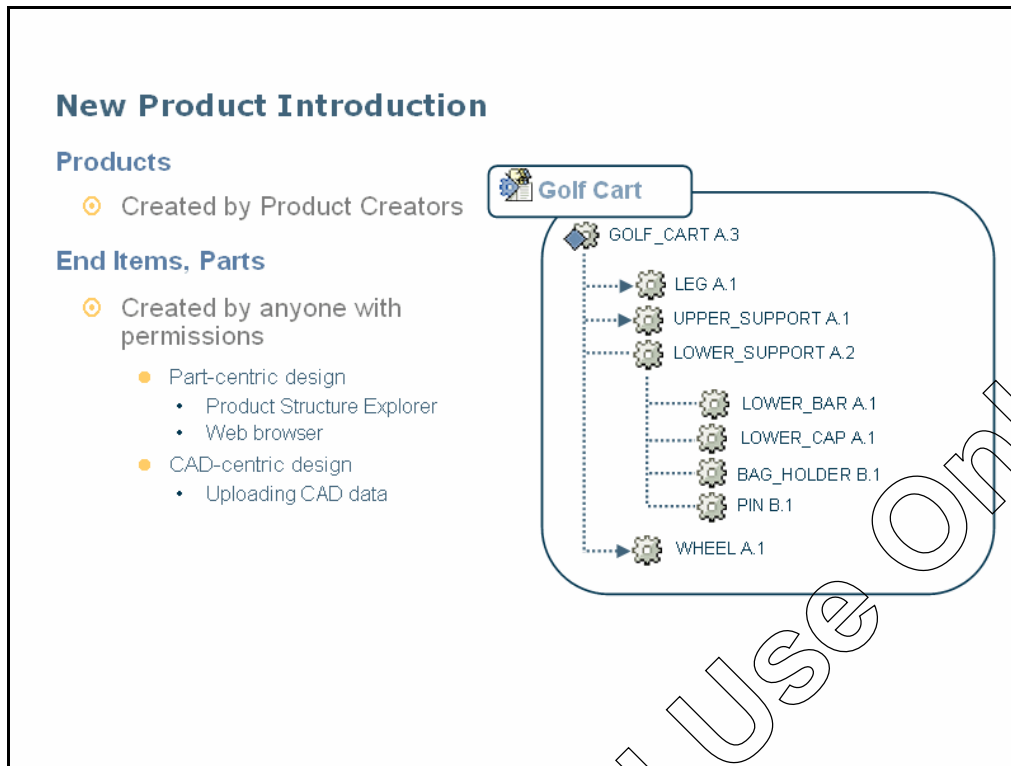
Note that each end item and part can be associated to the CAD document that defines it. Together, these two objects represent the product.



Product Definition: Documents

Frequently, a product may have many files associated to it. These include such elements as requirements, specifications, or documentation.

PDMLink provides you with document management tools that enable you to associate documents, such as, requirements, specifications, and documentation to end items or parts. All of these are typically stored within the same product.



New Product Introduction

These different product elements can be introduced to the product by product creators and anyone with appropriate permissions.

Administrators called product creators create products, or product contexts. They establish the team that participates on the product, and they manage the product. Product creators also set up the folder hierarchy that is used to store various product objects.

End items and parts can be created by anyone on the team with the appropriate permissions.

The following are two approaches for creating product structures in PDMLink:

- In the part-centric approach, the product structure is designed before any CAD design work begins. The parts are created first, and through workflows, the tasks of designing the CAD models are distributed to teams of engineers. Parts and end items can be created and managed using the Product Structure Explorer or a Web browser.
- In the CAD-centric approach, PDMLink can automatically build product structures when the existing CAD data is uploaded to the product's workspace in PDMLink. PDMLink can support many different CAD platforms, including, Pro/ENGINEER Wildfire, Catia, AutoCAD, and more.

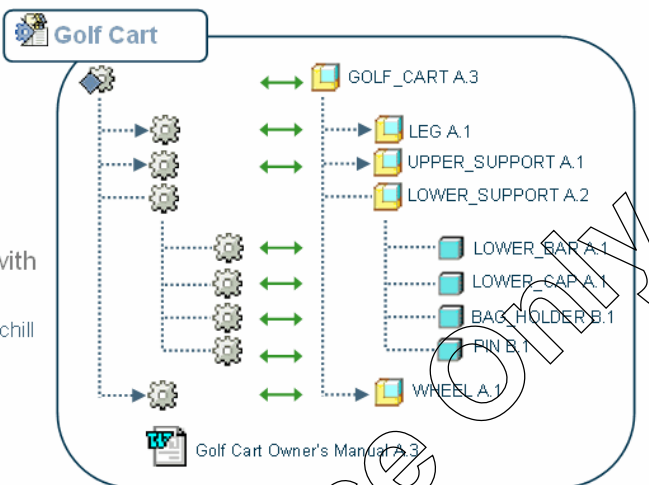
New Product Introduction (cont.)

CAD Documents

- Created using CAD application
- Uploaded through workspaces

Documents

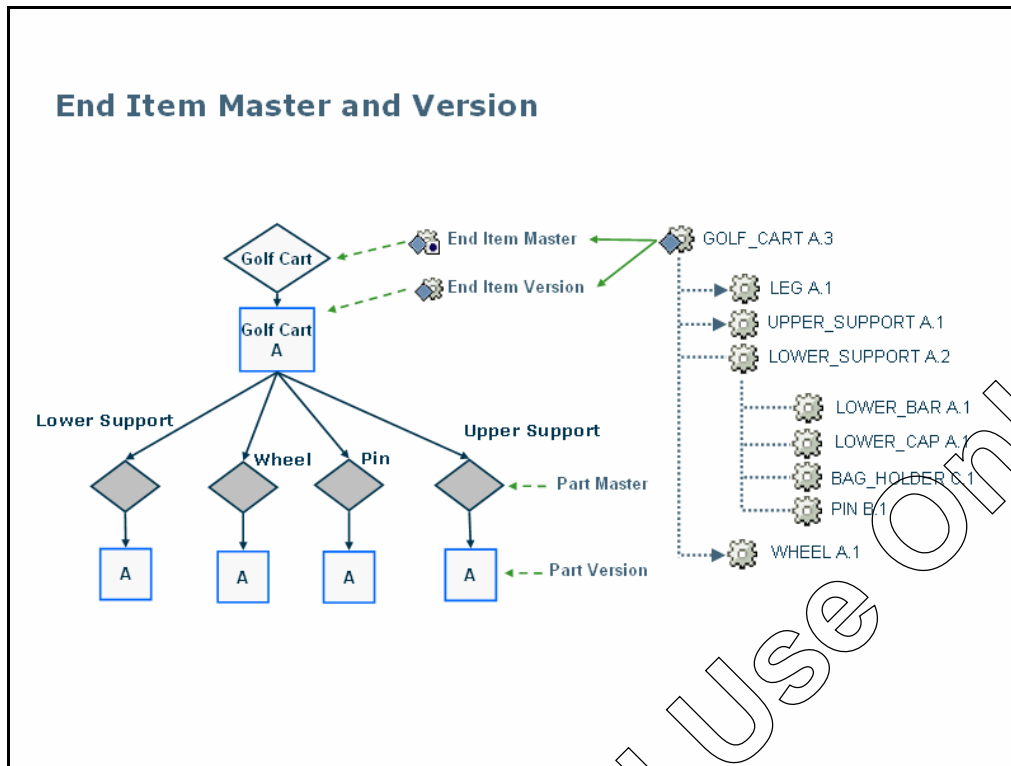
- Created by anyone with permissions
 - Added through Windchill
 - Desktop Integration



New Product Introduction (cont.)

After a CAD model is created using the parent application, the model is then uploaded into CAD documents that are typically created through a product's workspace. Because the method of creating CAD documents is somewhat dependant on the CAD application you use, the CAD-centric approach is explored more fully in a separate course.

Documents are also created by anyone with the appropriate permissions. The files they store can be uploaded through the PDMLink interface or through desktop integration. Desktop integration is a set of features that enables you to perform many PDMLink functions directly through Microsoft Office.



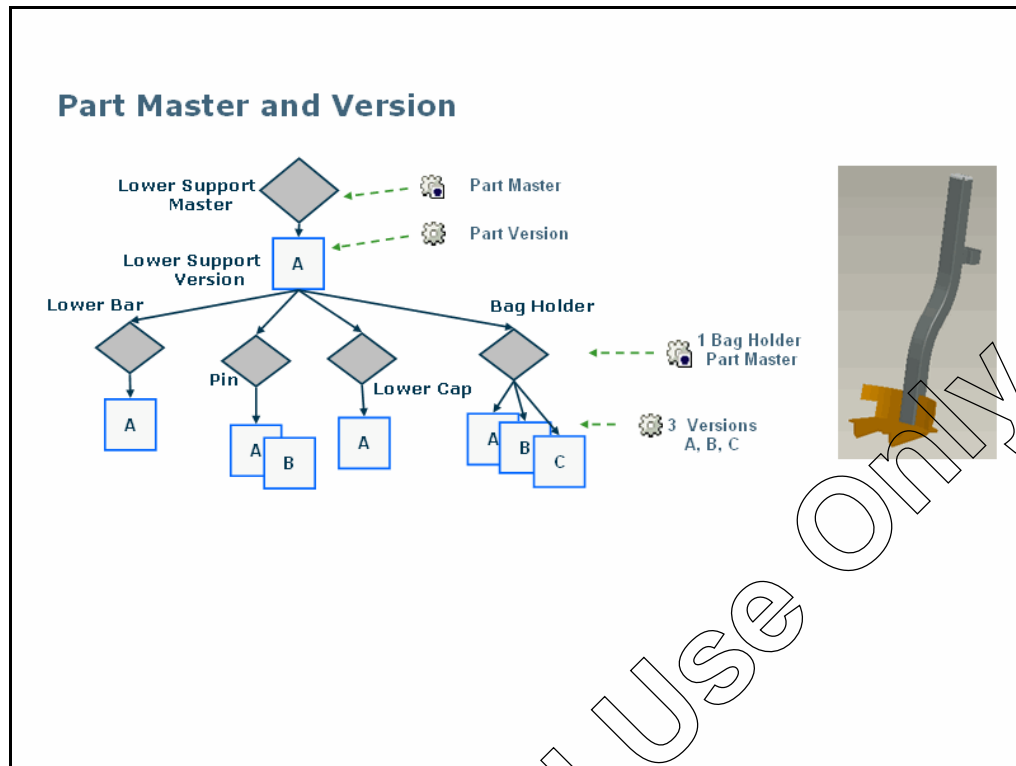
End Item Master and Version

Take a look behind the scenes to see how Windchill maintains all of these end items and parts, and their relationships.

First, take a look at the top-level end-item: the golf cart.

The golf cart is the top-level end item and it is made up of the end item master and the end item version.

- The end item master manages the different versions of a specific end item. An end item master has one or more end item versions. End item masters use an icon that includes a large dot, as shown in the slide.
- The end item version records information that is unique to a specific stage in an end item's design life cycle. In the slide's example, the golf cart has just a single version: A.



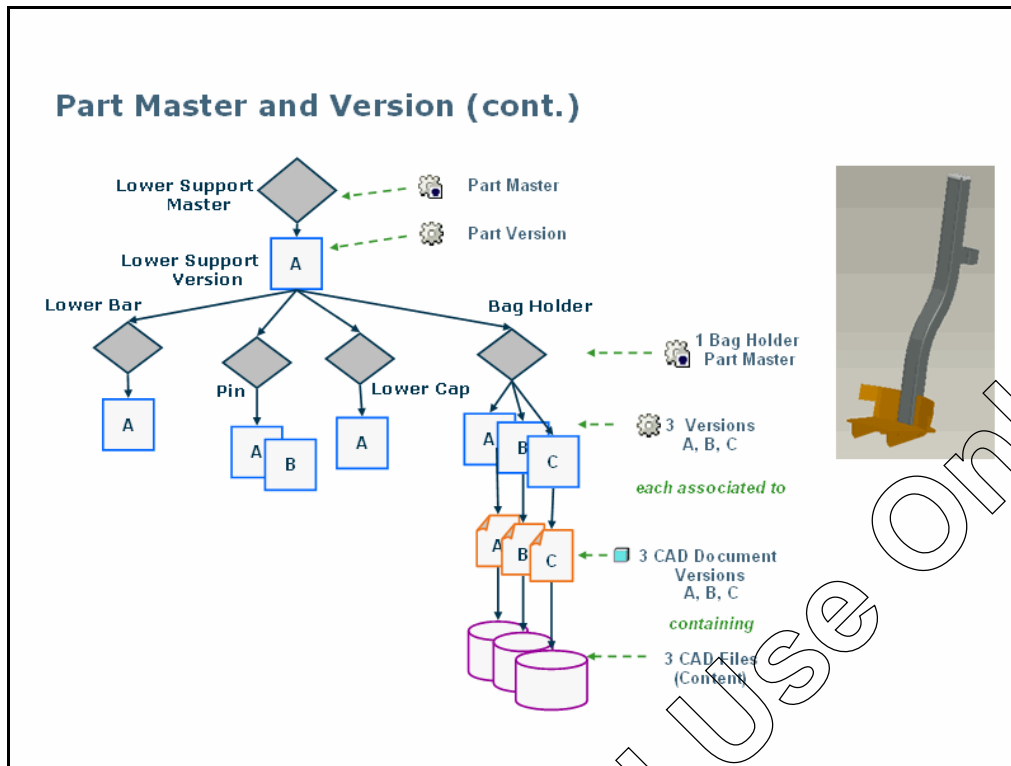
Part Master and Version

You can explore a subassembly: the golf cart lower support assembly. Stemming off of the lower support is a complete product structure for that assembly.

Each end item and part in the product structure has only one master that manages all of the versions of the end item or part. A version master can then manage one or more end item or part and their subsequent versions.

In the slide above, the Bag Holder part master manages three versions of the Bag Holder: A, B, and C.

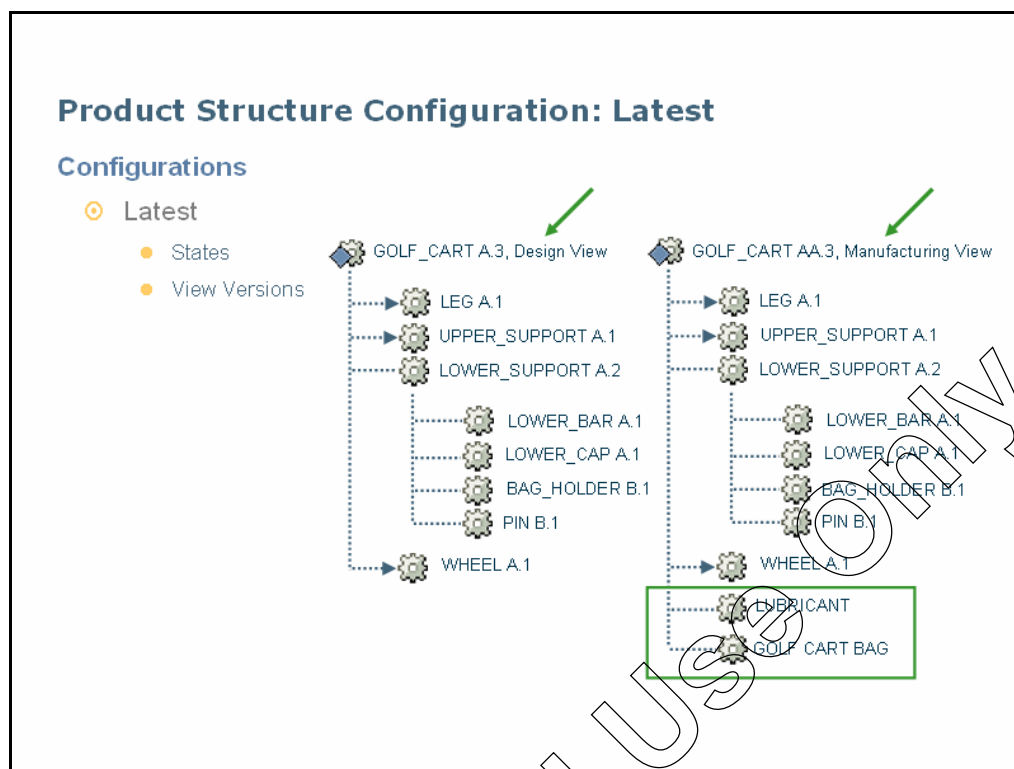
Notice that the part master icon also uses a large dot to differentiate it from a part version, as shown in the slide.



Part Master and Version (cont.)

Each of the part versions is associated to a CAD document. And each of these CAD documents contains CAD data that was created using a CAD tool, such as Pro/ENGINEER.

While it may be useful to understand the inner workings of Windchill, it is more important to understand that there can be many versions of parts and end items and the part and end item masters manage the versions. Each part and end item can be associated to the right CAD data that when assembled, represent your product.



Product Structure Configuration: Latest

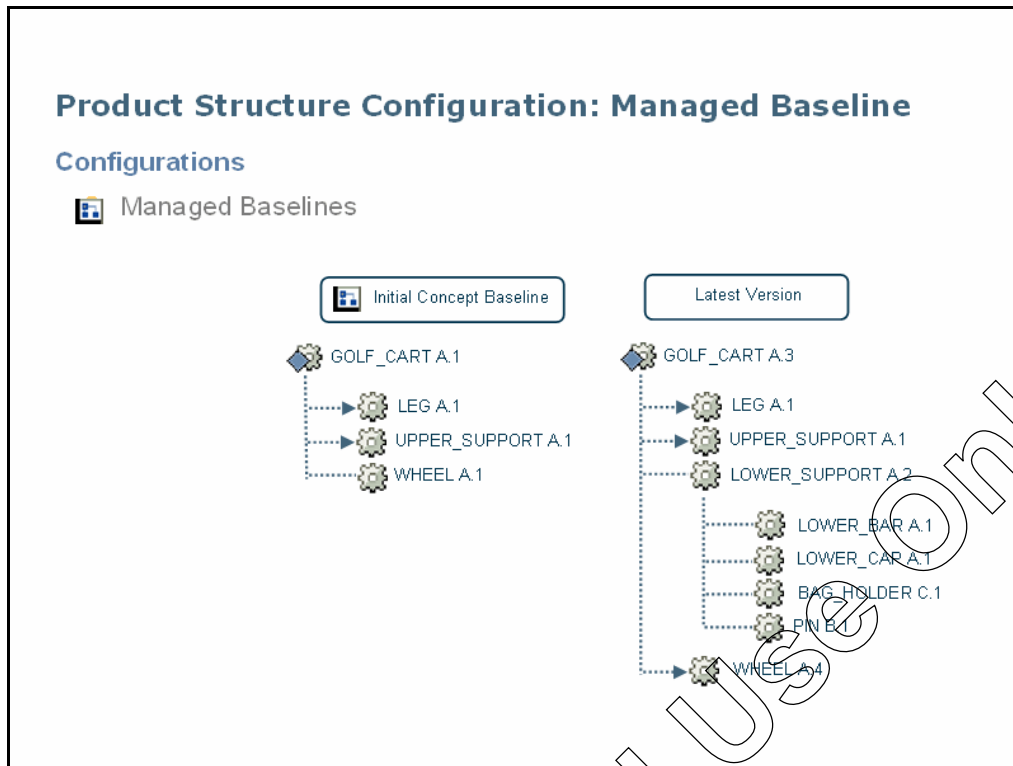
PDMLink also enables you to manage many different configurations of the same product structure. These advanced options may not be used by every organization.

The first of these possible configurations that is reviewed is the latest configuration.

You can filter the product structure to include objects by state. The latest configuration, when filtered by state, enables you to view only the parts that are released.

A product may have more than one view of the latest configuration using multiple current view versions of a product. For example, a product may appear in a design view and be rearranged in a manufacturing view.

In the example of the golf cart in the slide above, the golf cart was initially created in Design view. Then, when it was moved to the manufacturing floor, a few more independently purchased components, the lubricant and the golf cart bag were added for a Manufacturing view. The manufacturing plant uses the Manufacturing view to assemble and package the physical components of the golf cart. These extra components can also be added to the design view, but then the design view drives the manufacturing process.



Product Structure Configuration: Managed Baseline

Another type of configuration is the managed baseline. A managed baseline is like a snapshot of a product at a specific point in time. Once you have created a baseline, you can still add parts and documents that reflect the product structure.

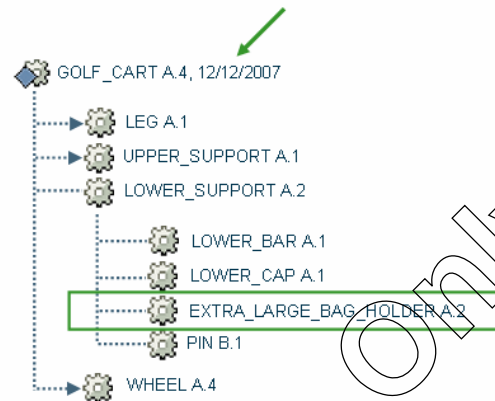
In the example on this slide, an Initial Concept Baseline was created when the golf cart was created. If the golf cart changes, you can create a new baseline and still return to the earlier Initial Concept Baseline configuration at any time.

Product Structure Configuration: Effectivity

Configurations

Effectivity

- Date
- Serial number
- Lot number



Product Structure Configuration: Effectivity

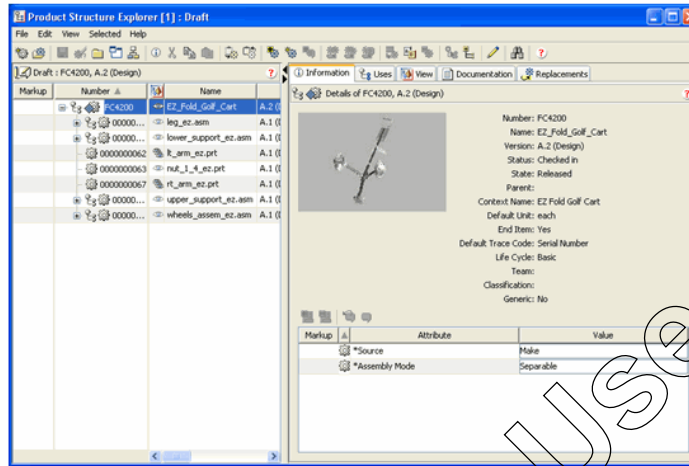
Another possible configuration is created using effectivity. Effectivity is the planned date, lot, or serial number at which old part versions are replaced with new part versions in production. In this example, a date is set to show when changes to the product structure are occurring. By setting effectivity, you can let others know of changes that are coming in the future. Effectivity is set as part of the change process.

Managing Product Structures

Editing Tools

- Browser-based Product Structure Page
- Product Structure Explorer

Product Structure Explorer



Managing Product Structures

You can browse and edit product structures by using the browser-based product structure page or the Product Structure Explorer. These can be used for the following:

- The product structure page displays a hierarchical representation of the parts and other lower-level end items that make up the end item being viewed. Because a product structure can be expanded and collapsed, you can edit and navigate through the product structure page, viewing parts and assemblies, and expanding the assemblies to view the component parts.
- The Product Structure Explorer provides advanced configuration management functionality for creating and editing product structures and also enables integrated visualization capabilities. The left pane shows the expandable product structures. The right pane shows either a table with details and relationships, or a visualization of the object selected in the left pane.

Summary

After successfully completing this module, you should know how to:

- Describe the role of product structures in configuration management.
- Describe the objects that define product structures.
- Describe the process of creating the product structure objects using part-centric design and CAD-centric design.
- Describe how object masters and versions define and manage the product structure.
- Describe the tools available to manage product structures.

For Educational Use Only

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. An end item may contain...
 - A - other parts.
 - B - other end items.
 - C - A and B.
2. Which of the following is NOT a valid product structure configuration?
 - A - Latest
 - B - Baseline
 - C - Current
 - D - Effectivity
3. If end item and part versions matching the required configuration specification are found then...
 - A - the latest View Version is displayed.
 - B - the latest Version is displayed.
 - C - the part masters and end items masters are displayed.

For Educational Use Only

Creating Product Structures

Introduction

In this module, you use the CAD-centric design approach to create product structures. Moreover, you explore various methods of associating enterprise parts with CAD documents.

Objectives

After successfully completing this module, you will be able to:

- Identify the CAD-centric approach for creating product structures.
- Describe how to create parts and end items manually.
- Associate CAD documents and parts.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

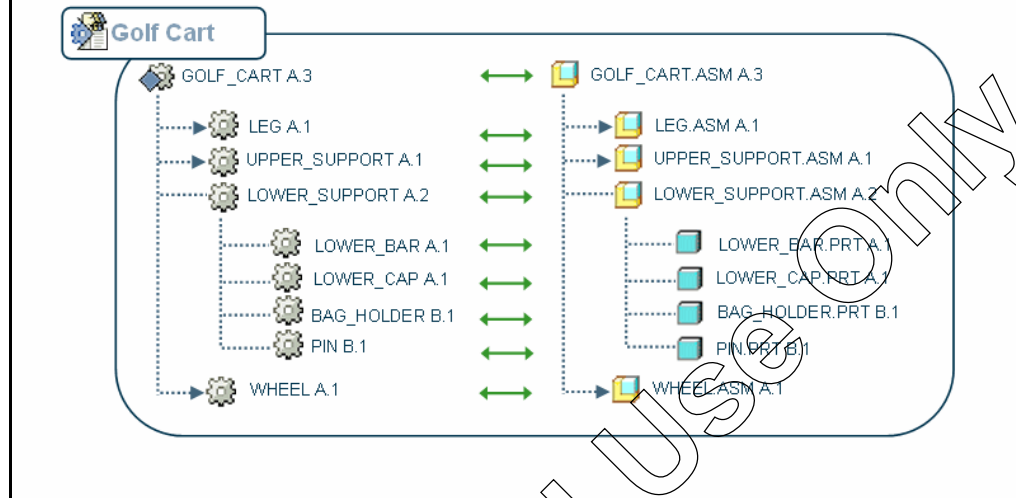
You may use the space below to take your own notes.

For Educational Use Only

Creating Product Structures

CAD-centric design

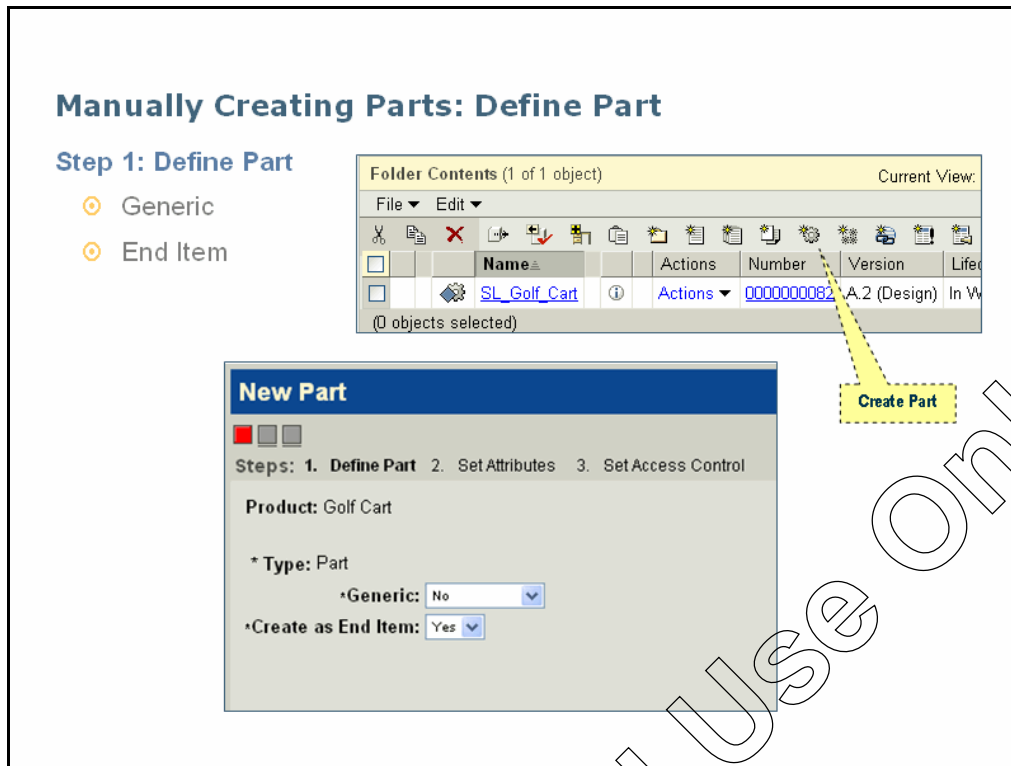
- CAD structure drives the product structure



Creating Product Structures

In the CAD-centric approach, Windchill PDMLink 9.0 can automatically build product structures based on an existing CAD document structure.

You can also create a few parts manually and then associate them with the existing CAD documents. In a typical CAD-centric design strategy, the top-level assembly CAD document is linked with the top-level end item object. The end item is created manually and then associated with the top assembly CAD document.

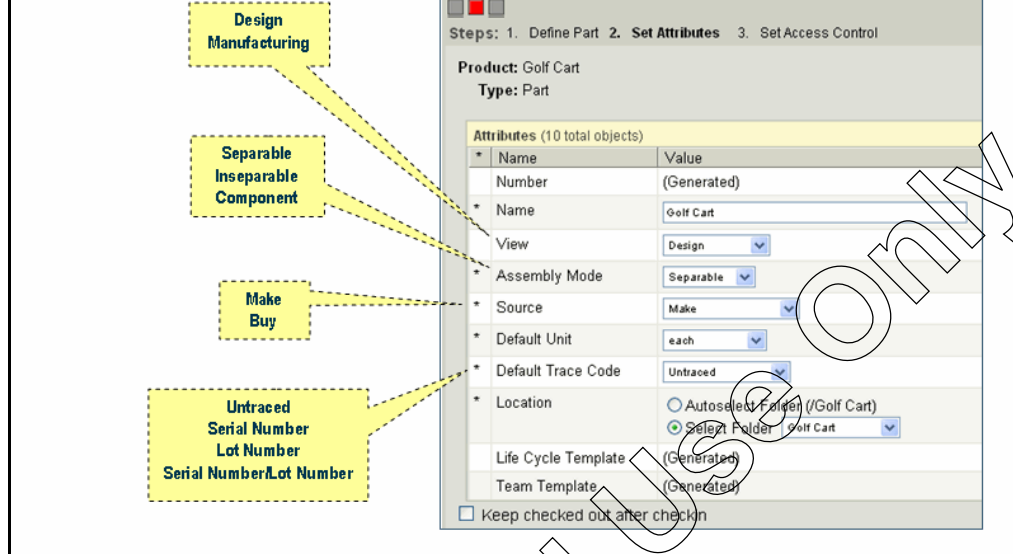


Manually Creating Parts: Define Part

You can use the following procedure to create a new part by clicking the new part icon on the folder content toolbar, or by selecting the New Part option from the Actions list on the information page. The New Part window divides the creation of the part into the two steps: Define Part and Set Attributes. In the first step, you identify part attributes that will determine and govern its behavior. For example, you decide whether the part is a generic part. In addition, you can also indicate if the part should be created as an end item.

Manually Creating Parts: Set Attributes

Step 2: Set Attributes



New Part

Steps: 1. Define Part 2. **Set Attributes** 3. Set Access Control

Product: Golf Cart
Type: Part

Attributes (10 total objects)

Name	Value
Number	(Generated)
Name	Golf Cart
View	Design
Assembly Mode	Separable
Source	Make
Default Unit	each
Default Trace Code	Untraced
Location	<input type="radio"/> Autoselect Folder (/Golf Cart) <input checked="" type="radio"/> Select Folder (/Golf Cart)
Life Cycle Template	(Generated)
Team Template	(Generated)

☐ Keep checked out after checkin

Manually Creating Parts: Set Attributes

The Set Attribute page provides the descriptive attributes associated with the part. By default, the values for certain attributes, such as Number, Life Cycle Template, and Team Template are generated automatically. However, the administrators can change the default software behavior in accordance with the company policies.

The Name attribute can be up to 60 characters long.

View (such as design or manufacturing) can be associated with the new part. Select a specific view from the drop-down list or leave the field blank to specify that no view is assigned initially. (Note: View is not applicable for serial numbered parts.)

The Assembly Mode attribute can take one of three values: Separable, Inseparable, or Component. A separable part is an assembly that can be disassembled safely. An inseparable is an assembly that, once built, can not be disassembled safely. A component parts is a component in an assembly.

The Source attribute indicates whether the part is to be made internally or purchased externally.

The Default Trace Code indicates if the part is traceable and, if so, how it is traceable. An untraced part is not traceable. This is also the default selection. The part is traceable by serial number, lot number, or both.

Associating CAD Documents and Parts

There are two basic types of associations between CAD documents and parts:

- Active (primary) association
 - Such as a Pro/ENGINEER model to a part.
- Passive (secondary) association
 - Such as a drawing to a part.

Associating CAD Documents and Parts

When a CAD document is related to a part, the CAD document is said to "describe" the part. A CAD document can be associated to parts so it can describe the associated part.

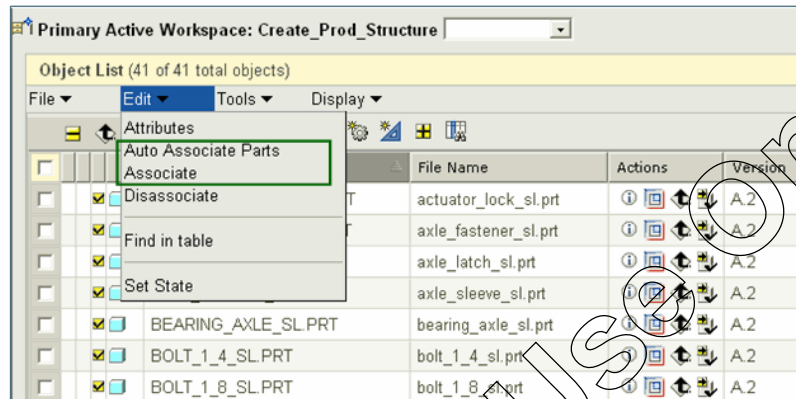
Active association (or active link) - Refers to a primary association (for example, that of a Pro/ENGINEER model to a part).

Passive association (or passive link) - Refers to a secondary association (for example, that of a drawing to a part) wherein the CAD document describes the part, but does not need to be included in the product structure.

Associating CAD Documents and Parts: Methods

Two Methods:

- Associate - Associates an existing Windchill part to a CAD document
- Auto Associate – Finds and associates existing parts or auto-creates and associates parts to CAD documents



Associating CAD Documents and Parts: Methods

If enterprise parts (intended to correspond to the CAD documents) have already been created in Windchill, the Associate command enables you to select a CAD document and then search or browse for the appropriate enterprise part to associate to it. The Associate command also enables you to start with a part and locate an appropriate CAD document.

The Auto Associate Parts command enables you to automatically locate and associate an existing part to a CAD document, or create a new part and associate it to the CAD document if no matching part currently exists. This functionality operates according to several conditions, and is accomplished using the Auto Associate Parts page. For a successful association, the document must be checked out and have no existing associations, and the part must be checked out.



The exact manner in which the part is searched for, created, named, and numbered depends on preferences set by a site administrator. For more information, see the Windchill System Administrator's Guide.

Viewing Product Structure

The product structure mirrors the Pro/ENGINEER model tree structure for the assembly.

Product Structure					
<div> Copy Add to Project Save As Promote Move Expand One Expand All Collapse Show Documents Hide Documents Show Replacements Hide Replacements Add to Baseline Show Occurrences </div>					
	Number		Actions	Version	Name
	0000000082		Actions	A.2 (Design)	SL_Golf_Cart
	GOLF_CART_SL_ASM		Actions	A.3	golf_cart_sl.asm
	0000000059		Actions	A.1 (Design)	leg_sl.asm
	LEG_SL_ASM		Actions	A.2	leg_sl.asm
	0000000064		Actions	A.1 (Design)	lt_arm_sl.prt
	LT_ARM_SL_PRT		Actions	A.2	lt_arm_sl.prt
	0000000065		Actions	A.1 (Design)	nut_1_4_sl.prt
	NUT_1_4_SL_PRT		Actions	A.2	nut_1_4_sl.prt
	0000000069		Actions	A.1 (Design)	rt_arm_sl.prt
	RT_ARM_SL_PRT		Actions	A.2	rt_arm_sl.prt
	0000000077		Actions	A.1 (Design)	upper_support_sl.asm
	UPPER_SUPPORT_SL_ASM		Actions	A.2	upper_support_sl.asm
	0000000081		Actions	A.1 (Design)	wheels_assem_sl.asm
	WHEELS_ASSEM_SL_ASM		Actions	A.2	wheels_assem_sl.asm

Viewing Product Structure

By creating enterprise parts and associating them to the CAD documents that contain the Pro/ENGINEER files as primary content, you create a product structure, or a hierarchy of enterprise parts in the PDM system, that comprise an end item. The product structure mirrors the Pro/ENGINEER model tree structure for the assembly. You also have the option to display or hide the corresponding CAD documents in the product structure.

Lab Exercises

Exercise 1: Associating CAD Documents with Windchill Parts

Objectives

After successfully completing this exercise, you will know how to:

- Use the auto associate action to create parts and product structures.
- Manually associate the assembly CAD document with an end item.

Scenario

In this exercise, you again take the role of John Evans.


John needs to create parts and a product structure for the Super Lite Golf Cart product. John uses the auto associate action to create the parts and product structure from the CAD document structure. Finally, John associates the golf cart assembly CAD document with the golf cart end item.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Using a standalone browser, log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the Overview page of the Home major tab.


Task 1. Add components to the workspace.

1. Select the **Workspaces** minor tab to access the workspaces.
2. Click the **SL Golf Cart** workspace to open the workspace.
3. In the workspace toolbar, click the **Add objects to workspace** icon  to add contents to the workspace.
4. Select the **Browse** option to locate the objects.
5. Click the **Location** drop-down menu to view the available contexts
6. Select **Super Lite Golf Cart**.
7. Click the **Go...** button to view the contents of the Super Lite Golf Cart product.
8. Click the **CAD Models** folder to open the folder.
9. Click the lower part of the inner scroll bar to scroll down and view the golf cart assembly CAD document.
10. Select the **golf_cart_sl.asm** check box.
11. Click **OK** at the bottom of the page to add the object to the workspace.
12. In the Add to Workspace window, click **OK** to accept the default object collection rules and complete the process.


Task 2. Auto associate parts and CAD documents.

1. In the workspace, select the **Select all rows** check box.
2. Clear the check box for the GOLF_CART_SL.ASM CAD document.
3. Click the **Edit** drop-down menu in the workspace menu bar.
4. Select **Auto Associate Parts** to automatically create and associate parts with the CAD documents.
5. Click the lower part of the scroll bar to scroll down.
6. Click the **OK** button to create and associate parts with CAD documents.


Task 3. Create a new end item to represent the top-level component.

1. In the Object List table toolbar, click the **New Part** icon  to create a new Windchill end item.
2. Click the **Next** button to go to the Define Part step window.
3. In the New Part window, click the **Create as End Item** drop-down menu.
4. Select **Yes** to indicate that the part will be an end item.
5. Click the **Next** button to go to the next step window.
6. In the Number field, type **FC1400**.
7. Type **SL_Golf_Cart** in the Name field.
8. Accept all other default values and click **Finish** to create the end item.
9. In the Confirmation dialog box, click **OK** to acknowledge the message.

Task 4. Manually associate End Item and top-level golf cart assembly CAD document.

1. In the workspace, select the check box for the FC1400 end item object. (Scroll down, if necessary.)
2. Select the check box for the GOLF_CART_SL.ASM CAD document.
3. Click the Workspace **Edit** drop-down menu to view the available options.
4. Select **Associate** to associate both object.
5. In the Associate to Part page, click **OK** to associate the assembly CAD document with the end item.
6. Select the **Select all rows** check box.
7. Click the **Check In** icon  on the workspace toolbar to check in all objects.
8. Click the **Current View** drop-down menu to view the available selections.
9. Select **All** to view all objects.
10. On the Check In page, select the **Select all rows** check box.
11. Click the **Edit** drop-down menu.
12. Select **Set for Check In** to include all CAD documents in the check in process.
13. Click the lower part of the scroll bar to scroll down and reach the end of the page.
- 14.
15. Click the **Next** button to view additional check in options.
16. On the Check In Set Options step window, select **Remove from Workspace** check box to remove all objects from the workspace after check in.
17. Click **Finish** to complete the check in process.

Task 5. View the Super Lite Golf Cart product structure in PDMLink.

1. Select the **Folders** minor tab to view the folders.
2. In the left pane, select the **CAD Models** folder to display the contents.
3. Click the lower part of the scroll bar to scroll down and view the SL_Golf_Cart (FC1400) end item.
4. Click the **View information** icon  next to the SL_Golf_Cart end item to view the details.
5. Click the lower part of the scroll bar to scroll down to view the product structure.
6. In the Product Structure table, select the **Select all rows** check box.
7. Click the **Show Documents** link in the Product Structure toolbar to view the corresponding CAD documents.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Identify the CAD-centric approach for creating product structures.
- Describe how to create parts and end items manually.
- Associate CAD documents and parts.

For Educational Use Only

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. A passive association between a CAD document and a part refers to a secondary association, such as...
 - A - a model to a part.
 - B - a drawing to a part.
 - C - A and B.
 - D - none of the above.
2. Which statement is true about the Auto Associate Parts feature?
 - A - The Auto Associate Parts command enables you to automatically locate and associate an existing part to an end item, or create a new part and associate it to the end item if no matching part currently exists.
 - B - The Auto Associate Parts command enables you to automatically create a product structure based on the part-centric approach.
 - C - The Auto Associate Parts command enables you to automatically locate and associate an existing part to a CAD document, but it does not create a new part and associate it to the CAD document if no matching part currently exists.
 - D - The Auto Associate Parts command enables you to automatically locate and associate an existing part to a CAD document, or create a new part and associate it to the CAD document if no matching part currently exists.
3. Besides manually creating a Windchill part, which other method can you use to create a Windchill part?
 - A - Associate feature
 - B - Auto Associate Part feature
 - C - Auto Create Part feature
 - D - All of the above

For Educational Use Only

Introduction to Product Configuration Management

Introduction

This module introduces you to many of the more complex product structure configuration options, and provides you with an overview of how they can be used. Windchill PDMLink 9.0 enables you to manage many different configurations of the same product structure. This powerful and flexible capability is complex, both because of the needs of product designers and manufacturers, and because of the intricacy that multiple product configurations can introduce.

Objectives

After successfully completing this module, you will be able to:

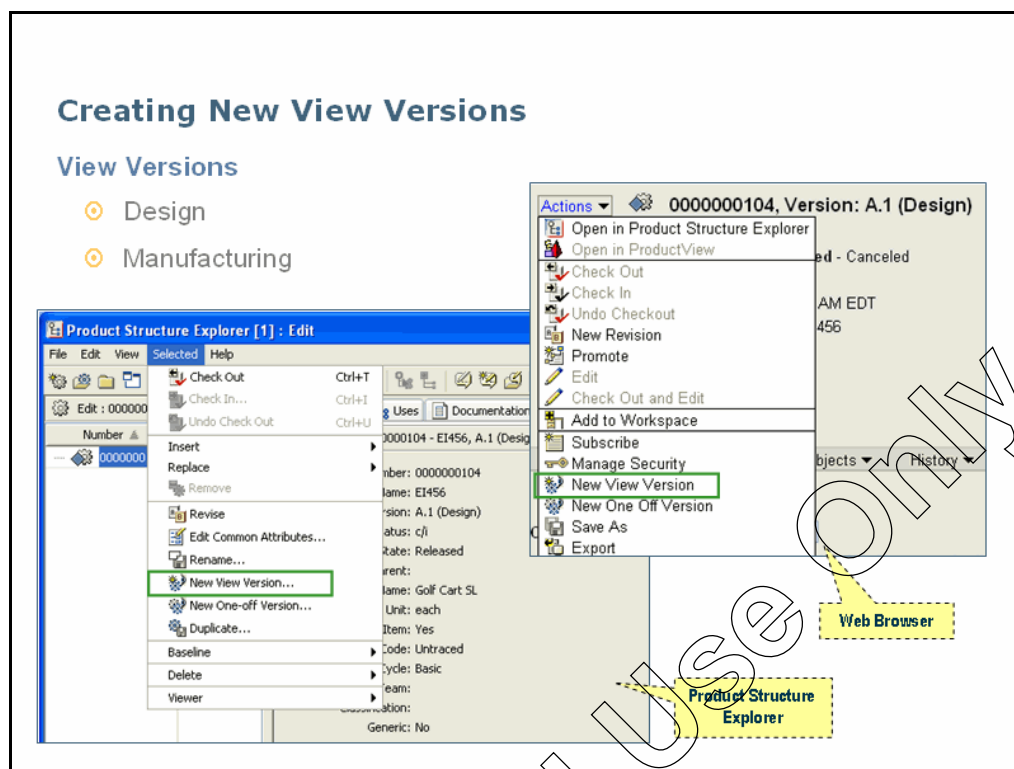
- Create new view versions.
- Create managed baselines.
- Describe bill of materials (BOM) notes.
- Explore end item configurations and instances.
- Define part occurrences.
- Describe the reference designator processing.
- Identify part incorporation and allocation.
- Add replacement parts.
- Identify general configuration management steps.
- Import and export BOM data using Microsoft Excel spreadsheet.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

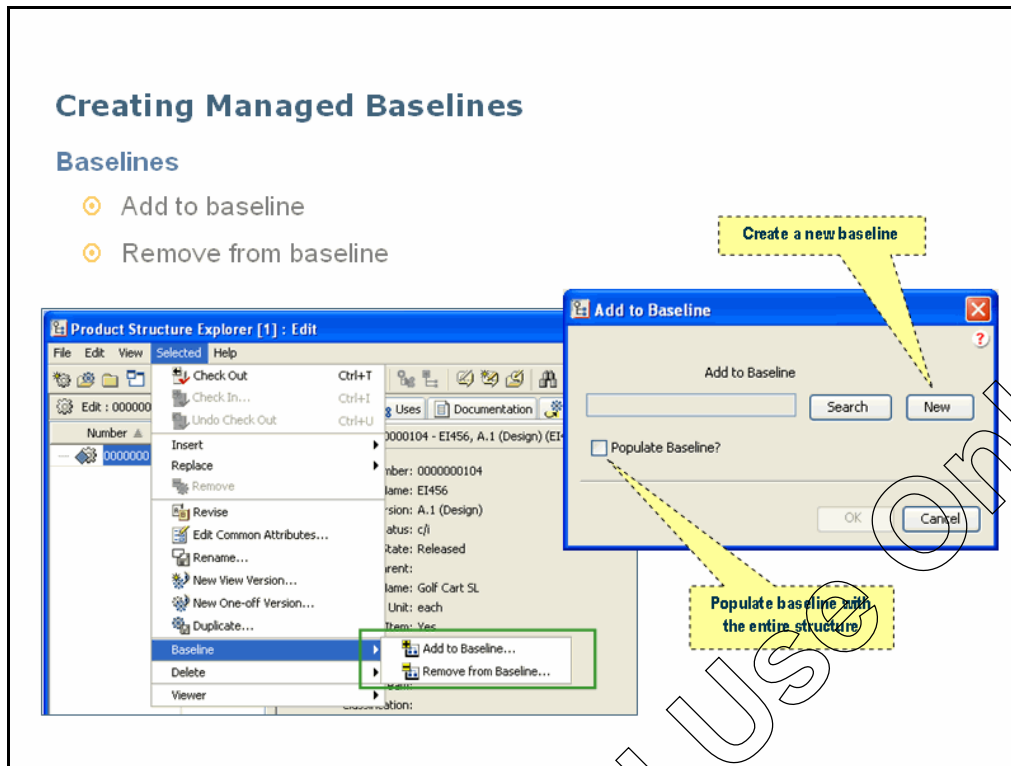
For Educational Use Only



Creating New View Versions

A product may have more than one view of the latest configuration using multiple current view versions of a product. For example, a product may display in a design view, and be rearranged in a manufacturing view.

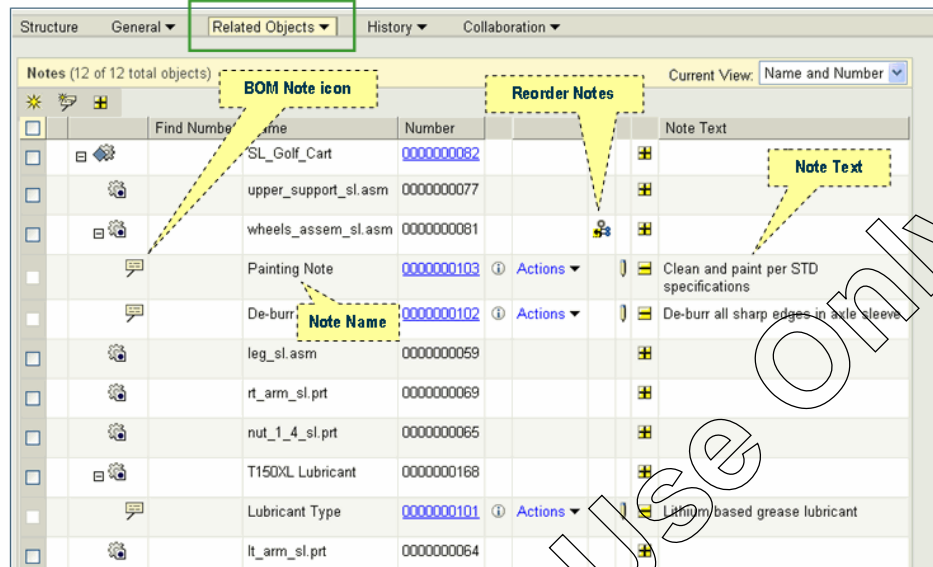
You can use either the Web browser or the Product Structure Explorer to create a new view version of a part or end item. Generally, a manufacturing view is created when the design view of a product is released. The Manufacturing department uses the manufacturing view of the product to assemble the product. They are able to make changes to the manufacturing product structure without affecting the design view.



Creating Managed Baselines

Another type of configuration is the managed baseline. A managed baseline is like a snapshot of a product at a specific point in time. Once you have created a baseline, you can still add parts and documents that reflect the product structure.

Bill of Materials (BOM) Notes

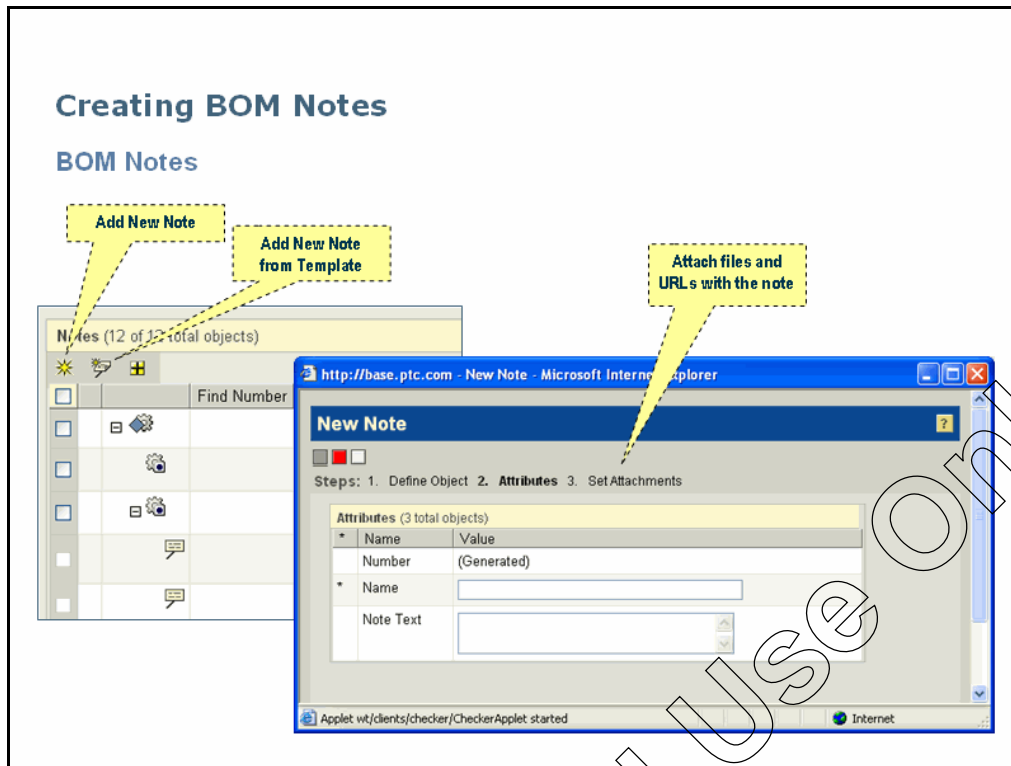


Find Number	Name	Number	Note Text
	SL_Golf_Cart	0000000082	
	upper_support_sl.asm	0000000077	
	wheels_assem_sl.asm	0000000081	
	Painting Note	0000000103	Clean and paint per STD specifications
	De-burr	0000000102	De-burr all sharp edges in axle sleeve
	leg_sl.asm	0000000059	
	rt_arm_sl.prt	0000000069	
	nut_1_4_sl.prt	0000000065	
	T150XL Lubricant	0000000168	
	Lubricant Type	0000000101	Lithium based grease lubricant
	lt_arm_sl.prt	0000000064	

Bill of Materials (BOM) Notes

A note enables the user to provide additional design information for a part in an assembly, providing a method for communicating important production information to the people in manufacturing.

A single note can be associated to one or more parts, and a single part may have zero or more notes associated to it. Notes can be created based upon a defined template, enabling the user to modify existing text and attributes, or you can create them by entering the desired text and defining the required attributes.



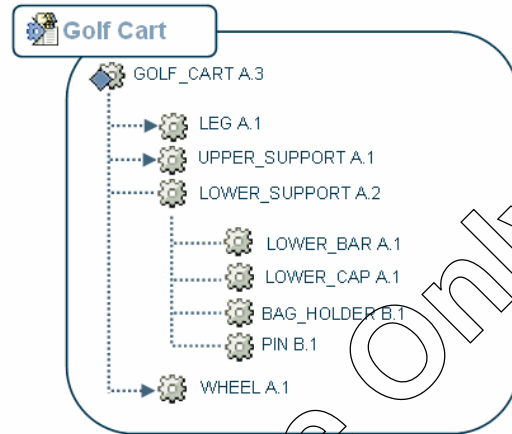
Creating BOM Notes

You can create a new note by clicking the new note icon on the toolbar, or by selecting New Note from the Actions list. You can also launch the wizard that creates a note from a template. Moreover, you can attach data files or URLs with the note.

Product Configuration Management Concepts

Definitions

- ⦿ End Item Configurations
- ⦿ End Item Instances
- ⦿ Occurrences
- ⦿ Serialized Parts
- ⦿ Allocation
- ⦿ Incorporation



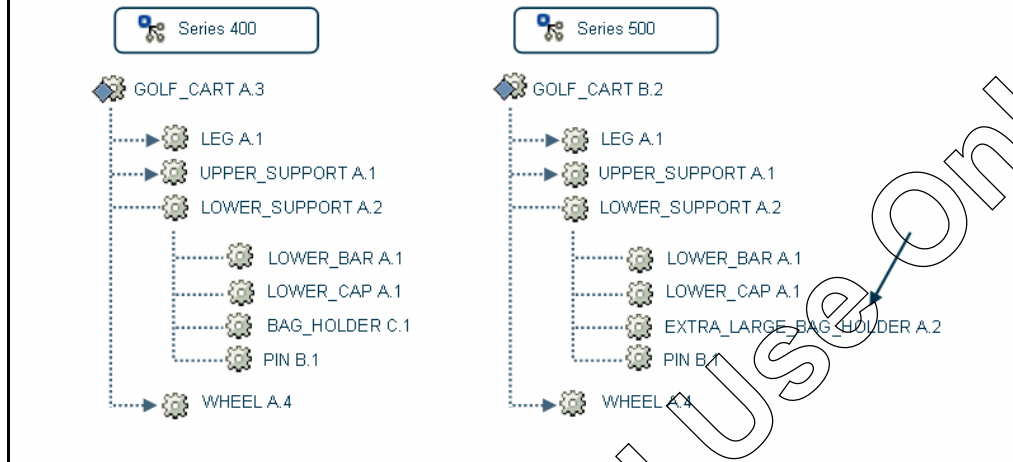
Product Configuration Management Concepts

This slide lists the building blocks and concepts that enable you to manage multiple configurations of an end item. In the subsequent sections, we will explore these concepts in detail.

End Item Configurations

Definition

- ⦿ A “baseline” of part versions that represents the way a product has been, or will be built.



End Item Configurations

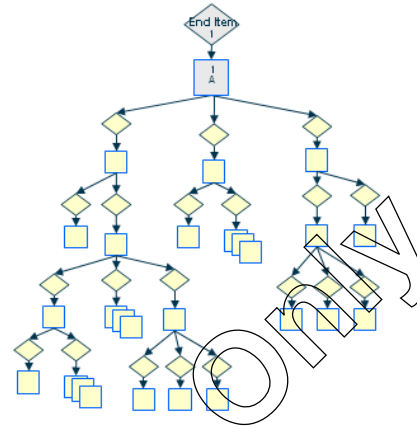
An end item configuration identifies the versions of parts used to build the end item as it is provided to customers.

In this slide's example, after the golf cart was designed, an end item configuration, Series 400, was created to manufacture the golf cart for a certain period of time. Design continued after that point, and a newer end item configuration, Series 500, was created and used for subsequent manufacturing.

End Item Configurations: Example

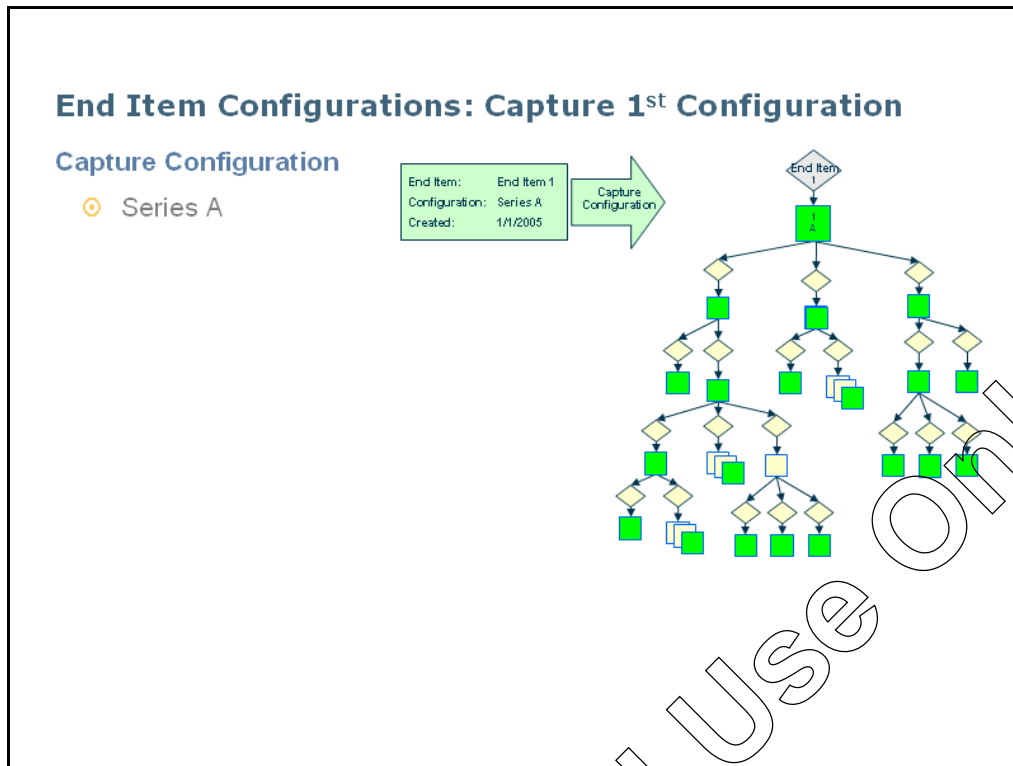
Example

- ⦿ Schematic representation of the product structure
- ⦿ Contains part masters and versions
- ⦿ Configuration Specification: Latest Version, Released State, Design View



End Item Configurations: Example

Above is a schematic representation of the structure of a simple Product, end item 1. The diamond shaped objects represent the end item and part masters and the square objects the end item and part versions. The structure is sorted using a "Latest Version, Released State, Design View" configuration specification setting.



End Item Configurations: Capture 1st Configuration

The configuration managers will, at some point in time, want to capture a particular configuration that they are planning to build.

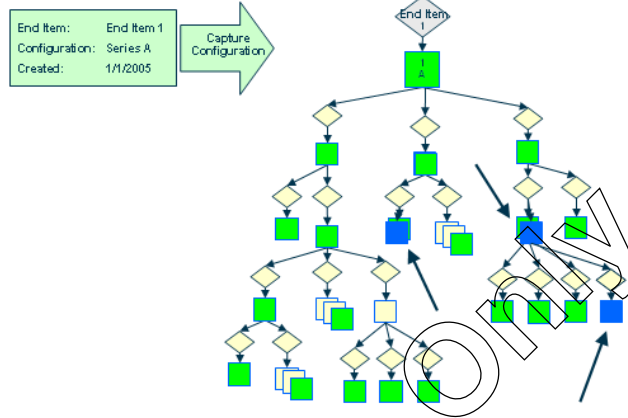
They create the end item configuration and call it Series A of End Item 1. Notice that it records the specific date when it was captured.

The captured end item configuration records a specific selection of part versions using the existing configuration specification sorting. The green part versions have been made part of the configuration, "Series A."

End Item Configurations: Structure Changes

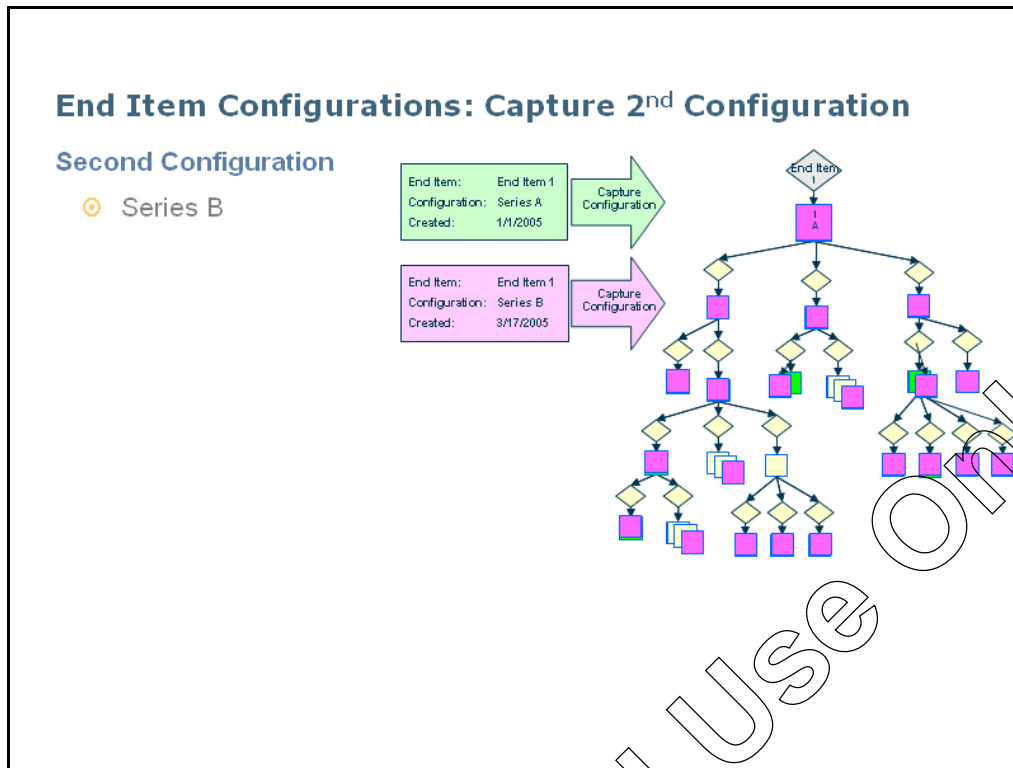
Structure Changes

- New parts and versions



End Item Configurations: Structure Changes

As time goes on, designers may make changes to the structure. Notice that the green versions stay the same, but changes are made to create new parts and part versions within the structure.



End Item Configurations: Capture 2nd Configuration

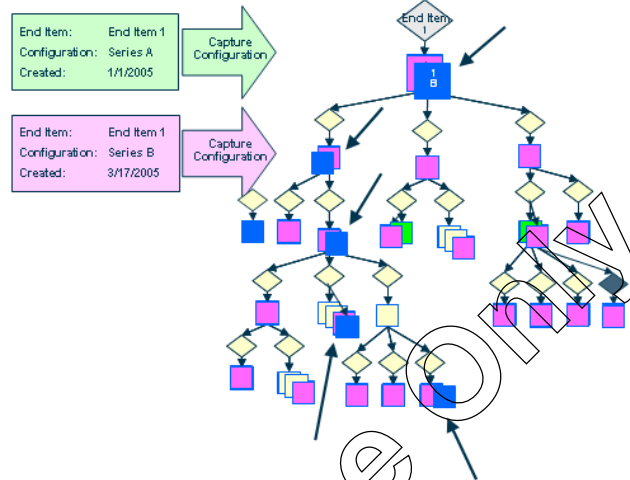
After these changes are finished, the Configuration Managers decide to create a new configuration, Series B.

The product structure is again sorted by the “Latest, Released, Design View” configuration specification and the new end item configuration Series B is populated with all the latest versions including the two resulting from ongoing engineering changes. Notice that in the changed areas there are green part versions still showing. They were different in Series A because they were changed by design and are no longer the most recent.

End Item Configurations: Additional Changes

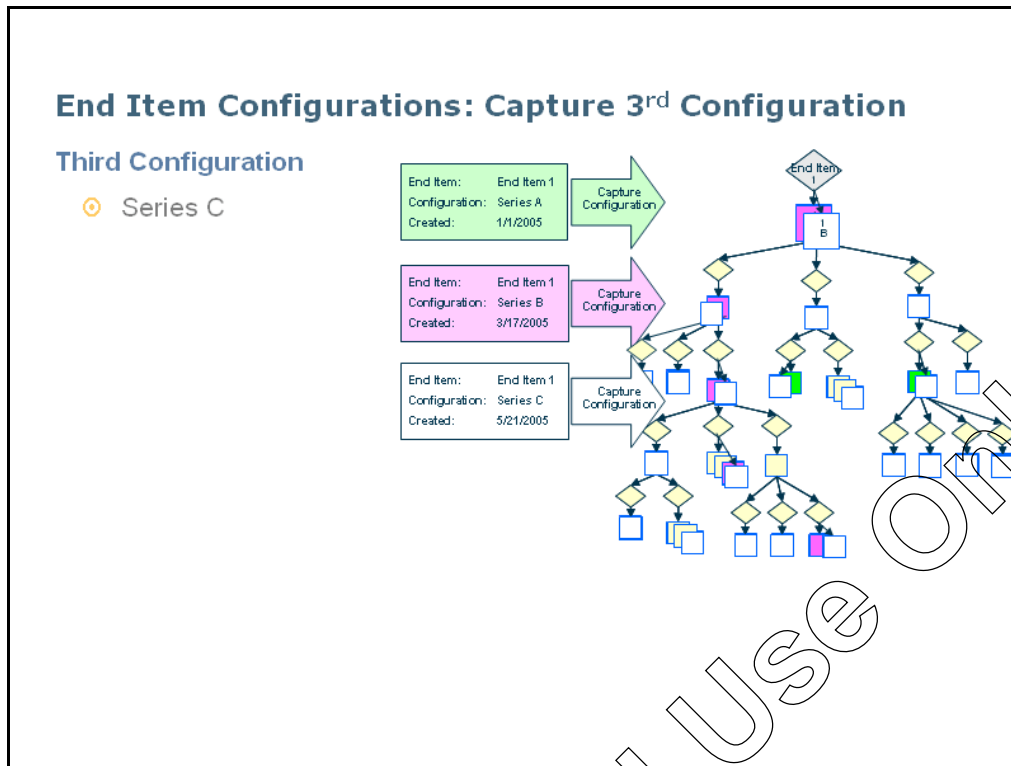
Additional Changes

- New parts and versions



End Item Configurations: Additional Changes

Changes happen again in our example, as indicated by the changed blue boxes.



End item Configurations: Capture 3rd Configuration

Again an end item configuration is created - Series C.

Configurations are created periodically from the latest released part versions in the product's structure. New configurations are not created every time an engineering change is made, but only when significant change to the overall structure has occurred. Ongoing product improvements and design changes resulting from the demands of new customers determines when and how often new configurations are created.

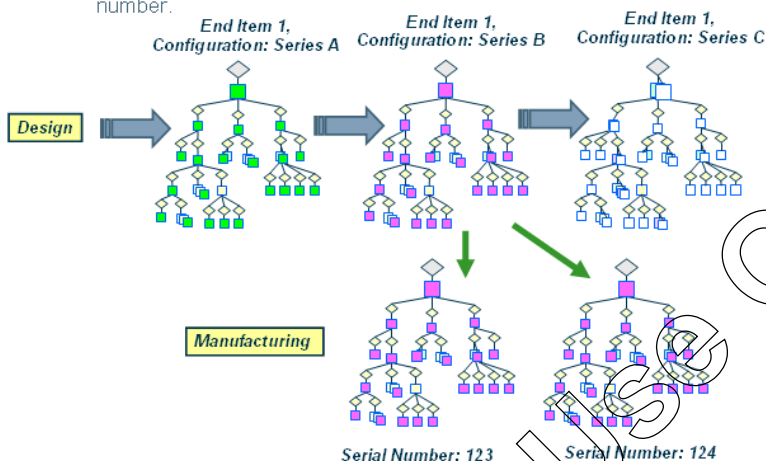
Configurations can also be used to capture the unique content of customized products without affecting standard product configurations.

End Item Instances

Definition

End Item Instance

- A manufactured product built to a specified configuration and identified by a serial number.



End Item Instances

An end item instance is a serialized copy of a product. For example, while the Dirt Runner motorbike is an end item, the Dirt Runner motorbike, serial number 500 is an end item instance. The structure of end-items, sub-end items and parts defining an end item instance is independent of any other end item instance. In other words, the structure of an end item instance is a database record of changes to that particular serialized copy of the product. This is a powerful tool that is intended to address ongoing product service requirements.

As previously discussed, new configurations are created when significant changes to the designed product structure are completed. Our previous example showed three configurations: Series A, B, and C.

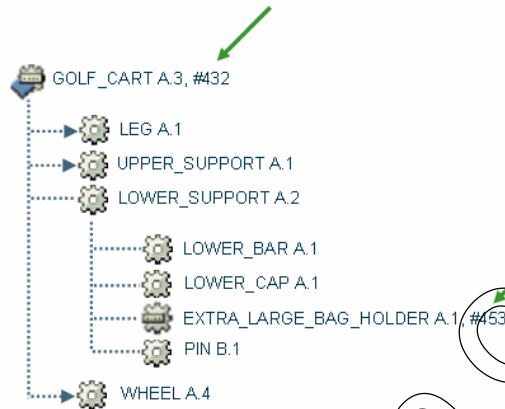
The manufacturing time line is proceeding in parallel to the design time line. At any time when an order is received from a customer, end item instances can be created from the most current configuration in effect.

This example shows two end item instances created from End Item 1, configuration Series B. The structures for each of these end item instances can be modified independently from the others and independently of the current changes being considered in engineering. The ability to create end item instances also enables you the flexibility to assign different versions of the same part to different usages within the configuration of the end item instance. This capability is sometimes referred to as "structure specific effectivity."

Serialized Objects: Example

Example

- End Item Instances
- Serialized Parts



Serialized Objects: Example

You can also track the serial numbers of individual parts (assemblies or components) that are not necessarily end items. In the example on this slide, PTC Sports wants to track each extra large bag holder that they manufacture and include in the golf cart, therefore they use a serialized part to represent it.

Continuing the example on this slide, presume that PTC Sports is also using a special material to manufacture the bag holder. The government wants to track each instance of the golf cart and the bag holders manufactured with this heavy duty material; this is accomplished by using serial numbers. Once the bag holder is built, the serialized part becomes a database record that can be used to track changes to that particular copy of the bag holder while it is in service (for example, if a broken bag holder is replaced).

Occurrences

Definition

- A specific usage of a part that may occur multiple times within an assembly

Occurrences

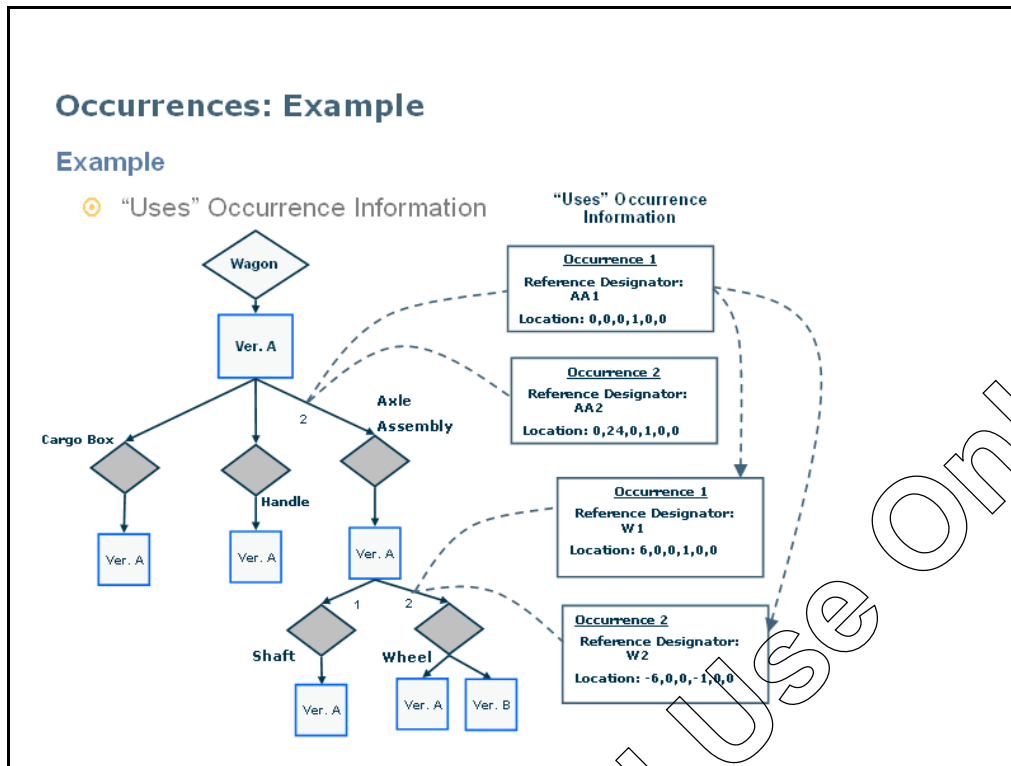
- Store unique information about the Occurrence
 - Reference Designator code
 - Geometric location information
- Record the replacement of parts in an End Item Instance
 - Record the replacement of specific usage of a part in an End Item Instance's configuration (Path Specific Effectivity).

Occurrences

In an assembly in which the quantity of a particular part is greater than one, an occurrence represents one of those usages. For example, if the Dirt Runner motorbike uses two tires, each of the tires is an occurrence. Occurrences make it possible to store information unique to a specific usage of a part within an assembly. They track specific information about each part's location, using information such as a reference designator or geometric location information.

For example, every component on a printed circuit board (PCB) carries a unique identifier called a "Reference Designator." If there are 4 resistors on a PCB they are individually labeled: R1, R2, R3, and R4. This label is useful for PCB manufacturing processes and must be captured in the Windchill product structure. This geometric positioning information on part occurrences will also make it possible to assemble "virtual" images of products from different CAD systems that have never been modeled together in a single CAD system.

Another use of occurrences is to provide the ability to replace a specific occurrence of a part version with a later part version. For example, suppose there are 25 hydraulic pumps of the same part number and version in a complex product. One of the pumps fails and must be replaced, but the other pumps are working and can remain in service. A later version of the pump will be used as the replacement.



Occurrences: Example

Occurrences make it possible to identify a specific pump as the latest version. This capability is sometimes referred to as "path specific effectivity." This is crucial information for maintaining accurate records of field retrofit maintenance operations.

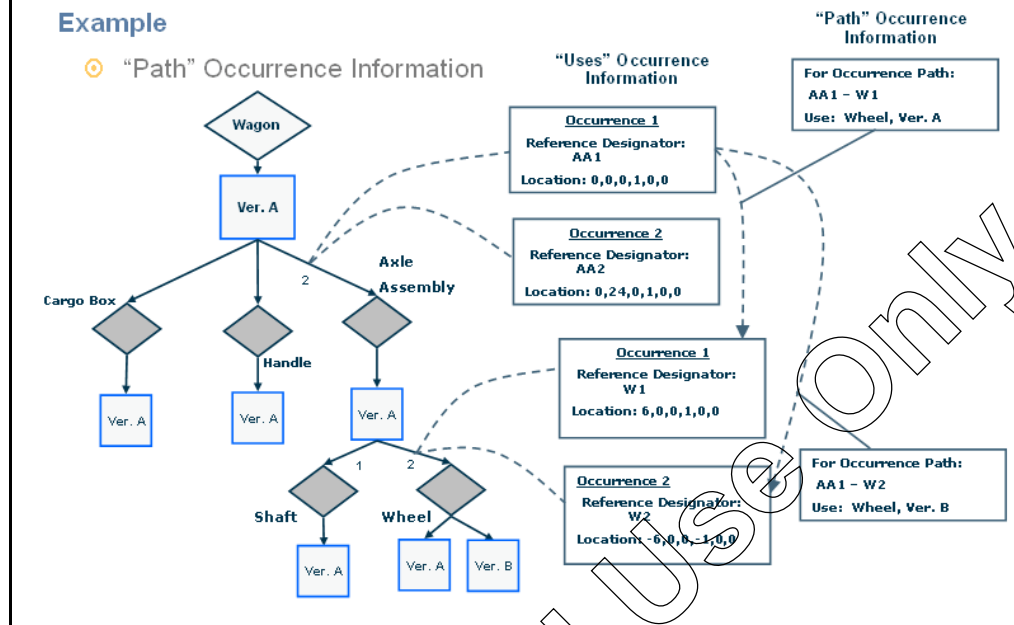
For example, this simple structure says the Wagon product uses 1 Cargo Box, 1 Handle, and 2 Axle Assemblies. Each Axle Assembly uses 1 Shaft and 2 Wheels. Notice that there is only one relationship between Axle Assembly and Wheel with a quantity of 2 on the link. In this model, the configuration specification can only select version A or B of the Wheel; therefore regardless of which of the 2 Axle Assemblies is expanded, it can either show version A or B of the Wheel. An Axle Assembly cannot be expanded to show version A of the Wheel on the left and B on the right.

Occurrences add the information required to uniquely identify each of the usages of Wheel in this assembly. Uses Occurrence information is unique with respect to the next immediate parent assembly part. For example, for the usage of Wheel within Axle Assembly there are two Uses Occurrences, one named W1 and one named W2.

Likewise, for the usage of Axle Assembly within Wagon Assembly there are two Uses Occurrences, one named AA1, and one named AA2. The names (Reference Designators) of each of these parts within their next higher-level assembly are an example of Uses Occurrence information.

Occurrences: Example (cont.)

Example



Occurrences: Example (cont.)

How does the user identify the right wheel on the back axle?

Because the structure is more than one level deep, it is necessary to have additional information associated to a “path” through the structure. This is referred to as Path Occurrence information.

Focus on the front axle assembly for the wagon, labeled AA1. There are two wheels on either end of the axle labeled W1 and W2. The right wheel is as it was when the wagon was built; it uses version A of the Wheel.

However, the left wheel (W2) on the front axle assembly (AA1) has been replaced and uses version B. The usage of either version of the wheel, with respect to the end item instance associated to the Wagon, is captured on the path from the next higher product to the specific wheel. (In other words, from Wagon, to Front Axle Assembly to the right or left wheel.)

Reference Designator Processing

Example

- Enter as a range
- Range validated against quantities
- Integrated with occurrences operations

Product Structure

Number	Actions	Version	Name	Context	State	Quantity	Reference Designator
0000000082	Actions	A.A.7 (Manufacturing)	SL_Golf_Cart	Golf Cart SL	In Work		
0000000059	Actions	A.1 (Design)	leg_sl.asm	Golf Cart	Released	1 each	
0000000064	Actions	A.1 (Design)	lt_arm_sl.prt	Golf Cart	Released	1 each	A1
0000000065	Actions	A.1 (Design)	nut_1_4_sl.prt	Golf Cart	Released	4 each	N1-N4
0000000069	Actions	A.1 (Design)	rt_arm_sl.prt	Golf Cart	Released	1 each	A2
0000000077	Actions	A.1 (Design)	upper_support_sl.asm	Golf Cart	Released	1 each	
0000000081	Actions	A.1 (Design)	wheels_assem_sl.asm	Golf Cart	Released	1 each	

Reference Designator Range

Reference Designator Processing

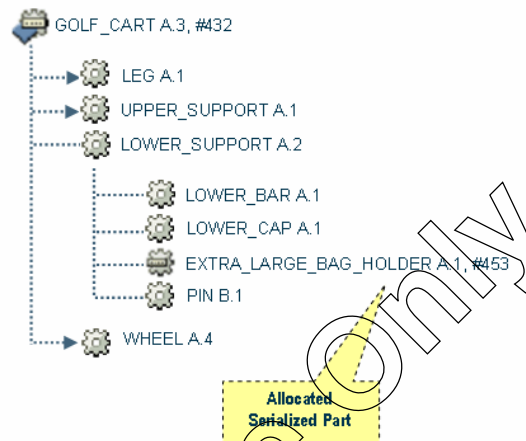
Windchill PDMLink provides the ability to assign and display reference designators on product structure occurrences individually or by using ranges.

You can type reference designators for multiple occurrences as a range, such as C1-C10. These ranges are validated against quantities and any mismatch is reported to the user. This rule is integrated with occurrences operations. In other words, deletion of an occurrence recalculates the reference designator range.

Incorporation

Definition

- The date when a new component or assembly is retrofit to an existing end item instance's configuration.



Incorporation

Incorporation is the date when a new configuration associated to an end item instance takes effect.

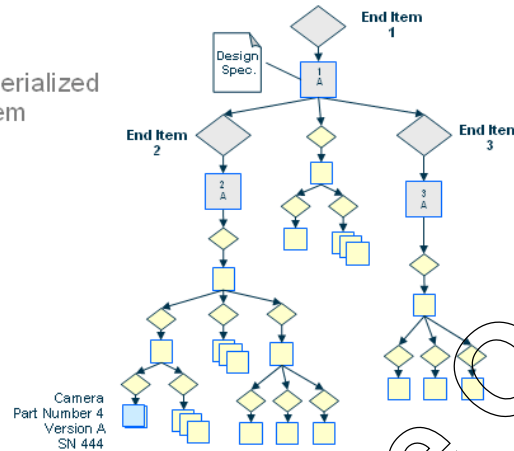
Suppose a modification is made to the structure of an end item instance. This modification would be captured as a new part version. A new configuration would then be created that contains the new part version. The end item instance would then be revised and made to reference the new configuration.

This method is used to track ongoing configuration changes to an end item instance that is in service.

Allocation

Definition

- Associating specific end item instances and serialized parts to an overall end item instance structure.



Allocation

Allocation is the process of associating specific end item instances and serialized products to each other. Allocation usually takes place starting from the bottom of the multi-level product assembly. A top-level end item instance is not completely defined until all of the serialized parts and end item instances are associated with it. Let's look at an example of allocation.

All of the previous examples of end item structures have had only one level of end items. This example shows three separate end items in a hierarchy of end items and parts. The gray diamond and squares represent end item masters and versions. The yellow diamonds and squares represent part masters and versions.

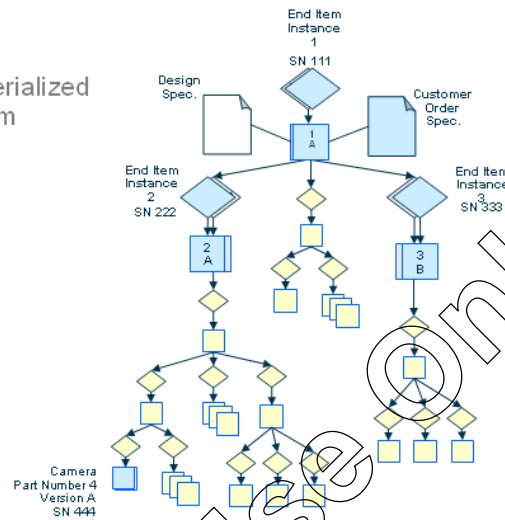
The process of allocation begins by allocating a serialized part to the next level end item.

In this example, the process begins by allocating the Camera serialized part to End Item Instance 2, serial number 222.

Allocation (cont.)

Definition

- Associating specific end item instances and serialized parts to an overall end item instance structure.



Allocation (cont.)

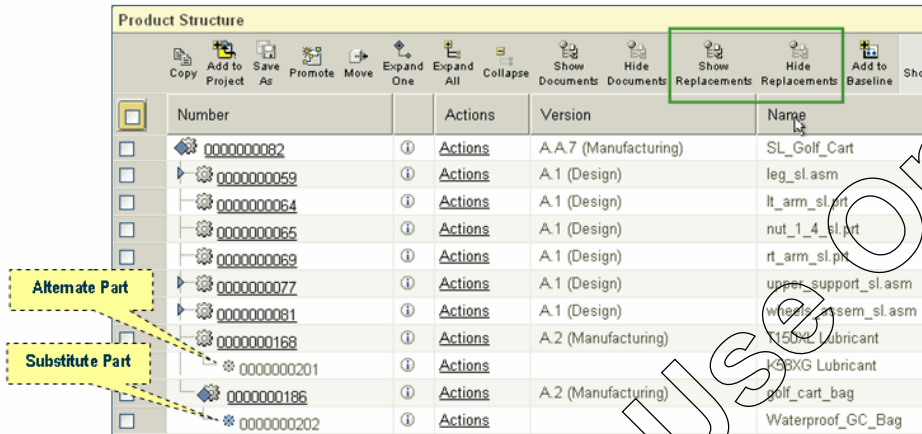
Next, End Item Instance 3, serial number 333, and End Item Instance 2, serial number 222, are allocated to End Item Instance 1, serial number 111.

At this point, the makeup of End Item Instance 1, serial number 111 is completely defined. The objects with serial numbers have been allocated within the product structure.

Replacement Parts

Replacement Parts

- Alternates
- Substitutes



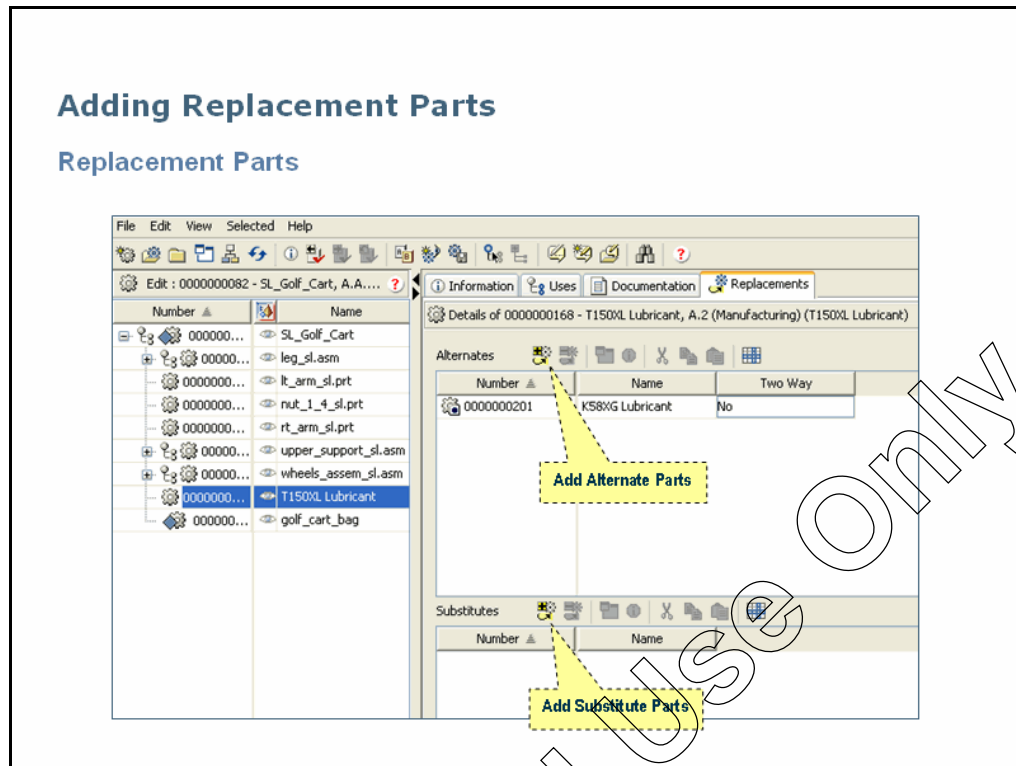
Number	Actions	Version	Name
0000000082	Actions	A.A.7 (Manufacturing)	SL_Golf_Cart
0000000059	Actions	A.1 (Design)	leg_sl.asm
0000000064	Actions	A.1 (Design)	lt_arm_sl.pt
0000000065	Actions	A.1 (Design)	nut_1_4_sl.pt
0000000069	Actions	A.1 (Design)	rt_arm_sl.pt
0000000077	Actions	A.1 (Design)	upper_support_sl.asm
0000000081	Actions	A.1 (Design)	wheels_assem_sl.asm
0000000168	Actions	A.2 (Manufacturing)	T150GL Lubricant
0000000201	Actions	A.2 (Manufacturing)	K&B&G Lubricant
0000000186	Actions	A.2 (Manufacturing)	golf_cart_bag
0000000202	Actions		Waterproof_GC_Bag

Replacement Parts

You can specify alternate and substitute parts for parts. An alternate for a part can replace a part in every product structure, as opposed to a substitute, which can replace a part only in a specific product structure.

Adding Replacement Parts

Replacement Parts



Adding Replacement Parts

This figure shows how you can add alternates and substitutes within a product structure using the Product Structure Explorer. This operation can also be performed from a Web browser.

Configuration Management Process

General Steps:

- Create the design structure.
- Create configurations for all traceable parts within the structure.
- Create Instances from configurations.
- Incorporate the bottom most instances.
- Allocate lower instances to higher level instances.
- Incorporate next higher level instances.

Configuration Management Process

The above slide lists the general recommended configuration management process which requires several steps. In the subsequent sections, we focus on each step in detail.

Step 1: Create Design Structure

Design Structure

Product Structure						
Copy Add to Project Save As Promote Move Expand One Expand All Collapse Show Documents Hide Documents Show Replacements Hide Replacements Add to Baseline Show Occurrences New Part Configuration						
<input type="checkbox"/>	Number	Actions	Version	Name	Context	Trace Code
<input type="checkbox"/>	0000000082	Actions	A.A.5 (Manufacturing)	SL_Golf_Cart	Golf Cart SL	
<input type="checkbox"/>	0000000059	Actions	A.1 (Design)	leg_sl.asm	Golf Cart	Untraced
<input type="checkbox"/>	0000000064	Actions	A.1 (Design)	lt_arm_sl.prt	Golf Cart	Untraced
<input type="checkbox"/>	0000000065	Actions	A.1 (Design)	nut_1_4_sl.prt	Golf Cart	Untraced
<input type="checkbox"/>	0000000069	Actions	A.1 (Design)	rt_arm_sl.prt	Golf Cart	Untraced
<input type="checkbox"/>	0000000077	Actions	A.1 (Design)	upper_support_sl.asm	Golf Cart	Untraced
<input type="checkbox"/>	0000000081	Actions	A.1 (Design)	wheels_assem_sl.asm	Golf Cart	Untraced
<input type="checkbox"/>	0000000167	Actions	A.1 (Manufacturing)	Golf Cart Bag	Golf Cart SL	Serial Number
<input type="checkbox"/>	0000000168	Actions	A.1 (Manufacturing)	T150XL Lubricant	Golf Cart SL	Untraced

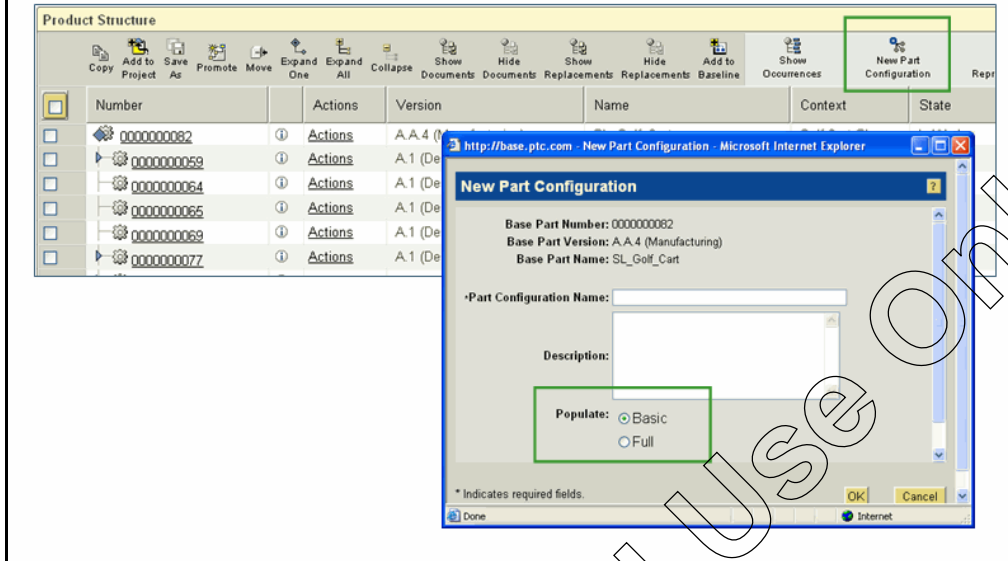
Traceable Part

Step 1: Create Design Structure

The first step requires that you create a design structure that has traceable parts. You can only create configurations for those parts or end items which are designated as traceable. The trace code can be a serial number, a lot number, or a combination of both.

Step 2: Create Configurations for Traceable Parts

New Part Configuration

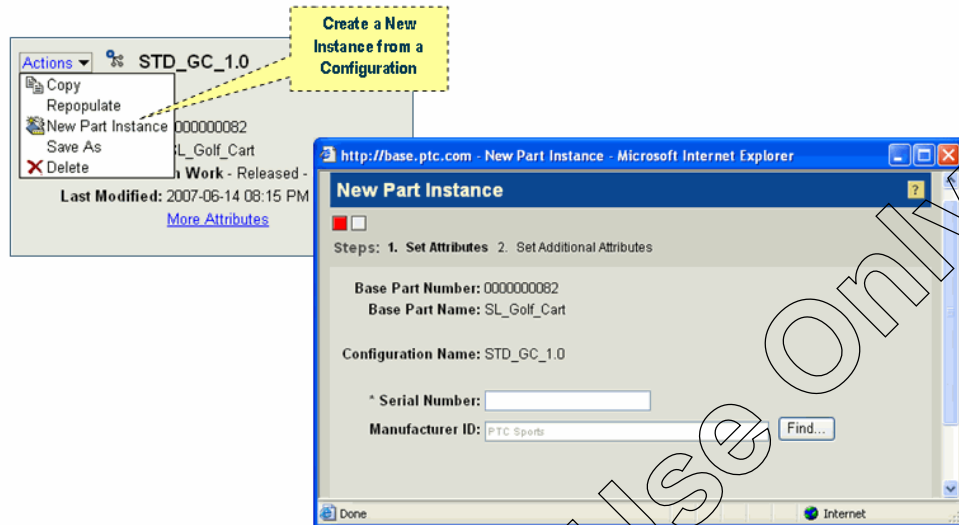


Step 2: Create Configurations for Traceable Parts

Next, create configurations for traceable parts. A part configuration requires a name and a description. Furthermore, a configuration can be of type basic or full. A basic configuration only includes the traceable parts in the structure. However, a full configuration will populate the entire structure, even if all subcomponents of the structure are not traceable.

Step 3: Create Instances from Configurations

New Part Instance

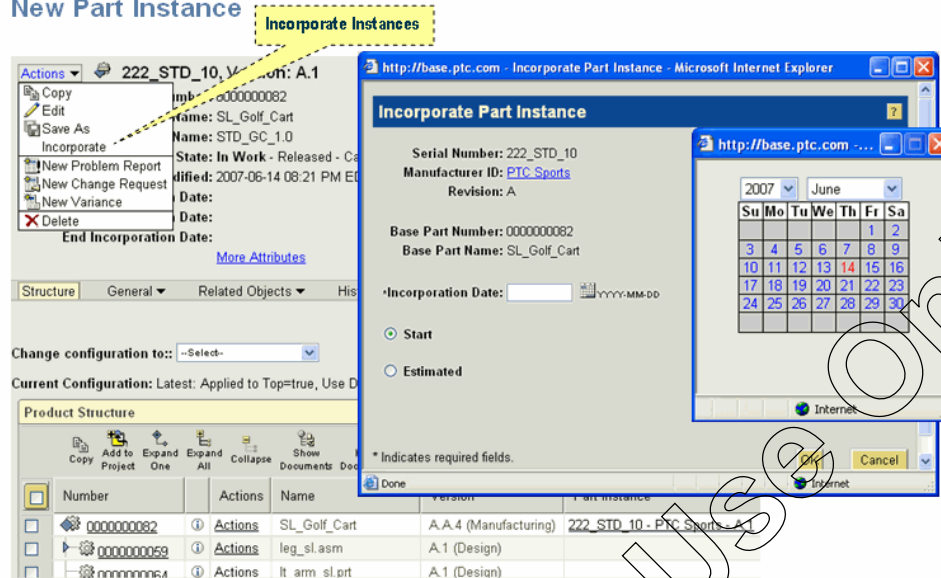


Step 3: Create Instances from Configurations

In the third step, create a new part Instance from the details page of a part or configuration. An instance requires a serial number.

Step 4: Incorporate Lower Level Instances

New Part Instance



Step 4: Incorporate Lower Level Instances

Next, you can start at the lower level in the structure and set the incorporation date of the lower level instance in the structure. The incorporation date can be either exact or an estimate.

Step 5: Allocate Instances

Allocate lower level instances to higher level instances

Product Structure							
<input type="checkbox"/>	Number	Actions		Version	Name	Part Instance	Start Incorporation
<input type="checkbox"/>	KC3500	① Actions ▼		A.A.4 (Manufacturing)	STD_Golf_Cart	250-STGC-10	
<input type="checkbox"/>	0000000094	① Actions ▼		A.1 (Design)	leg_std.asm		
<input type="checkbox"/>	0000000101	① Actions ▼		A.1 (Design)	lower_support_std.asm		
<input type="checkbox"/>	0000000102	① Actions ▼		A.1 (Design)	lt_arm_std.prt		
<input type="checkbox"/>	0000000103	① Actions ▼		A.1 (Design)	nut_1_4_std.prt		
<input type="checkbox"/>	0000000103	① Actions ▼		A.1 (Design)	nut_1_4_std.prt		
<input type="checkbox"/>	0000000103	① Actions ▼		A.1 (Design)	nut_1_4_std.prt		
<input type="checkbox"/>	0000000103	① Actions ▼		A.1 (Design)	nut_1_4_std.prt		
<input type="checkbox"/>	0000000107	① Actions ▼		A.1 (Design)	rt_arm_std.prt		
<input type="checkbox"/>	0000000115	① Actions ▼		A.1 (Design)	upper_support_std.asm		
<input type="checkbox"/>	0000000118	① Actions ▼		A.1 (Design)	wheels_assem_std.asm		
<input type="checkbox"/>	0000000121	① Actions ▼		A.1 (Manufacturing)	T150XL Lubricant		
<input type="checkbox"/>	0000000121	① Actions ▼		A.1 (Manufacturing)	T150XL Lubricant		
<input type="checkbox"/>	GCB220	① Actions ▼		A.1 (Manufacturing)	golf_cart_bag	250-GCB-10	2007-10-07 00:00:00 EDT

Golf Cart Instances

Instance Incorporation Date

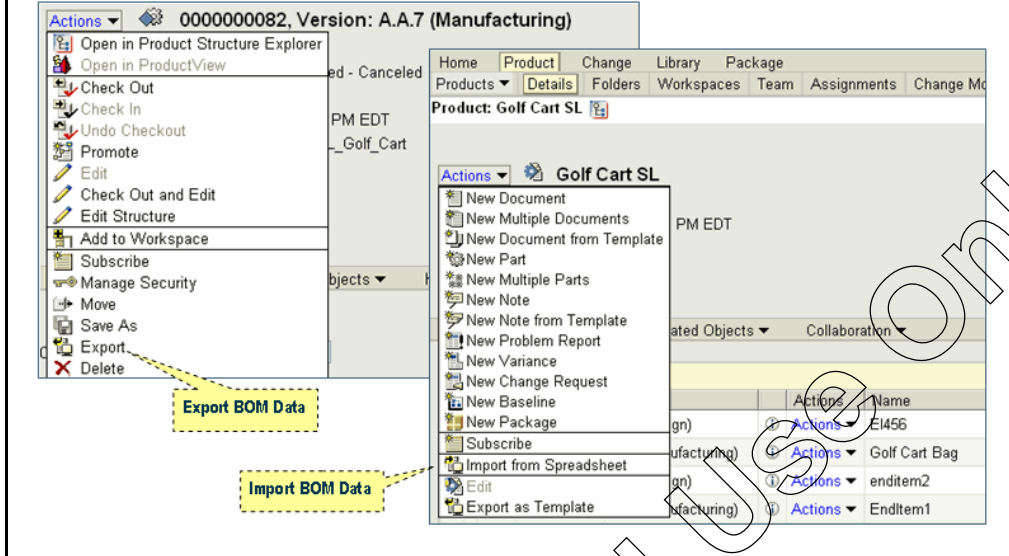
Allocated Golf Cart Bag Instance

Step 5: Allocate Instances

Finally, allocate an existing part Instance to a higher level instance structure. Repeat the previous three steps until the top-level structure is completely specified.

Import/Export BOM Data using Excel Spreadsheets

Import and Export BOM Data



Import/Export BOM Data using Excel Spreadsheets

You can export data from Windchill to a Microsoft Excel spreadsheet. This capability enables you to create a spreadsheet in Microsoft Excel format that can be later imported in Windchill. You can export to a spreadsheet in two ways; Export a product structure to a Microsoft Excel spreadsheet using the Export action from the Actions list, or Export a part list to a Microsoft Excel spreadsheet using the Export to a file action from search results. Exported spreadsheets are saved with the .xls extension.

You can import part data and part relationships from a Microsoft Excel spreadsheet created in the pre-defined format into a library or a product. This enables you to build product structures from existing parts, create new parts, or update existing parts using data in the input spreadsheet. The import from spreadsheet capability does not require administrator privileges.

Lab Exercises

Exercise 1: Baselining Product Structures

Objectives

After successfully completing this exercise, you will know how to:

- Create and populate managed baselines.

Scenario

In this exercise, you take the role of John Evans at PTC Sports. PTC Sports is continuing the development of the Standard Golf Cart product. John is also responsible for managing its configurations.

John anticipates that the golf cart will change many times during its production. Before he makes changes to it, he wants to create a baseline to which he can return, should he need to review the original configuration.


Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:



- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Create and populate a baseline.

1. Select the **Product** major tab to view the available products.
2. Click the **Products** drop-down menu just below the Home major tab to view the list of products.
3. Select **Standard Golf Cart** to open the product.
4. Click the **Actions** drop-down menu next to the STD_Golf_Cart end item to open the Actions menu.
5. Select **Open in Product Structure Explorer** to open the end item in Product Structure Explorer.
6. In the Authorization Request dialog box, type **ptc** in the Password field.
7. Click **Yes** to log on and open the Product Structure Explorer.
8. Click the **Selected** menu in the Product Structure Explorer main menu bar.
9. Select **Baseline**.
10. Select **Add to Baseline...** to add the structure to the baseline.
11. In the Add to Baseline dialog box, click the **New** button to create a new baseline.
12. Type **STDGC_Prototype** in the Name field.
13. Click the **Locate...** button next to the Context Name field.
14. The Search for Context page appears. Type **Standard*** in the Context Name Equals field to launch a wild card search.
15. Click the **Search** button to search for the desired context.
16. In the Results section, ensure that the Standard Golf Cart is selected. Click **OK** to save the information and return to the New Baseline dialog box.
17. In the New Baseline dialog box, click **OK** to save the information and return to the Add to Baseline dialog box.
18. In the Add to Baseline dialog box, select the **Populate Baseline?** check box to populate the baseline with the structure including all subcomponents.

19. Click **OK** to save the information and close the Add to Baseline dialog box.
20. In the Baseline Progress dialog box, click **OK** to acknowledge the baseline creation.
21. Click the Product Structure Explorer **File** menu to open the menu.
22. Select **Exit** to close Product Structure Explorer.
23. Click the **Windows Close** button  to close the Product Structure Explorer startup window, if not closed automatically.

Task 2. View and lock the baseline.

1. In the Internet Explorer's main toolbar, select the **Refresh** button  to refresh the contents of the Standard Golf Cart product.
2. Click the **View Information** icon  next to the STDGC_Prototype baseline to view the baseline details.
3. Click the **Actions** menu in the top-left corner of the details page.
4. Select **Lock** to lock the baseline.

This completes the exercise.

Exercise 2: Creating New View Versions

Objectives

After successfully completing this exercise, you will know how to:

- Create a new view version of the Standard Golf Cart product structure.

Scenario


In this exercise, you take the role of John Evans and create a manufacturing view of the Standard Golf Cart product. This manufacturing view will be used by the manufacturing department to assemble the finished product. PTC Sports is using a preferred supplier to deliver a golf cart bag that will be shipped with each golf cart assembly. The golf cart bag is a supplier part and it does not have any CAD document associated with it. In addition, the bag is also not available in the design view of the product structure. Lastly, the manufacturing view will also contain a small package of a grease lubricant. This lubricant will be used by the customers during the golf cart assembly process.

Initial Conditions


To successfully complete this exercise, you must establish the following initial conditions:




- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the details page of the STDGC_Prototype baseline.

Task 1. Create the Manufacturing View Version of the Standard Golf Cart product structure.

1. Select the **Folders** minor tab to view the folders within the Standard Golf Cart product.
2. Click the **View information** icon  next to the STD_Golf_Cart end item to open the details page.
3. Click the **Actions** drop-down menu in the top-left corner of the details page.
4. Select **New View Version** to create a new view version.
5. Ensure that the Manufacturing view is selected in the Select View field. Click **OK** to create the new view version.

Task 2. Modify the manufacturing view product structure and add components.

1. Click the **Actions** drop-down menu in the top-left corner of the details page.
2. Select **Open in Product Structure Explorer** to open the Standard Golf Cart manufacturing view in Product Structure Explorer.
3. The Authorization Request dialog box appears. Type **ptc** in the Password field.
4. Click **Yes** to log on to Product Structure Explorer.
5. In the Product Structure toolbar, select the **Insert New** icon  to insert a new part within the structure.
6. In the Insert New window, click the **Locate...** button next to the Context Name field to specify a storage location for the new part.
7. In the Context Name field, type **Standard*** to specify a wild card search.
8. Click the **Search** button to launch the search.
9. In the Search for Context dialog box, click **OK** to save the information and return to the Insert New window.
10. In the Insert new window, click the **Next >** button to go to the next window.
11. Click the **End Item** drop-down menu.
12. Select **Yes** to indicate that the golf cart bag is an end item.

13. Click **Next >** to go to the next window.
14. Type **golf_cart_bag** in the Name field.
15. Type **GCB220** in the Number field.
16. Click the **View** drop-down menu to view the available values.
17. Select **Manufacturing**.
18. Click the **Source** drop-down menu to view the available values.
19. Select **Buy** to indicate that the part will be purchased.
20. Click the **Trace Code** drop-down menu to assign a Trace Code to the golf cart bag.
21. Select **Serial Number**.
22. Click **OK** to create and insert the new part.
23. In the Product Structure toolbar, select the **Insert Existing** icon  to insert an existing part within the structure.
24. In the Name field within the Search section, type **T150XL***.
25. Click the **Search** button to locate the object.
26. Ensure that the T150XL Lubricant part is selected and then click the **OK** button.
27. In the Quantity field within the Insert Existing window, type **2** to specify two packages of the lubricant.
28. Click **OK** to save the information.
29. In the Product Structure toolbar, click the **File** menu to validate the changes.
30. Select **Validate Changes**.
31. Click **OK** in the Information dialog box to acknowledge the successful validation.
32. In the Product Structure toolbar, click the **Save** icon  to save the changes.
33. Click **Edit** in the Product Structure Explorer main menu.
34. Select **Edit Mode** to switch to the Edit Mode.
35. In the Alert window, click **No** to keep the product structure in the same window.
36. Click **Selected** in the Product Structure Explorer main menu.
37. Select **Check In...** to check in the modified end item.
38. Click **OK** to check in without typing any comments.
39. Click the **File** menu in the Product Structure Explorer.
40. Select **Exit** to end the Product Structure Explorer session and return to the end item details page.
41. Click the **Windows Close** button  to close the Product Structure Explorer startup window, if not closed automatically.

This completes the exercise.

Exercise 3: Processing Reference Designator Information

Objectives

After successfully completing this exercise, you will know how to:

- Add the reference designator information to the product structure.
- View part occurrences.

Scenario

In this exercise, we edit the golf cart product structure using the Product Structure Browser. Specifically, we add the reference designator information to the product structure components.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the details page of the STD_Golf_Cart end item (KC3500, A.A.2 ,Manufacturing).

Task 1. Edit the golf cart product structure and add the reference designator information.

1. Click the **Actions** drop-down menu in the top-left corner of the golf cart end item details page.
2. Select **Edit Structure** to make modifications to the structure.
3. The Edit Structure page opens. In the Reference Designator field next to the lt_arm_std.prt, type **A1**.
4. In the Reference Designator field next to the lt_arm_std.prt, type **A2**.
5. In the Reference Designator field next to the nut_1_4_std.prt, type **N1-N4** to specify a range.
6. Click **OK** to save the information and return to the end item details page.
7. Click the **Actions** drop-down menu in the top-left corner of the golf cart end item details page.
8. Select **Check In** to check in the changes.
9. In the Check In dialog box, click **OK** to continue check in.
10. In the upper-right corner of the Product Structure table, click the **Current View** menu to list the available table views.
11. Select **RefDes** to change the view from Default to RefDes.

Task 2. Show part occurrences.

1. In the Product Structure table, select the check box for the **nut_1_4_std.prt** object.
2. Click the **Show Occurrences** link in the Product Structure toolbar to display all occurrences of the specified part.
3. Observe that the reference designator range changes to individual values.

This completes the exercise.

Exercise 4: Adding Bill of Materials (BOM) Notes

Objectives

After successfully completing this exercise, you will know how to:

- Insert BOM notes within the golf cart product structure.

Scenario







In this exercise, you take the role of John and create and insert bill of materials (BOM) notes to the structure. These notes will facilitate manufacturing department during the assembling process of the product.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the details page of the STD_Golf_Cart end item.

Task 1. Add BOM notes.

1. Click the **Related Objects** drop-down menu to view the available options.
2. Select **Notes** to view product structure notes.
3. Select the **T150XL Lubricant** check box.
4. In the Notes table, click the **Add New Note** icon  to create a new note.
5. In the New Note window, type **Lubricant Type** in the Name field.
6. In the Note Text field, type **Lithium based grease lubricant**.
7. Click the **Next** button at the bottom of the New Note window.
8. Do not attach any file or URL. Click the **Finish** button to create the note.
9. Click the Expand icon  to the left of the end item to expand the structure.
10. Click the Expand icon  to the left of the T150XL Lubricant to view the note.
11. Select the **wheels_assem_std.asm** check box.
12. Click the **Add New Note** icon  to create another new note.
13. Type **De-burr** in the Name field.
14. In the Note Text field, type **De-burr all sharp edges in axle sleeve**.
15. Click **Finish** to create the note.
16. Select the **wheels_assem_std.asm** check box again to create a second note for the same part.
17. Click the **Add New Note** icon  to create another new note.
18. Type **Painting Note** in the Name field.
19. In the Note Text field, type **Clean and paint per STD specifications**.
20. Click **Finish** to create the note.
21. Click the Expand icon  to the left of the wheels_assem_std.asm node to view the notes.
22. Click the **Actions** drop-down menu in the upper-left corner of the end item details page.
23. Select **Check In** to check in the changes.
24. Click **OK** to complete the check in process.
25. Click the **Related Objects** drop-down menu.

26. Select **Notes** to view the available BOM notes.

This completes the exercise.

For Educational Use Only

Exercise 5: Creating End Item Configurations and Instances

Objectives

After successfully completing this exercise, you will know how to:

- Create an end item configuration.
- Create an end item instance from an end item configuration.
- Incorporate a part instance.
- Allocate a lower level instance to an end item instance.

Scenario

In this exercise, you take the role of John Evans as he creates an end item configuration and instance.

The Standard Golf Cart is ready to be manufactured. John is ready to strike an end item configuration that will represent how it is built. From this, he will create a serialized end item instance that tracks each golf cart bag that is shipped with the golf cart assembly. To do this, he will have to incorporate and allocate one of the golf cart bag end item instances to the golf cart instance.

Initial Conditions


To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans@ptc).
- Start on the details page of the STD_Golf_Cart end item.

Task 1. Create an end item configuration from the manufacturing view of the Golf Cart product structure.



1. Click the **Structure** link in the details page of the golf cart end item to view the product structure.
2. Click the **New Part Configuration** link in the Product Structure toolbar to create a new configuration.
3. Type **Config_STD_GC_1.0** in the Part Configuration Name field.
4. Select the **Full** option in the Populate section to include the full structure in the configuration.
5. Click the **OK** button to create the configuration.
6. In the configuration details page, click the **Actions** menu in the top-left corner of the page.
7. Select **New Part Instance** to create a new instance based on this newly created configuration.
8. Type **250-STDGC-10** in the Serial Number field.
9. Click **Finish** to create the instance.
10. Click **OK** to acknowledge the successful creation of the instance.

Task 2. Create a configuration and an instance for the golf cart bag end item.

1. Select the **Folders** minor tab to return to the folder contents of the Standard Golf Cart product.
2. Click the **View information** icon  next to the golf_cart_bag end item to open the details page.
3. In the Product Structure toolbar, click the **New Part Configuration** link to create a new configuration for the golf cart bag part.
4. Type **Config_GCB_1.0** in the Part Configuration Name field.
5. Click **OK** to create the new configuration.
6. In the configuration details page, click the **Actions** menu in the top-left corner of the page.

7. Select **New Part Instance** to create a new instance.
8. Type **350-GCB-10** in the Serial Number field.
9. Click **Finish** to create the instance.
10. Click **OK** to acknowledge the successful creation of the instance.

Task 3. Incorporate and allocate the golf cart bag part into the golf cart instance.

1. Click the **Actions** menu in the top-left corner of the instance details page.
2. Select **Incorporate** to set the incorporation date.
3. In the Incorporate Part Instance window, click the **calendar** icon  to set the date.
4. Select today's date as the incorporation date.
5. Click **OK** to save the information and return to the instance details page.
6. Select the **Folders** minor tab to return to the folder contents of the Standard Golf Cart product.
7. Click the **View information** icon  next to the STD_Golf_Cart end item to open the details page.
8. Click the **General** drop-down menu to access the golf cart instance.
9. Click **Part Instances** to view all instances.
10. Click the **View information** icon next to the 250-STDGC-10 instance to open the instance details page.
11. Click the lower part of the scroll bar to scroll down and view the entire product structure table.
12. Click the **Actions** menu next to the golf_cart_bag object.
13. Select **Allocate Existing** to allocate the existing golf cart bag instance into the golf cart instance.
14. In the Allocate Existing Part Instance window, click the **Available Instances** drop-down menu to select the golf cart bag instance.
15. Select **350-GCB-10**.
16. Click the **OK** button to close the Allocate Existing Part Instance window.

This completes the exercise.

Exercise 6: Adding Substitutes and Alternates in a Product Structure

Objectives

After successfully completing this exercise, you will know how to:

- Add alternates and substitutes in the Standard Golf Cart product structure.

Scenario





In this exercise, you take the role of John Evans and use Product Structure Explorer to add alternates and substitutes in the golf cart product structure. You then verify the information using the Web browser.


Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:


- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the details page of the STD_Golf_Cart end item instance.

Task 1. Add alternates and substitutes in the golf cart product structure.

1. Select the **Folders** minor tab to return to the folder contents of the Standard Golf Cart product.
2. Click the **Actions** drop-down menu next to the STD_Golf_Cart end item to open the menu.
3. Select **Open in Product Structure Explorer**.
4. The Authorization Request dialog box appears. Type **ptc** in the Password field.
5. Click **Yes** to log on and open the Product Structure Explorer.
6. Select the **T150XL Lubricant** object from the product Structure.
7. Select the **Replacements** tab in the right window.
8. In the Alternates section, click the **Add alternate part** icon  (top one) to add an existing part.
9. In the Name field, type **K58XG*** to specify of a part name.
10. Click the **Search** button to launch a search.
11. Ensure that the K58XG Lubricant part is selected in the Results section and click the **OK** button.
12. Select the **golf_cart_bag** object in the product structure.
13. In the Substitutes section, click **Add substitute part** icon  to add a part.
14. In the Name field, type **waterproof*** to specify a part name.
15. Click the **Search** button to launch a search.
16. Ensure that the waterproof_gc_bag part is selected in the Results section and click the **OK** button.
17. Click the **Save** icon  in the Product Structure Explorer toolbar to save the draft.
18. In the left pane, select the STD_Golf_Cart end item.
19. Click **Edit** on the Product Structure Explorer main menu bar.
20. Select **Edit Mode** to switch from the Draft Mode to the Edit Mode.
21. In the alert window, click **No** to keep the product structure in the same window.
22. Select the **Check in selected objects** icon  to check in the end item.
23. Click **OK** to continue checking in the object.
24. Click **File** in the Product Structure Explorer main menu.
25. Select **Exit** to close the Product Structure Explorer session.

26. Click the **Windows Close** button  to close the Product Structure Explorer startup window, if not closed automatically.

Task 2. Verify part replacements in a Web Browser.

1. Click the **View information** icon  next to the STD_Golf_Cart end item to open the details page.
2. In the Product Structure table, select the **Select all rows** check box.
3. Click **Show Replacements** link in the Product Structure toolbar to display all alternates and substitutes.

This completes the exercise.

For Educational Use Only

Exercise 7: Exporting BOM Data using Microsoft Excel

Objectives

After successfully completing this exercise, you will know how to:

- Export a product structure to a Microsoft Excel spreadsheet.

Scenario



In this exercise, you use import and export a product structure using the Microsoft Excel Spreadsheet.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the details page of the STD_Golf_Cart end item.
- Open a Windows Explorer session displaying the contents of the D:\Student directory.
- Arrange the windows with Internet Explorer on top and Windows Explorer below it.

Task 1. Export a BOM structure to MS Excel.

1. Click the **Actions** drop-down menu on the top-left corner of the Standard Golf Cart end item details page.
2. Select **Export** to launch the Export Manager.
3. In the Export File Name field, type **D:\Student\GC_BOM.xls**.
4. Click the **Set Config Spec** button to set the configuration specification filter.
5. Click the **View** drop-down menu.
6. Select **Manufacturing** to set the configuration specification to the manufacturing view.
7. Click **OK** to save the information and return to the Export page.
8. In the Objects for Export section, select the **Product Structure to Excel** option.
9. Click **Submit** to start the export process.
10. Ensure that the Export Status log displays the Export Result Completed status. Click **Exit** to close the Export page.
11. Click the **Windows Close** button  to close the Export Manager startup window, if not closed automatically.
12. Click the **Windows Minimize**  button to minimize the browser.
13. Double-click the **GC_BOM.xls** file to verify the results.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Create new view versions.
- Create managed baselines.
- Describe bill of materials (BOM) notes.
- Explore end item configurations and instances.
- Define part occurrences.
- Describe the reference designator processing.
- Identify part incorporation and allocation.
- Add replacement parts.
- Identify general configuration management steps.
- Import and export BOM data using Microsoft Excel spreadsheet.

For Educational Use Only

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. Which statement correctly defines a Managed Baseline?
 - A - A managed baseline is like a snapshot of a product at a specific point in time.
 - B - A managed baseline represents a product structure in the future.
 - C - A baseline represents the first version of the product.
 - D - A baseline represents the last version of the product.
2. Which term identifies the versions of parts used to build the end item as it is provided to customers?
 - A - End Item Configuration
 - B - End Item Instance
 - C - End Item Baseline
 - D - Serialized Product
3. Incorporation is...
 - A - the process of associating specific end item instances and serialized products to each other.
 - B - the date when a new configuration associated to an end item instance takes effect.
 - C - the date when a proposed change to the product structure takes effect.
 - D - None of the above.

For Educational Use Only

Managing Standard Documents

Introduction

In this module, you learn how to use standard documents or document objects to store and manage non-Pro/ENGINEER files. You learn multiple methods of creating document objects, how to establish document relationships, and the process for modifying document objects.

Objectives

After completing this module, you will be able to:

- Understand the purpose and capabilities of document objects.
- Create documents using various methods.
- Establish relationships between documents.
- Modify a document by performing a check out, updating document details or content, and performing a check in.
- Conduct document management functions using Desktop Integration.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

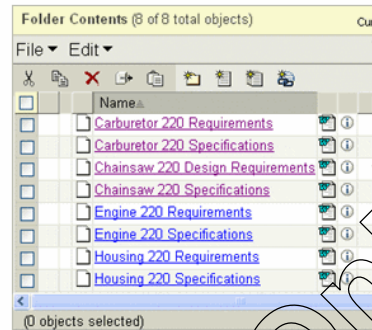
You may use the space below to take your own notes.

For Educational Use Only

Understanding Standard Documents

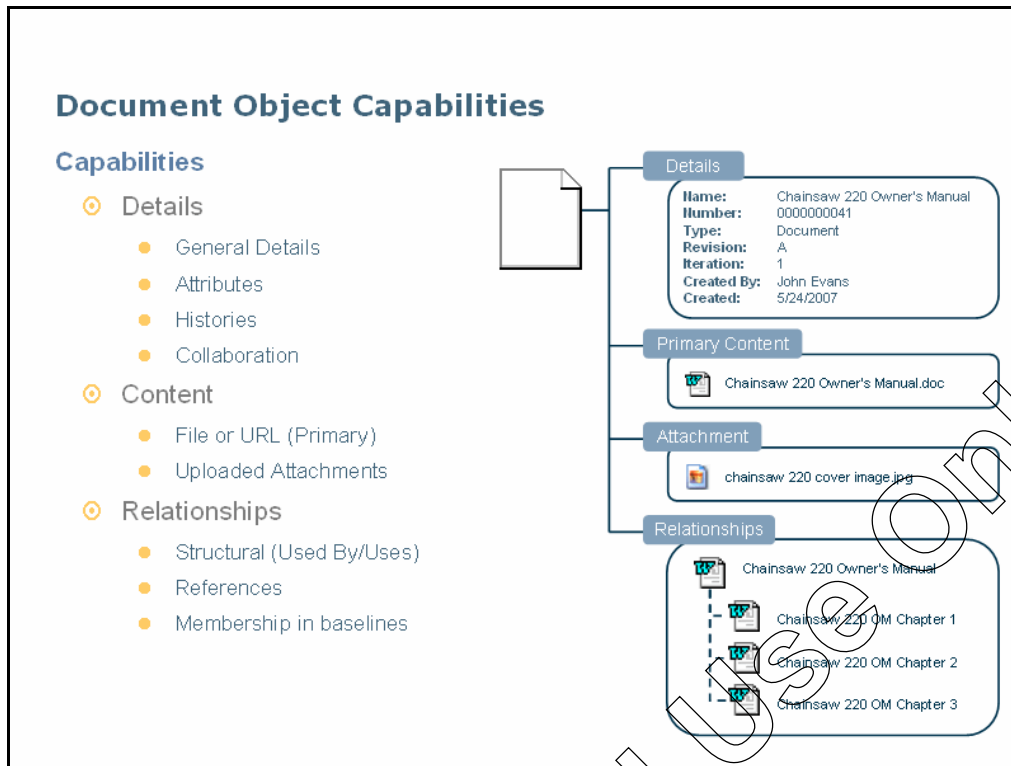
Purpose

- To share files not generated in Pro/ENGINEER.
- To manage file development.



Understanding Standard Documents

Windchill PDMLink 9.0 uses standard documents or document objects to store files that are not generated by Pro/ENGINEER. This enables you to share and manage other electronic files using the same collaboration and control features used for managing your design information.



Document Object Capabilities

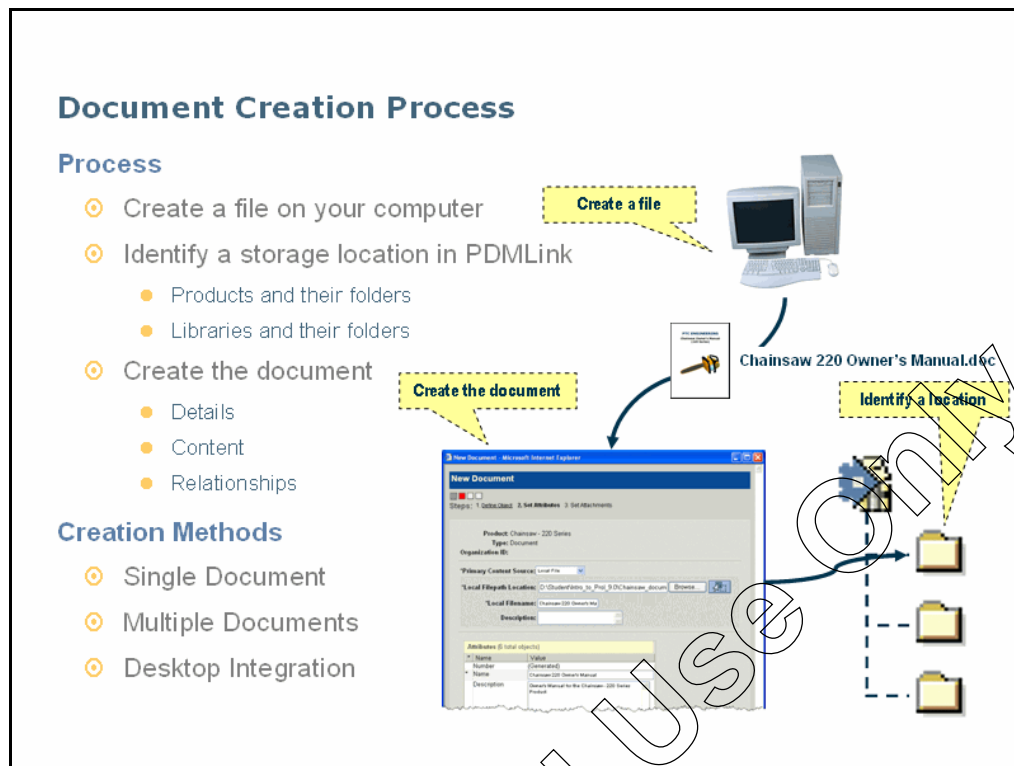
Before you begin managing information with document objects, it is important for you to review and understand document object capabilities.

A document object has details, which are also called metadata. Some of the document details are based on information you supply, such as the document's name. Other document details are automatically recorded, such as the date it was created, or the creator's name. One important detail you specify during document creation is the document's type. The system uses the document type to assign attributes and administration. For example, the document type may determine which life cycle process the document goes through. Your administrator may establish unique document types based on your organization's needs and terminology. You should check with your administrator to determine the types available to you.

A document object stores a single file or a URL that is designated as primary content. A document object can also store multiple additional files designated as attachments. Attachments are typically files related to the primary file that you want to share, but not worth managing as separate document objects.

Document objects can form three types of relationships:

- A document can form a structural relationship with another document object.
- A document can form a reference relationship with another document or part object.
- A document can be a member of a baseline.



Document Creation Process

Creating documents is a three-step process:

- First, you must create a file on your computer. You can use any authoring application to develop and save the file as you normally would to your hard drive.
- Next, you must identify the storage location for the document object that will manage the file. Where you store the file depends on the context in which it will be used. If the file is specific to information within a product, you can store it within that product. Likewise, if the file is specific to a library, you can store it within the appropriate library.
- With both of those steps complete, you are ready to upload your file. For each document object, you define its details, content, and relationships.

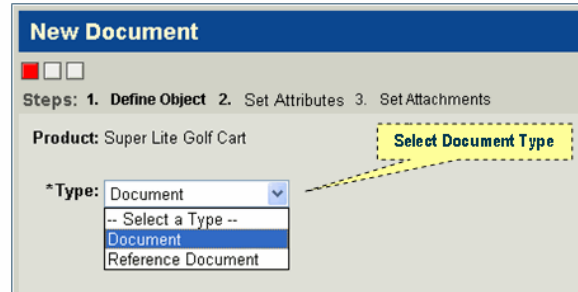
PDMLink provides multiple document creation methods:

- You can use the New Document utility to upload a single file and create document objects one at a time.
- You can use the New Multiple Documents utility to upload multiple files and create multiple document objects.
- You can use the New Document from Template feature to create documents from predefined templates.
- You can use Desktop Integration to create documents directly from Microsoft Office applications.

Creating Documents: Define Object

1. Define Object

- Document
- Reference Document



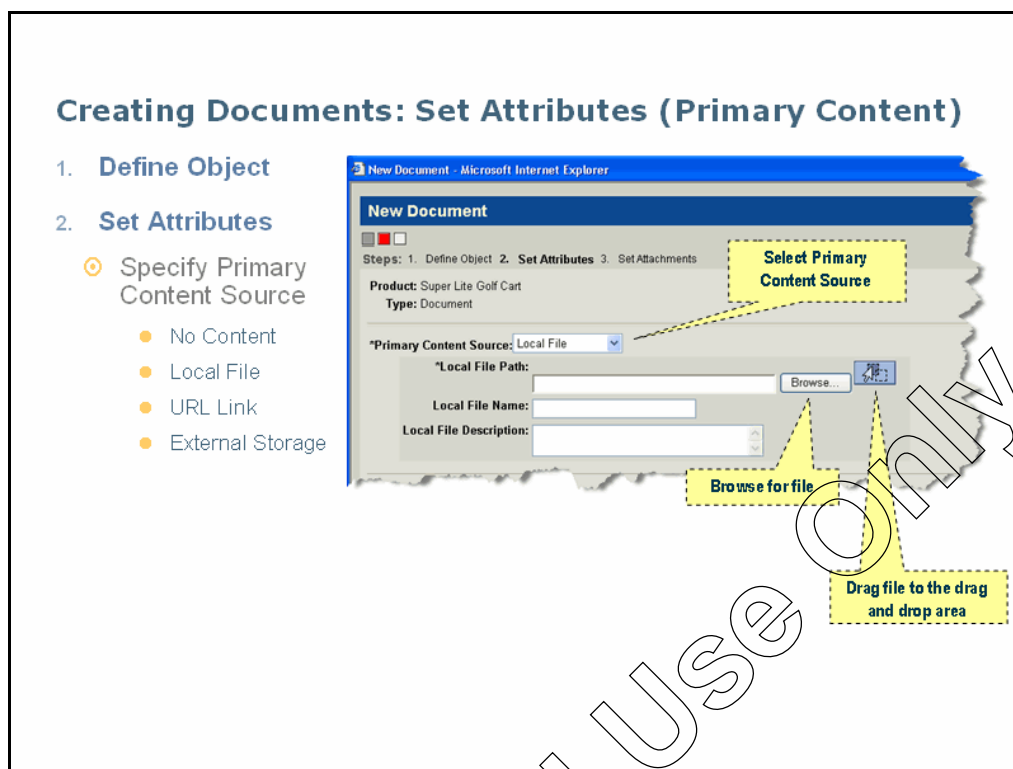
Creating Documents: Define Object

You can start the document creation process by clicking the New Document icon in the Folders table of a product or library, or in a folder's actions menu. This opens the New Document Wizard, which steps you through the document creation process.

First, you are required to select a document type. The type you select may determine unique attributes and administration for the document object. The two out-of-the-box document types are Document and Reference Document.



Out-of-the-box, PDMLink does not define any unique attributes or administration for the two default document types. Your administrator uses these types to generate the document types and corresponding administration specific to your implementation.



Creating Documents: Set Attributes (Primary Content)

The second page of the Create Document Wizard enables you to specify the source of the primary content. The Primary Content Source drop-down menu enables you to select from four choices:

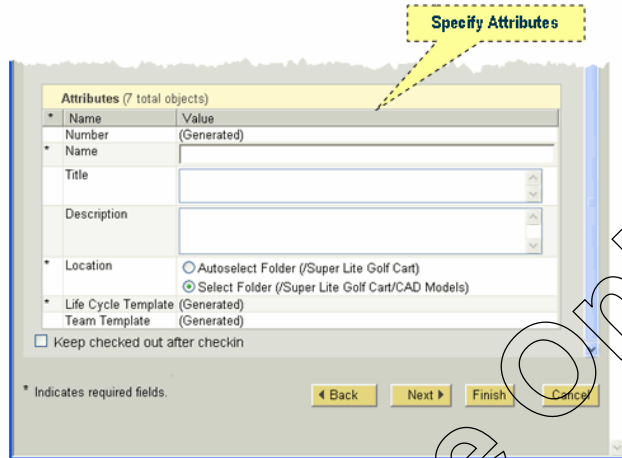
- The No Content selection enables you to create a document object without any primary content. Typically, a document object without content is used as a placeholder to which content is added at a later time.
- The Local File selection enables you to select and upload a file from your local system. You can populate the Local File Path field by using the Browse button to browse to the file on your computer or you can use the drag and drop icon to drag a file from your desktop to the New Document utility.
- The URL Link selection enables you to define a URL as the document's content.
- The External Storage selection enables you to designate a path to a file stored in another server. This is useful for managing large files, which can be maintained on a local server without requiring the file to be uploaded and stored in the PDMLink Oracle database.

Creating Documents: Set Attributes

1. Define Object

2. Set Attributes

- Specify Primary Content Source
- Specify Attributes
 - Name
 - Description
 - Location
 - Additional Attributes



Creating Documents: Set Attributes

If you select to Store a Local File, the Name field is automatically populated with the file's name. You can then change that name and enter a description for the document. The asterisk identifies the fields that are required. If your implementation does not employ autonumbering for documents, you will also need to enter a document number.



If your site has defined additional attributes for the selected document type, fields and default values for those attributes appear in the Attributes table below the Team Template attribute. For each attribute, you can accept the default value or specify a new value.

Creating Documents: Set Attachments

1. Define Object

2. Set Attributes

3. Set Attachments



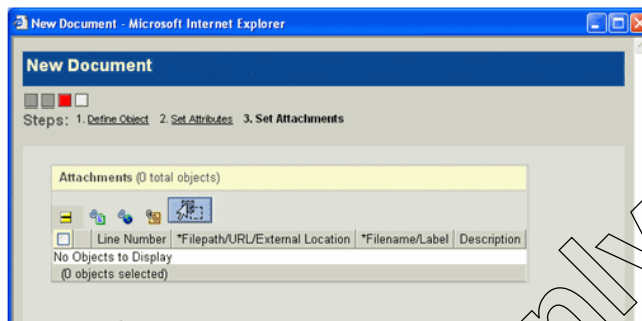
Local File



URL Link



External Storage



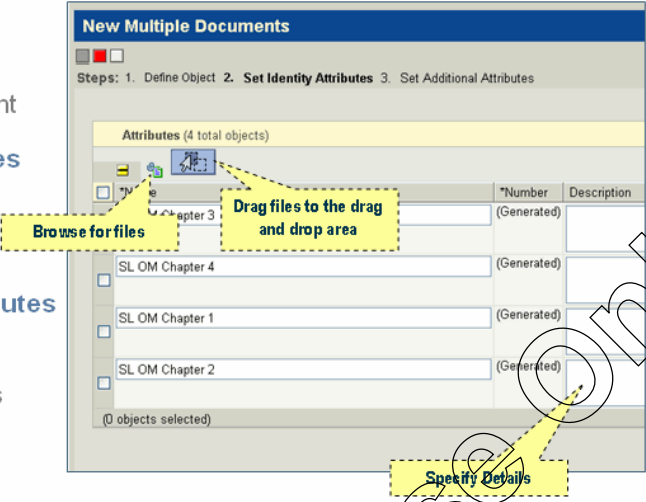
Creating Documents: Set Attachments

The third page of the New Document Wizard enables you to specify the source of additional files that will be stored as attachments. Attachments can be any combination of three types:

- A local file can be added as an attachment using the New local file attachment icon to browse to the file. A local file can also be added using the drag and drop icon to drag a local file from your desktop to the Attachments table.
- A URL link can be added as an attachment using the New URL link attachment icon.
- An external storage file can be added using the New external storage attachment icon.

Creating Multiple Documents

1. **Define Object**
 - Document
 - Reference Document
2. **Set Identity Attributes**
 - Name
 - Description
3. **Set Additional Attributes**
 - Location
 - Additional Attributes




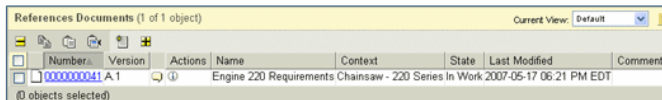
Creating Multiple Documents

The New Multiple Documents utility enables you to upload multiple files as primary content and generate a document object for each one. This utility also enables you to set many of the same attributes as if you had individually created the documents. However, the New Multiple Documents utility does not enable you to add attachments to any of the documents. Once the documents are created, you can add attachments to each document object as part of the modification process.




Establishing Document Relationships

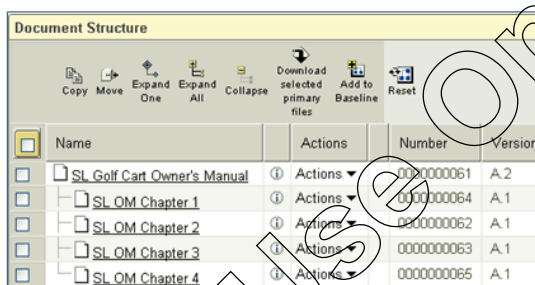
Document References

-  Add
-  Remove
-  Add Comments



Document Structure

-  Add Children
-  Remove Children
-  Reorder Children

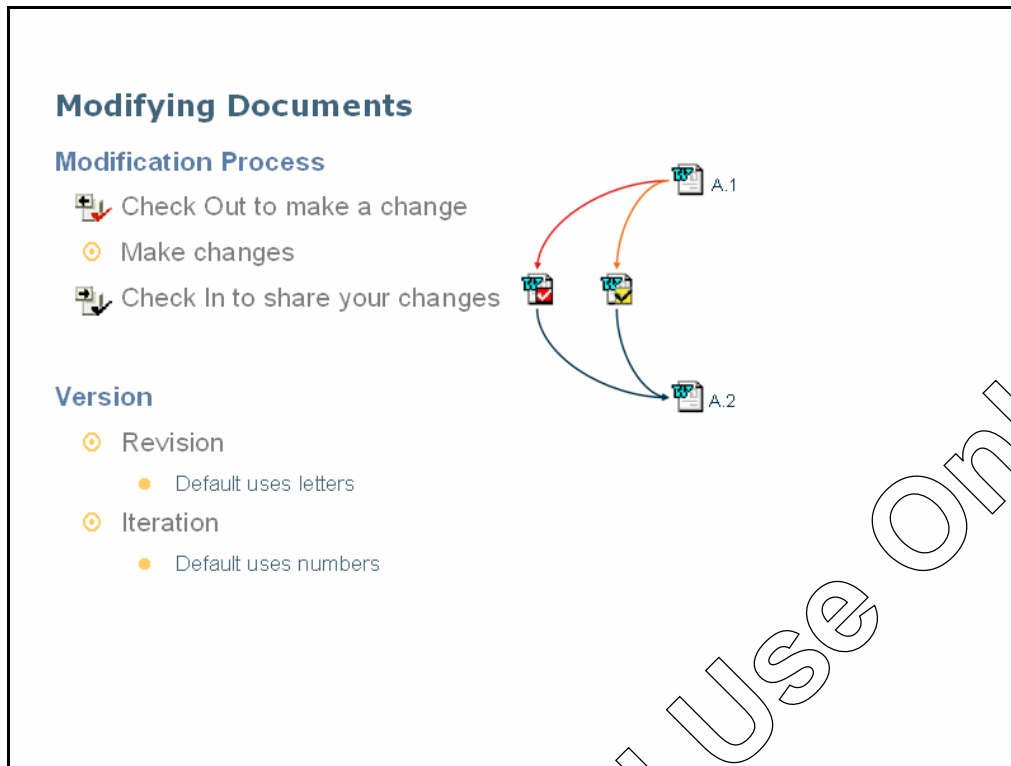


Establishing Document Relationships

Although document objects can establish three types of relationships with other objects (for example, document references, document structure, and membership in a baseline) you are only able to establish the referencing and structural relationships from a document's details page.

A document reference relationship creates an association between documents and parts that contain related, essential information. Documents that reference each other are maintained and managed separately, whereas a document attachment must be maintained with the document to which it is attached.

A document structural relationship creates a used by/uses relationship, also known as the parent-child relationship between documents indicating a hierarchy. Once again, documents that have structural relationships are maintained and managed separately.



Modifying Documents

The modification process for document objects involves three steps:

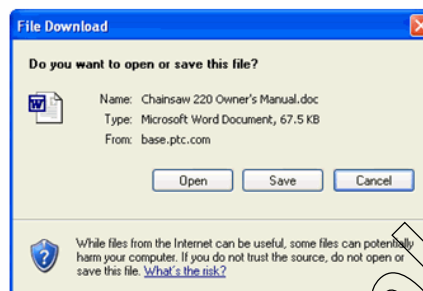
- First, you must check out a document object to make modifications. This signals to other users that you are modifying it. The checkout process creates two copies of the document object: a working copy, indicated with a yellow check box that you can modify, and a checked-out copy, indicated with a red check box that others can still access.
- The next step in the modification process involves making the desired changes. You can update the document content, add or remove attachments, or change document object attributes.
- Finally, you check the document object back in. The system applies changes to the working copy, and then uses the working copy to generate a new iteration of the document object. Once checked in, the new iteration is available to other users for modification.

A version attribute is used to track and control document modification. A version is composed of two elements, the character to the left of the decimal is the revision, and the character to the right of the decimal is the iteration. The default scheme uses a letter for the revision and a number for the iteration. Your administrator may assign a versioning scheme that is unique for your implementation.

Checking Out Documents

Check Out to make changes

- Open File
- Save File to Disk



Checking Out Documents

To modify a document, you must first check it out. When you initiate a check out, you lock a document in order to prevent it from being updated by others. It also enables you to edit the content file (such as a Microsoft Word file) of the document. When you initiate a check out, the File Download window gives you the option to save the file to disk, or to open it directly in an application in which you can edit it. If you click the Cancel button, the document will still be checked-out, however the primary content file will not be downloaded.

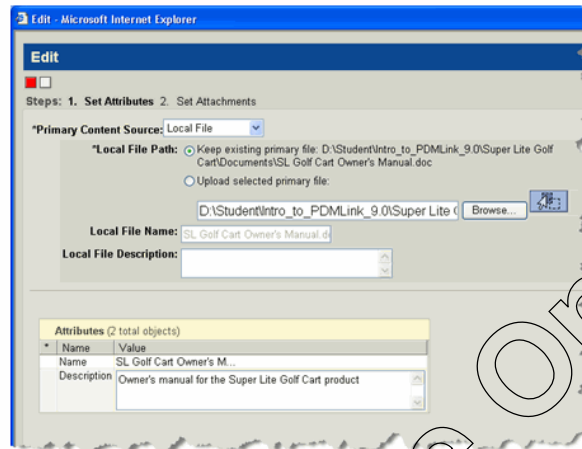


Your Attachments preferences determine whether a document is downloaded upon check out and where it is saved.

Updating Documents

Make your changes

- ✦ Modify the primary file
- ✦ Update details
- ✦ Add or remove attachments



Name	Value
Name	SL Golf Cart Owner's M...
Description	Owner's manual for the Super Lite Golf Cart product

Updating Documents

Once a document's primary file is checked-out and open, you can modify the file in the application that authored it.

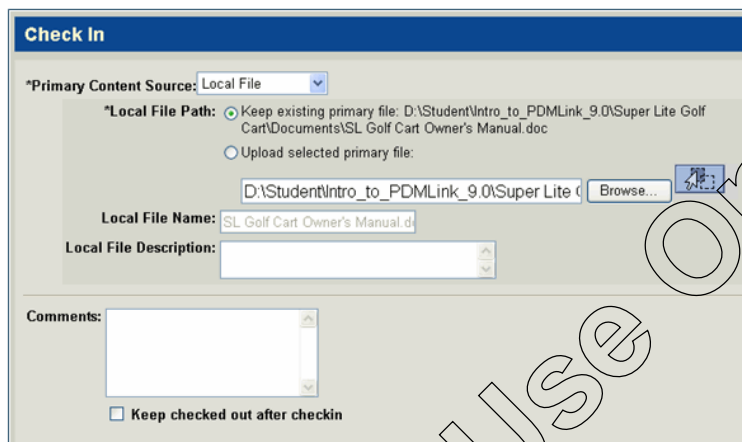
The Edit Document command, located on the document's Actions menu, opens the Edit Document Wizard, which is similar to the New Document Wizard. The Edit Document Wizard enables you to change the document's description, attributes, and attachments. Additionally, the Edit Document Wizard enables you to upload changes made to the primary file. If you wish only to make attribute or attachment changes, you have the option to not upload the primary file.

Because a document is not checked-in during an edit, the changes made during the edit will not be visible to others until you check in the document.

Checking In Documents

Check In to share changes

- ☉ Decide whether to upload
- ☉ Add Comments

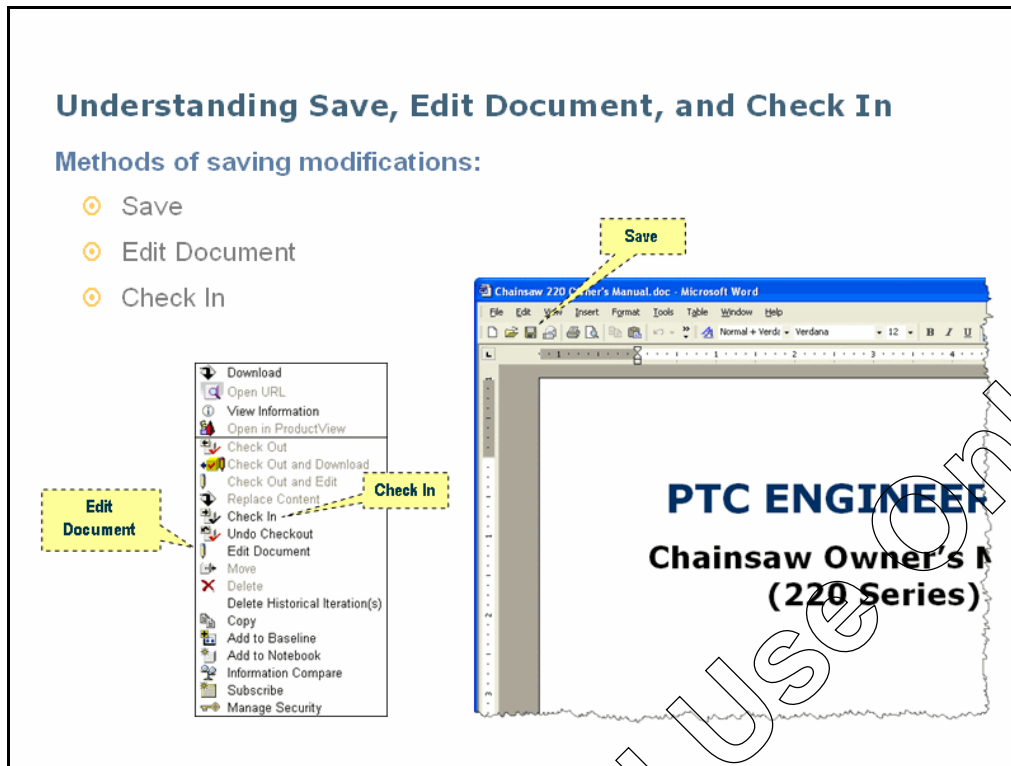


Checking In Documents

Once you complete your changes, you can check the document back in. You can initiate a check in from the Actions menu of the checked-out document.

When you initiate a check in, you are prompted to specify the file that will be uploaded. PDMLink recalls the location to which it downloaded the file, and automatically selects this path. However, if you are replacing the file with a different file, or one in a different location, you can change this path.

You can also enter comments, which communicate the changes you have made to others. In general, it is a best practice to enter comments to help others understand the changes you have made to the document.



Understanding Save, Edit Document, and Check In

While working with content files during the modification process, you have three options for saving your modifications: Save, Edit Document, and Check In. It is important for you to understand the differences between these functions, realize where the saved information is stored, and know when it is most appropriate to use each action.

Using Save

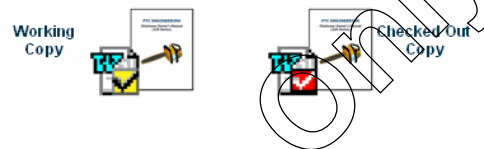
Save

- Saves the file to the local system



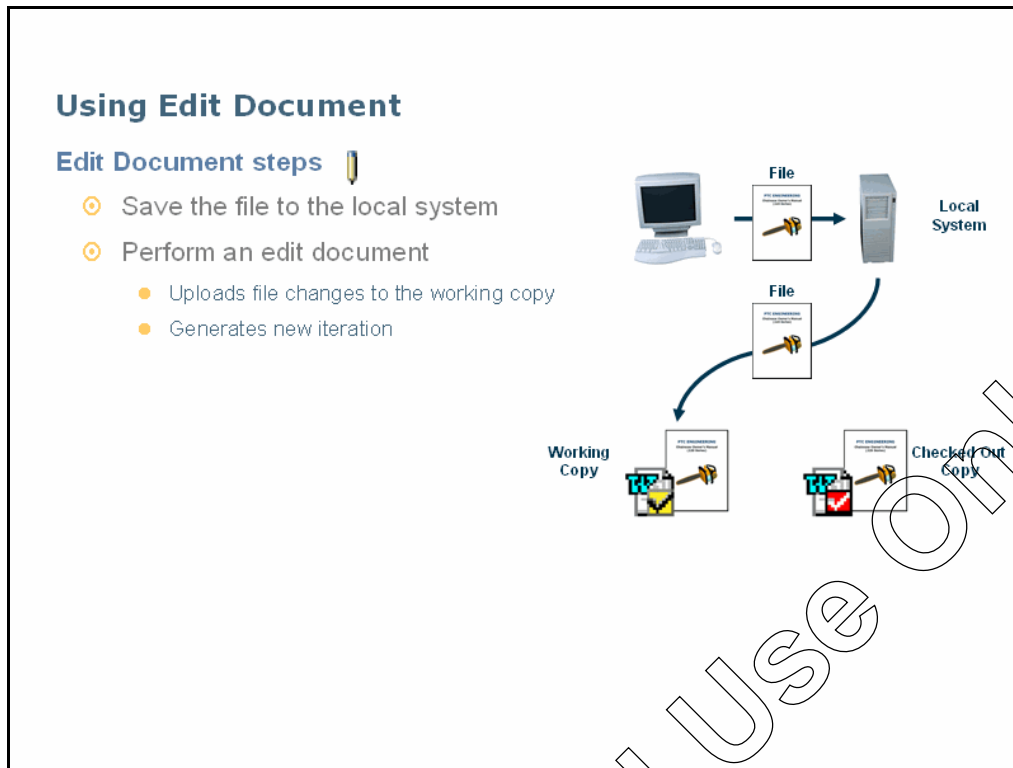
Not a Best Practice

- Files susceptible to local file system failures
- Should only be used if connection to the PDMLink server is lost



Using Save

When you conduct a Save operation from the file's authoring application, your modifications are saved to the local system. Although this is one of the most familiar methods of saving file changes, it is not a recommended best practice for saving incremental modifications to a file when you make significant edits. Files in the local system are susceptible to local file system issues, such as viruses or hard disk failures, which can cause the modified file to become damaged or lost. You should only use the Save function if you lose a file, or are unable to establish a connection to the PDMLink server.



Using Edit Document

Using an Edit Document action to save your modifications requires you to perform the two following steps:

- First, you must save your modified file to the local system using the authoring application's save function.
- Next, you use the Edit Document command in PDMLink to access the Edit Document Wizard and upload your saved file to the working copy stored on the server.

This is the best practice for saving incremental modifications to a file that requires significant editing. Having the content stored in the server-side working copy provides additional security because the content is protected by your implementation's backup and recovery process. You must be aware that working copies do not have iterations; each upload replaces the existing content with the modified content stored in the local system.

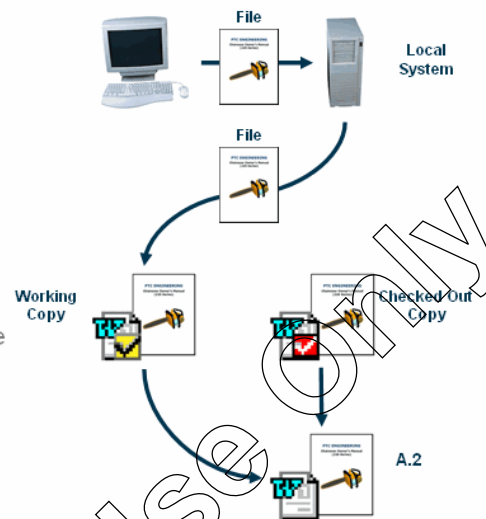
Using Check In

Check in steps

- Save the file to the local system
- Perform a check in
 - Uploads file changes to the working copy
 - Generates new iteration

Best Practice

- For signaling that modifications are complete
- For sharing changes with other users



Using Check In

Using a Check In action to save your modifications requires you to perform the two following steps:

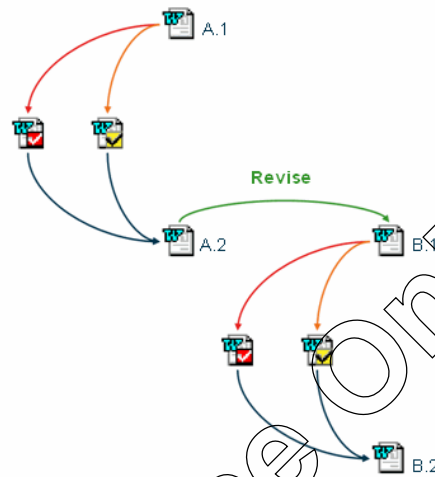
- First, you must save your modified file to the local system using the authoring applications save function.
- Next, you use the Check In command in PDMLink to check in the document object. When you use the Check In command, two actions occur. The modified file is uploaded to the working copy, which is used to generate a new iteration of the document object.

The check in action signals that modifications are complete and that the changes are now being shared with other users. Once again, the content stored on the server is protected by your system's backup and recovery process.

Revising Documents

Revise creates a new version of the document

- Revision number or letter is incremented.
- The iteration value is reset to the beginning of the sequence.
- The new version is set to a state:
 - Specified by the administrator
 - That enables modification through check out and check in



Revising Documents

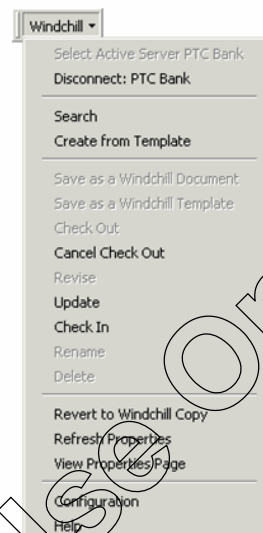
Your business rules may preclude you from altering a document past a certain development state. In this situation, you must use a revise action to generate a new document version before making any changes. As part of the revision process, PDMLink applies business rules and administrative settings in generating the new document version. These include, but are not limited to:

- Incrementing the Revision number or letter to the next value in the version sequence.
- Resetting the iteration number or letter to the beginning of its sequence.
- Setting the life cycle state. Typically, the administrative rules designate a state with access rules that enable modification using the check out and check in operations discussed earlier.

Desktop Integration

Purpose

- Manage Microsoft documents using PDMLink functions from within Microsoft Office applications:



Desktop Integration

Windchill Desktop Integration is a plug-in to Microsoft Office applications that enables the applications to directly communicate with the PDMLink system. Once Desktop Integration is installed, a Windchill menu is added to the Microsoft Office menu bar. This enables you to manage your Microsoft documents in PDMLink without having to leave the Microsoft Office application. Currently, Desktop Integration works with Microsoft Word, Excel, and PowerPoint.



Desktop Integration includes its own Help feature. You can access the Help feature for more information about Desktop Integration.

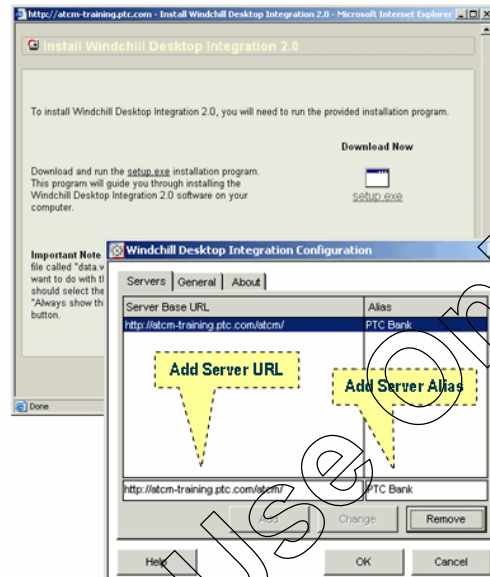
Installing and Configuring Desktop Integration

Installation and Configuration

- Install from Software downloads page, or when prompted.
- Can be configured to work with multiple Windchill servers.
 - Select Configuration
 - Add Server URL and Alias

Preferences

- Desktop Integration File Download Option
- Desktop Integration Plug-In Auto Detect Behavior



Installing and Configuring Desktop Integration

Before you can use Desktop Integration, you must install and configure it. The software is available from the Software Downloads page accessed from the Utilities section of the Home major tab.

Once installed, you must configure Desktop Integration to work with your server. The Windchill Desktop Configuration window provides three tabs to set preferences and establish server connection settings:

- The Servers tab enables you to supply a URL and name (alias) for each Windchill server to which you want to connect. Once configured, a command to connect to the server is added to the Windchill menu.
- The General tab enables you to set Desktop Integration preferences.
- The About tab supplies software version information.

In order to use Windchill Desktop Integration, your File Download Mechanism preference must be set to use Windchill Desktop Integration. This preference, along with File Download Behavior, determines how file content is downloaded. Preferences are set in the Preference Manager. The download preferences are located under the Attachments heading.

If your preference is set to use Desktop Integration but you have not installed it yet, the system will prompt you to open the file in a browser for one time or install Desktop Integration automatically.

Lab Exercises

Exercise 1: Creating Documents

Objectives

After successfully completing this exercise, you will know how to:

- Create documents.

Scenario

Erica Hill has created a Microsoft Word document for the Super Lite Golf Cart Owner's Manual. To make her document available to other users, Erica wants to add her document to the Documentation folder of the Super Lite Golf Cart product.



In this exercise, you take the role of Erica Hill as she creates a document to store the Super Lite Golf Cart Manual file.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as Erica Hill (ehill/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Create the Super Lite Golf Cart Owner's Manual document object.

1. Select the **Product** major tab to access the Products menu.
2. Click the **Products** drop-down menu just below the Home major tab to view available products.
3. Select **Super Lite Golf Cart** from the Products drop-down menu.
4. In the left pane,, select the **Documentation** folder.
5. In the Folder Contents table, click the **Add a new document with or without attached content** icon  to open the New Document Wizard.
6. On the Define Object page, click the **Type** drop-down menu.
7. Select **Document** from the Type drop-down menu.
8. Click the **Next** button to go to the Set Attributes step window.
9. On the Set Attributes page, click the **Primary Content Source** drop-down menu to view available options.
10. Select **Local File** from the Primary Content Source drop-down menu to keep the default selection.
11. Click the **Browse...** button to the right of the Local File Path field.
12. In the Open window, browse to the D:\Student\Intro_to_PDMLink_9.0\Super Lite Golf Cart\Documents folder and select the **SL Golf Cart Owner's Manual.doc** file.
13. Click the **Open** button to set the local file path.
14. Observe the entries in the Local File Path, Local File Name, and Name fields. Type **Owner's Manual for the Super Lite Golf Cart Product** in the Description field.
15. Click the **Next** button to go to the Set Attachments step window.
16. In the Attachments table, click the **New local file attachment** icon .
17. In the Open window, browse to the D:\Student\Intro_to_PDMLink_9.0\Super Lite Golf Cart\Documents folder and select the **sl golf cart cover image.jpg** file.
18. Click the **Open** button to add the file to the Attachments table.
19. Click the **Finish** button to create the document.

20. In the Microsoft Internet Explorer Alert window, click the **OK** button to confirm the creation of the document.
21. Observe the Super Lite Golf Cart Owner's Manual document added to the Documentation folder.

This completes the exercise.

For Educational Use Only

Exercise 2: Creating Multiple Documents

Objectives

After successfully completing this exercise, you will know how to:

- Create multiple documents simultaneously.

Scenario

The Super Lite Golf Cart Owner's Manual is composed of individually authored chapter documents that are published with the top level Super Lite Golf Cart Owner's Manual document. Erica has created the first four chapters of the Owner's Manual. She wants to upload these documents to the Documentation folder of the Super Lite Golf Cart product.



In this exercise, you take the role of Erica Hill. You will create multiple documents to store the Owner's Manual Chapter files.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as Erica Hill (ehill/ptc).
- Start on the Documentation Folders page of the Super Lite Golf Cart product.
- Establish a minimized Windows Explorer window open to the D:\Student\Intro_to_PDM-Link_9.0\Super Lite Golf Cart\Documents folder. You need to position and size this window to support the dragging and dropping of files into the New Multiple Documents window.

Task 1. Create multiple document objects to store and manage the Owner's Manual Chapter files.

1. In the Folder Contents table, click the **New Multiple Documents** icon  to open the New Multiple Documents Wizard.
2. On the Define Object page, click the **Type** drop-down menu.
3. Select **Document** from the Type drop-down menu.
4. Click the **Next** button to go to the Name step window.
5. In the Windows taskbar, click the **Documents** button to expand the Windows Explorer window.
6. Select the **SL OM Chapter 1.doc** file.
7. Press the SHIFT key and select the **SL OM Chapter 4.doc** file to select all four module files.
8. Drag all of the selected files from Windows Explorer to the **Drag and Drop** icon  in the Attributes table.
9. Observe the entries in the Name fields. Click the **Next** button to go to the Set Additional Attributes step window.
10. Observe the Location selection. Click the **Finish** button to create the documents.
11. In the Microsoft Internet Explorer Alert window, click the **OK** button to confirm the creation of the documents.
12. Observe the Owner's Manual Chapters added to the Documentation folder.

This completes the exercise.

Exercise 3: Creating Document Relationships

Objectives

After successfully completing this exercise, you will know how to:

- Create document referencing relationships.
- Create document structural relationships.

Scenario




In this exercise, you take the role of Erica Hill. You will create a referencing relationship between the Super Lite Golf Cart Owner's Manual and the Super Lite Golf Cart Specification documents. You will also establish a structural relationship between the Super Lite Golf Cart Owner's Manual and the Super Lite Golf Cart Owner's Manual Chapter documents.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as Erica Hill (ehill@ptc).
- Start on the Documentation Folders page of the Super Lite Golf Cart product.

Task 1. Create a document reference relationship between the Super Lite Golf Cart Owner's Manual document object and the Super Lite Golf Cart Specifications document object.

1. In the Folder Contents table, select the check box for the **SL Golf Cart Spec** document.
2. Click the **Copy Selected Object** icon  to add the document to the Clipboard.
3. In the Microsoft Internet Explorer Alert window, click the **OK** button to confirm the copy action.
4. Click the **View information** icon  for the SL Golf Cart Owner's Manual document.
5. Click the **Related Objects** drop-down menu.
6. Select **Documents** from the Related Objects drop-down menu.
7. In the References Documents table, click the **Paste References Document from Clipboard** icon  to paste the document in the table.
8. In the Microsoft Internet Explorer Confirm window, click the **OK** button to confirm the check out action.

Task 2. Create a structural relationship between the Super Lite Golf Cart Owner's Manual document object and the Super Lite Golf Cart Owner's Manual Chapter document objects.

1. Click the **Structure** menu.
2. In the Document Structure table, click the **Actions** drop-down menu to the right of the SL Golf Cart Owner's Manual document.
3. Select **Add Documents**.
4. In the Search Results window, type **SL OM Chapter*** in the Name field.
5. Click the **Search** button.
6. Select the **Select all rows on this page** check box to select all of the Super Lite Golf Cart Owner's Manual Chapter documents.
7. Click the **Finish** button to add the documents as children.
8. Click the **Actions** drop-down menu for the SL Golf Cart Owner's Manual document.
9. Select **Check In** from the Actions drop-down menu.

10. In the Check In window, type **Added a reference and structure to the document** in the Comments field.
11. Click the **OK** button to complete the check in.

This completes the exercise.

For Educational Use Only

Exercise 4: Modifying Documents

Objectives

After successfully completing this exercise, you will know how to:

- Modify a document's details and content by checking it out, making changes, and checking it back in.

Scenario

Erica used the Standard Golf Cart Design Requirements document as a template for writing the Super Lite Golf Cart Design Requirements document. After reviewing the document she uploaded to PDMLink, Erica realized that she forgot to change the product in the document title.

In this exercise, you take the role of Erica Hill. You will check out and download the Super Lite Golf Cart Design Requirements document. You will change the document title and then you will check the document back in to PDMLink.

Initial Conditions



To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as Erica Hill (ehill/ptc).
- Start on the Details page of the Super Lite Golf Cart Owner's Manual document object.

Task 1. Check out and download the SL Golf Cart Req document.

1. Select the **Folders** minor tab to access the Folders page.
2. In the Folder Contents table, click the **Actions** drop-down menu for the SL Golf Cart Req document.
3. Select **Check Out and Download** from the Actions drop-down menu.
4. In the Choose File Operation window, select the **OK** button to open the document in Microsoft Word.

Task 2. Edit the SL Golf Cart Req Word document.

1. In the SL Golf Cart Req Microsoft Word document, replace Standard Golf Cart in the document title and type **Super Lite Golf Cart** in it's place.
2. Click the **Save** button  to save the SL Golf Cart Req Microsoft Word document.
3. Click the **Windows Close** button  to close the Super Lite Golf Cart Design Requirements Microsoft Word window.

Task 3. Check in the SL Golf Cart Req document.

1. In the PDMLink window, click the **Actions** drop-down menu for the Super Lite Golf Cart Req document.
2. Select **Check In** from the Actions drop-down menu.
3. Select the **Upload selected primary file** option to upload the modified file.
4. Click the lower part of the scroll bar to scroll down and view the Comments area.
5. In the Check In window, type **Updated the document title** in the Comments field.
6. Click the **OK** button to complete the check in.

This completes the exercise.

Exercise 5: Associating Documents to Windchill Parts

Objectives

After successfully completing this exercise, you will know how to:

- Associate standard documents to Windchill parts.

Scenario



In this exercise, you again take the role of Erica Hill. You will check out the Super Lite Golf Cart end item and associate the SL Golf Cart Owner's Manual document with the end item.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as Erica Hill (ehill/ptc).
- Start on the Documentation Folders page of the Super Lite Golf Cart product.

Task 1. Associate the Super Lite Golf Cart Owner's Manual with the golf cart end item.

1. In the left pane of the Folders page, select the **CAD Models** folder to view the contents.
2. Click the lower part of the Folder Contents scroll bar to scroll down and view the SL_Golf_Cart (FC1400) end item.
3. Click the **View information** icon  for the SL_Golf_Cart end item to access the details page.
4. Click the **Related Objects** drop-down menu.
5. Select **Documents** to view the associated documents.
6. In the Described by Documents table, click the **Add Described by Document** icon  to search for a document.
7. In the Microsoft Internet Explorer alert dialog box, click **OK** to check out the object.
8. On the Described By Documents page, type **SL Golf Cart*** in the Name field.
9. Click the **Search** button to launch the search.
10. In the Search Results table, select the check box for the SL Golf Cart Owner's Manual.
11. Click the **OK** button to associate the document with the golf cart end item.
12. Click the **Actions** drop-down menu in the top-left corner of the end item details page.
13. Select **Check In**.
14. Type **Associated the Owner's Manual document** in the Comments field.
15. In the Check In dialog box, click **OK** to complete the check in process.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Understand the purpose and capabilities of document objects.
- Create documents using various methods.
- Establish relationships between documents.
- Modify a document by performing a check out, updating document details or content, and performing a check in.
- Conduct document management functions using Desktop Integration.

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. All of these statements are correct about document objects EXCEPT...
 - A - a document can form a structural relationship with another document object.
 - B - a document can form a reference relationship with another document or part object.
 - C - a document can not be a member of a baseline.
 - D - a document is a versioned object.
2. When creating multiple documents, you are able to specify almost all of the same attributes you can when creating single documents. Which attributes are you NOT able to define when creating multiple documents?
 - A - Attachment
 - B - Name
 - C - Primary Content
 - D - Description
3. Which of the following statements is FALSE about checking out a document?
 - A - It signals to others that the document is being modified.
 - B - It prevents others from viewing the original content file.
 - C - The checked out document can only be checked in by the person that checked it out.
 - D - None of the above.

For Educational Use Only

Participating in Processes

Introduction

In this module, you learn about the Windchill PDMLink 9.0 process automation capabilities and the life cycles and transitions that enable them. You learn how to use promotion requests to promote objects, and how to manage the tasks that they deliver to you.

Objectives

After completing this module, you will be able to:

- Explain how life cycles, workflows, and teams help manage the development process.
- Identify differences between the basic and the advanced life cycle.
- Create promotion requests.
- Manage and complete tasks.
- Reassign tasks to other team members.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

For Educational Use Only

Participating in Processes

Business Process System

- ◉ Manages object development
- ◉ Promotes objects
- ◉ Assigns tasking

	Name: Approve Promotion Request
	Subject: Promotion Request (Golf Cart Assembly)
	State: In Work
	Instructions: You have been selected as an Approver for this promotion request...
	Assigned: 1 Jul 2007
	Deadline: 7 Jul 2007
	Initiator: John Evans

Assignments

- ◉ Complete tasks
- ◉ Reassign tasks to others
- ◉ Update a task's deadline



Participating in Processes

PDMLink uses a business process system to manage object development, control object maturity, and assign tasking. When the system assigns you a task, the task is delivered to your Assignments table. From the Assignments table, you can complete a task, reassign it to another user, or change the task's deadline.



PDMLink may also deliver tasks through your e-mail account.

Tasks Delivery Mechanism

Tasks are delivered to you through

- ⦿ Basic life cycles
- ⦿ Advanced life cycles

	Name:	Approve Promotion Request
	Subject:	Promotion Request (Golf Cart Assembly)
	State:	In Work
	Instructions:	You have been selected as an Approver for this promotion request...
	Assigned:	1 Jul 2007
	Deadline:	7 Jul 2007
	Initiator:	John Evans

Purpose

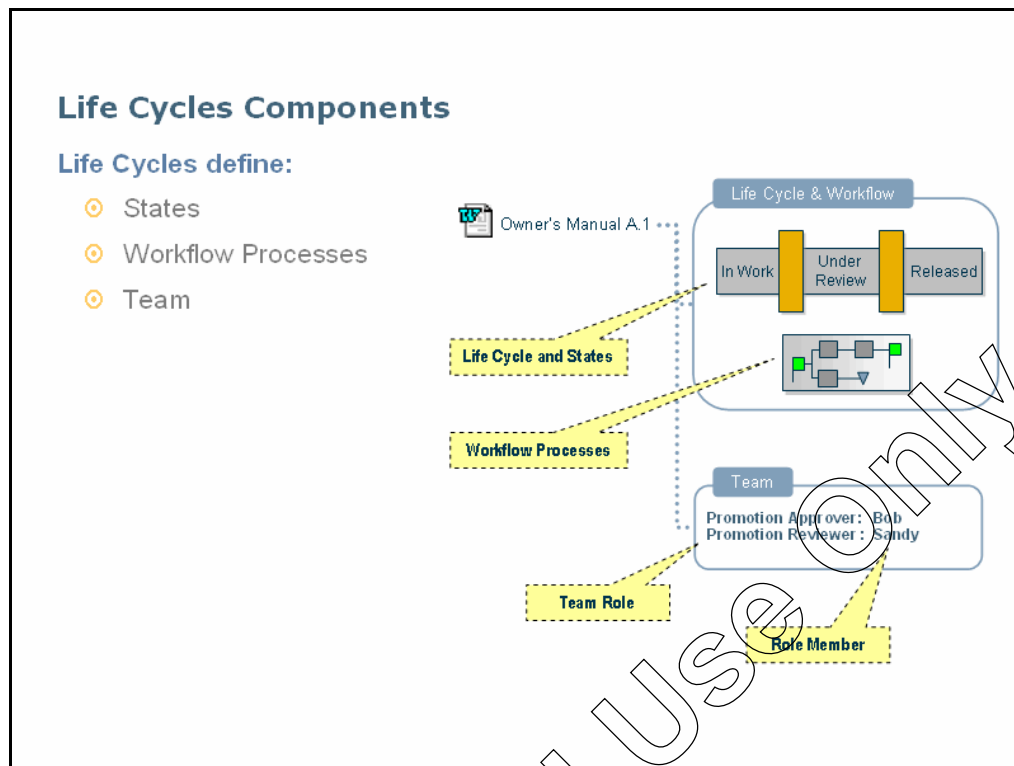
- ⦿ Promote objects to Released
- ⦿ Change objects by routing them through the Change Process

Tasks Delivery Mechanism

To understand how a task is delegated to your Assignments table, you have to understand how life cycles, workflows, and teams work together to deliver tasks to you. In short, the life cycle establishes the states in which the object can exist (for example, in work, or released). The workflow describes all of the individual tasks and assigns roles to them. And lastly, the team matches those roles in the workflow to real users. There are two types of life cycles: basic life cycles and advanced life cycles.

Regardless of which life cycle is managing the processes that delivers tasks to you, their purpose remains the same: to automatically route objects through a process. Two typical uses for life cycles are to manage the review and promotion process and the change management process.

This module explores how tasks get assigned to you and how to complete them. You also explore how to promote objects through their life cycle states.

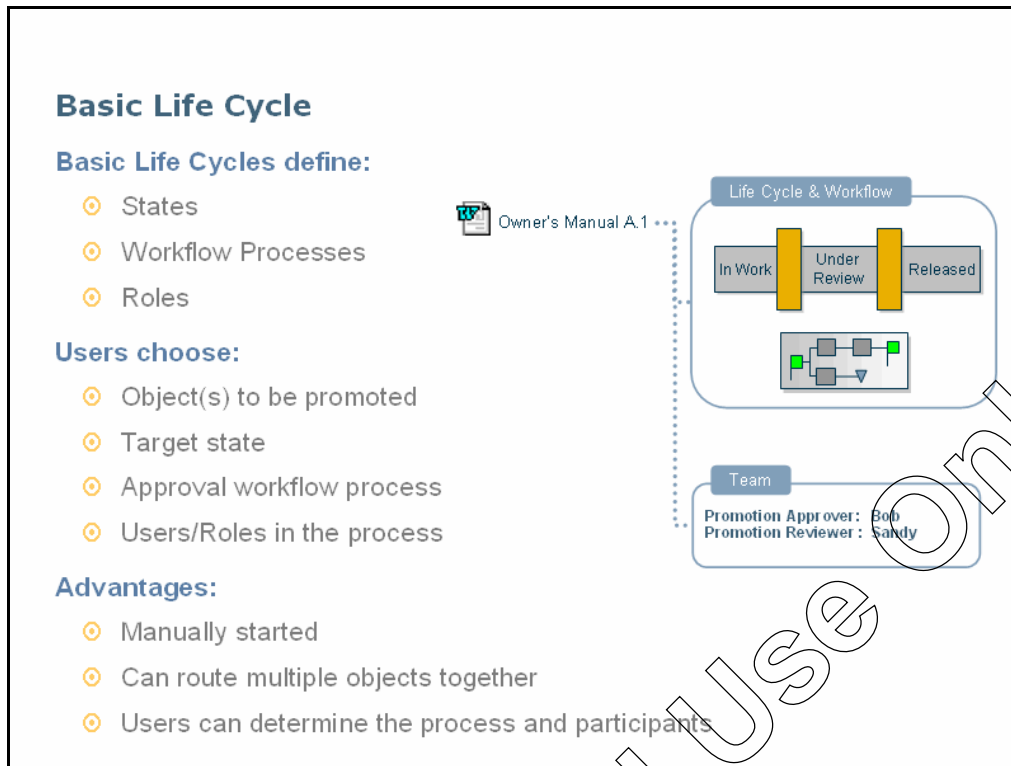


Life Cycle Components

In Windchill, the life cycle is the core capability to manage an item's maturity (that is, its life cycle state) as well as access control policies for a set of roles in the system. Each item type in a Windchill system (such as a part, specification, or drawing) can have unique sets of life cycle states and access control policies. Object initiation rules are used to designate which life cycle an item type is assigned when a user creates a new item of that type. Workflows associated with an item's life cycle manage the maturing processes from state to state through workflow activity templates. In detail, life cycles are important because of the following:

1. A life cycle establishes the major states in which an associated object can exist. For example, a specification may be able to exist in the In Work, Released, or Canceled states.
2. Life cycles then use workflows to define a process. As a document is routed through that process, users' decisions affect the state of the document associated to the life cycle. For example, a task might require the product manager to approve a document, and if he or she does, the document will go from In Work to Released.
3. Each task within the workflow has a role that is responsible for completing it. The workflow uses the Product or Library team to determine who fulfills that role, and then sends the designated user the task.

However, there are differences between exactly how basic and advanced life cycles accomplish this.



Basic Life Cycle

Basic Life Cycles define the states that an object can exist in, the workflow processes that can be used to change states, and the roles that are used in those processes. They are initiated manually, by a user who chooses the following criteria:

- What will be reviewed for promotion.
- Which state the object(s) will be promoted to.
- Which workflow process they will use to reach that state.
- Who will play what part in that process.

There are a few advantages of using basic life cycles over advanced life cycles. Basic life cycles require a user to initiate them and to choose which objects/objects are going to be reviewed. They also require the user to determine which workflow process and participants will be included in the process.

Advanced Life Cycle

Advanced life cycles define:

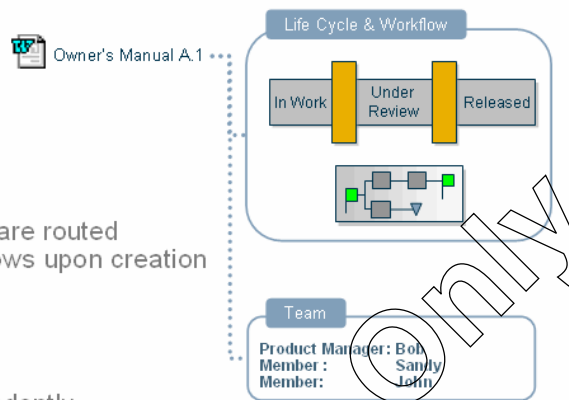
- States
- Workflow Processes
- Roles

Initiated by the system:

- Object types automatically are routed through pre-defined workflows upon creation

Advantages:

- Automatically started
- Each object routed independently
- Use pre-determined workflows to route objects
- Participants are pre-defined, though are often based on team roles



Advanced Life Cycle

Like basic life cycles, advanced life cycles define the states that an object can exist in, the workflow processes that can be used to change states, and the roles that are used in those processes. However, they are initiated automatically by PDMLink based on criteria established by an administrator. For example, documents may use one approval process, while reference documents use another. As soon as an object that uses an automatic life cycle is created, the workflow processes begin.

There are many advantages to using advanced life cycles:

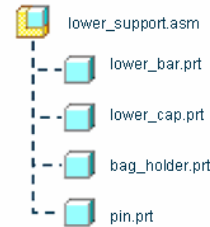
- Advanced life cycles are automatically started, ensuring that each object is routed through the appropriate, pre-defined process.
- Each object is routed independently, which can be useful for objects that require more scrutiny.
- Advanced life cycles use pre-determined workflows to route objects and ensure consistency.
- Finally, when you use advanced life cycles, participants are pre-defined, although this is often based on Team roles, which can be flexible.

Promoting Objects using a Promotion Request

Promotion Requests

- ⦿ Organize and manage objects for promotion.
- ⦿ Maintain a history of the promotion process and the users involved.
- ⦿ Record discussions and comments made during the promotion process.

Lower Support Promotion Request



Promoting Objects using a Promotion Request

Because the process of promoting objects through a basic life cycle is not automatic, a user must initiate the process. A six-step process enables you to define the promotion request.

The Promote action from an object's Actions menu enables you to set the state of one or more items to a new life cycle state as part of a review process. The Promote action generates and uses the promotion request object as the vehicle for managing object promotion. A promotion request object organizes and manages objects for promotion, maintains a history of the promotion process and the users involved, and records discussions and comments made during the promotion process. This module explores this process in detail over the next several slides.

Viewing Promotion Requests

Promotion Request Capabilities

- Details
 - Attributes
 - Histories
 - Maturity
 - Routing/Process History
 - Collaboration
 - Discussion
 - Subscriptions
 - Team
- Content
 - Attachments
 - Notebook
- Relationships
 - Promotion Objects

Actions 00001 (leg_std.asm, LEG_STD.ASM, A.1, 2007-06-26)

Name: leg_std.asm, LEG_STD.ASM, A.1, 2007-06-26

Description: Release of golf cart leg assembly

State: Open - Under Review - Approved - Rejected

Promotion State: Released

Identify: jevans

[More Attributes](#)

General Related Objects History Collaboration

Promotion Objects (18 of 18 total objects)

Number	Version	Actions	Name	Promotion State
LEFT_ACTUATOR_STD.ASM	A.1	Actions	left_actuator_std.asm	In Work
LOWER_RIGHT_ARM_STD.PRT	A.1	Actions	lower_right_arm_std.prt	In Work
AXLE_FASTENER_STD.PRT	A.1	Actions	axle_fastener_std.prt	In Work
ACTUATOR_LOCK_STD.PRT	A.1	Actions	actuator_lock_std.prt	In Work
UPPER_RIGHT_ARM_STD.PRT	A.1	Actions	upper_right_arm_std.prt	In Work
RIGHT_ACTUATOR_STD.ASM	A.1	Actions	right_actuator_std.asm	In Work
UPPER_ACTUATOR_STD.PRT	A.1	Actions	upper_actuator_std.prt	In Work
LEG_SKEL_STD.PRT	A.1	Actions	leg_skel_std.prt	In Work
NUT_1_4_STD.PRT	A.1	Actions	nut_1_4_std.prt	In Work
LOWER_LEFT_ACTUATOR_STD.PRT	A.1	Actions	lower_left_actuator_std.prt	In Work

Viewing Promotion Requests

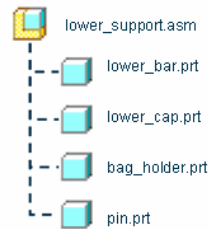
Similar to other objects, promotion requests have three primary capabilities; details, content, and relationships. Promotion requests also have a details page that is similar in format to the other object types. The lower part of the details page provides drop-down menus that enable you to view the content, relationships, and histories of the promotion request.

Creating Promotion Requests

New Promotion Request Wizard

1. Set Attributes
2. Collect Objects
3. Edit Object List
4. Select State for Promotion
5. Select Process
6. Define Participants

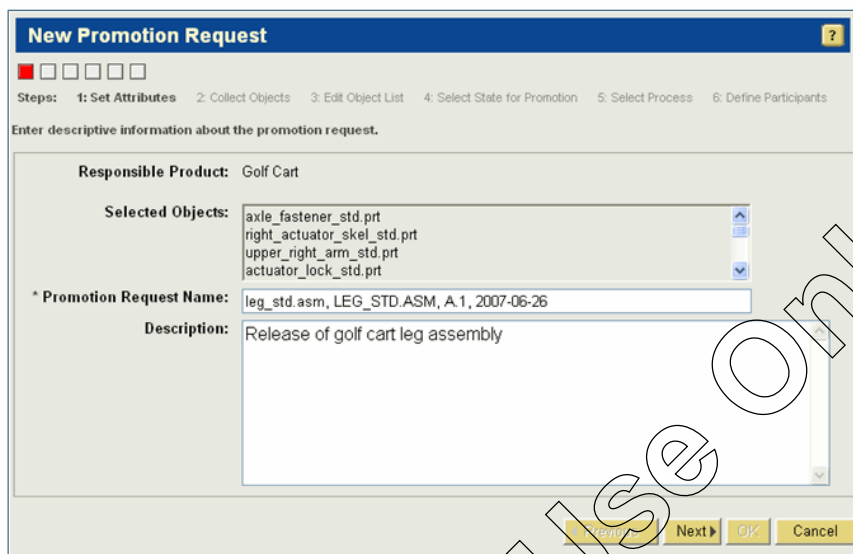
Lower Support Promotion Request



Creating Promotion Requests

You can create a promotion request by selecting the **Promote** command from an object's Actions menu. This opens the New Promotion Request Wizard which divides the creation of a promotion request into the following six steps: Set Attributes, Collect Objects, Edit Object List, Select State for Promotion, Select Process, and Define Participants.

New Promotion Request: Set Attributes

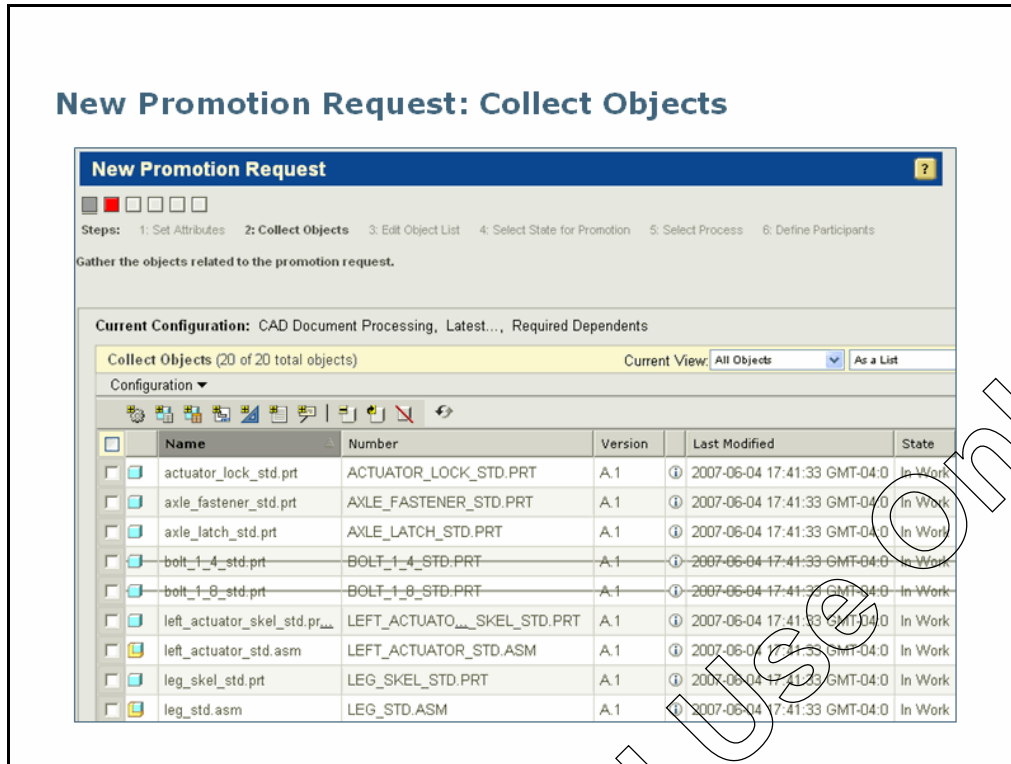


New Promotion Request: Set Attributes

In the Set Attributes step of the New Promotion Request Wizard, you are required to provide general information about the promotion request:

- The Responsible Product or Library field is automatically populated with the name of the Product or Library in which the selected object is stored.
- The Selected Objects field is automatically populated with the name of the object or objects that you initially selected to promote.
- The Promotion Request Name field is automatically populated with information from the first object selected. If you do not want to use the default name, you can replace it with your desired name.
- The Description field requires you to provide a description for the promotion request.

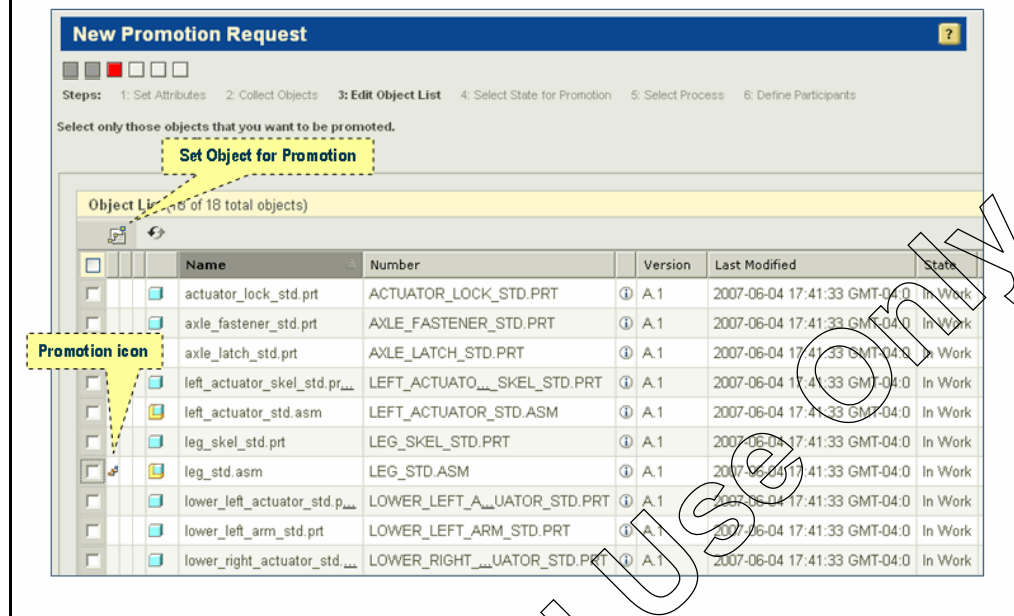
New Promotion Request: Collect Objects



New Promotion Request: Collect Objects

In the Collect Objects step window, you gather all objects related to the initially selected objects. From this list, you can select the exact objects to be promoted in the next step. For example, the graphic in the slide shows all of the dependent CAD documents for the initially selected leg_std.asm CAD document listed in the Collect Objects table. Using the action buttons in the Collect Objects table, the fastener CAD documents are excluded from the promotion, which is why they are marked through with a line.

New Promotion Request: Edit Object List



New Promotion Request: Edit Object List

In the Edit Object List step window, you can refine the list you created in the previous step by selecting only those objects that you want to promote. Objects selected for promotion display the promote icon.



Objects selected for promotion must have at least one available target state in common. Also, you cannot select objects that are currently checked out. Error messages appear in both cases.

The initially selected objects are selected for promotion by default. If an object is ineligible for promotion, you are unable to select that object for promotion and an error message appears explaining why the object is ineligible. One reason why an object may be ineligible for promotion is because it is currently checked out or locked in some other manner.

New Promotion Request: Select State for Promotion

New Promotion Request ?

Steps: 1: Set Attributes 2: Collect Objects 3: Edit Object List 4: **Select State for Promotion** 5: Select Process 6: Define Participants

Select the state to which you want the objects promoted.

* State for Promotion:

Objects to be Promoted (Total objects) Current View:

Name	Number	Version	Last Modified	State	Available States
actuator_lock_std prt	ACTUATOR_LOCK_STD.PRT	A.1	2007-06-04 17:41:33 GMT-04:0	In Work	In Work, Canceled
axle_fastener_std prt	AXLE_FASTENER_STD.PRT	A.1	2007-06-04 17:41:33 GMT-04:0	In Work	In Work, Canceled
axle_latch_std prt	AXLE_LATCH_STD.PRT	A.1	2007-06-04 17:41:33 GMT-04:0	In Work	In Work, Canceled
left_actuator_skel_std prt	LEFT_ACTUATOR_SKEL_STD.PRT	A.1	2007-06-04 17:41:33 GMT-04:0	In Work	In Work, Canceled
left_actuator_std asm	LEFT_ACTUATOR_STD.ASM	A.1	2007-06-04 17:41:33 GMT-04:0	In Work	In Work, Canceled
leg_skel_std prt	LEG_SKEL_STD.PRT	A.1	2007-06-04 17:41:33 GMT-04:0	In Work	In Work, Canceled
leg_std asm	LEG_STD.ASM	A.1	2007-06-04 17:41:33 GMT-04:0	In Work	In Work, Canceled
lower_left_actuator_std prt	LOWER_LEFT_ACTUATOR_STD.PRT	A.1	2007-06-04 17:41:33 GMT-04:0	In Work	In Work, Canceled
lower_left_arm_std prt	LOWER_LEFT_ARM_STD.PRT	A.1	2007-06-04 17:41:33 GMT-04:0	In Work	In Work, Canceled

New Promotion Request: Select State for Promotion

In the Select State for Promotion step window, you can use the State for Promotion drop-down list to select the target state. Only target states that are common to all of the objects are available from the drop-down list. If there is only one state in common for all objects, that state is automatically selected.

New Promotion Request: Select Process

New Promotion Request
?

■ ■ ■ ■ ■

Steps: 1: Set Attributes 2: Collect Objects 3: Edit Object List 4: Select State for Promotion **5: Select Process** 6: Define Participants

Select the promotion process you want the objects to follow.

Process List (2 objects)

Name	Description
<input checked="" type="radio"/> Promotion Request Approval Process	A process to invite Approvers from the Promotion Approvers group and Reviewers from the Promotion Reviewers group as well as participants added by the request author to provide comment on these items and approve or reject this request. All Approvers must approve this request in order for the items to be promoted to the target state.
<input type="radio"/> Promotion Request Review Process	A process to invite Reviewers from the Promotion Reviewers group and participants added by the request author to provide comments on these items. This process will automatically promote items on the Promotion Request to the requested target state.

(1 objects selected)

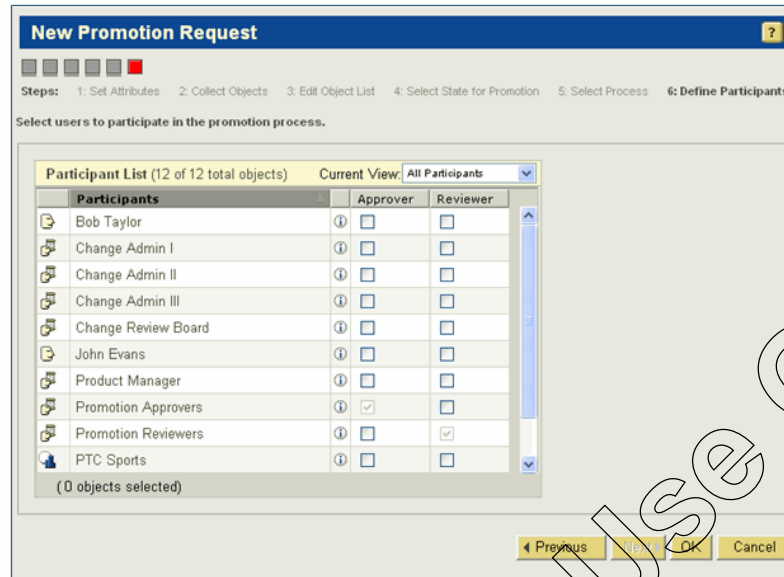
◀ Previous
Next ▶
OK
Cancel

New Promotion Request: Select Process

In the Select Process step, you select the process through which the promotion request proceeds. Out-of-the-box, PDMLink provides two promotion processes:

- The Promotion Request Approval process involves two parallel events: a formal review and approval conducted by the Promotion Approvers, and a review for feedback conducted by the Promotion Reviewers. The Promotion Approvers control whether objects undergoing review are promoted or rejected. If any of the Promotion Approvers reject the promotion request, the promotion objects are reset to their original state and the author and promotion team are notified. If all of the Approvers approve the promotion request, the promotion objects are promoted to the target state and the author and promotion team are notified.
- The Promotion Request Review process differs from the Promotion Request Approval process in that it only involves a single event: the review for feedback conducted by the Promotion Reviewers. The Promotion Request Review process has no formal review and approval event and objects undergoing review are promoted regardless of the feedback provided by the Promotion Reviewers.

New Promotion Request: Define Participants



New Promotion Request

Steps: 1: Set Attributes 2: Collect Objects 3: Edit Object List 4: Select State for Promotion 5: Select Process 6: Define Participants

Select users to participate in the promotion process.

Participant List (12 of 12 total objects) Current View: All Participants

Participants	Approver	Reviewer
Bob Taylor	<input type="checkbox"/>	<input type="checkbox"/>
Change Admin I	<input type="checkbox"/>	<input type="checkbox"/>
Change Admin II	<input type="checkbox"/>	<input type="checkbox"/>
Change Admin III	<input type="checkbox"/>	<input type="checkbox"/>
Change Review Board	<input type="checkbox"/>	<input type="checkbox"/>
John Evans	<input type="checkbox"/>	<input type="checkbox"/>
Product Manager	<input type="checkbox"/>	<input type="checkbox"/>
Promotion Approvers	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Promotion Reviewers	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PTC Sports	<input type="checkbox"/>	<input type="checkbox"/>

(0 objects selected)

Previous Next OK Cancel

New Promotion Request: Define Participants

In the Define Participants step window, you select the users you want to participate in the promotion process. The process selected in the previous step determines the available process roles. By default, users assigned to the Promotion Approvers and/or Promotion Reviewers roles in the Product or Library team are selected and required. However, you can add additional individuals or groups to the process roles, thereby creating a unique team assignment for this promotion request.

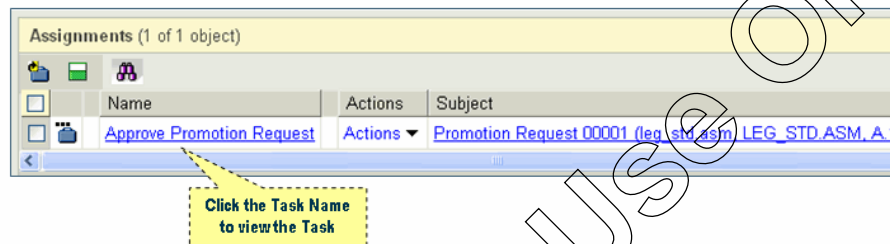
Completing Tasks

Basic Steps

- Open the task
- Follow instructions
- Click the Task Complete button

Results

- Automatically routes the object to the next user(s) in the process
- Some tasks change states of the subject object



Completing Tasks

If you are identified as a participant in a promotion process, you will receive a task in your Assignments table. The basic steps for completing any task involve viewing the task, following the instructions, and then clicking the Complete Task button. Once the task is completed, it is removed from your assignments list and the process automatically routes the object to the next user or users in the process. Completing some tasks will change states of the subject object or objects.

Completing Promotion Tasks

Steps

- 1. Access the Task
- 2. Read the Instructions
- 3. Review Promotion Objects
 - View Details
 - View Content
- 4. Review Process Information
 - Routing/Process Status
 - Reassignment History
 - Notebook
 - Discussions
- 5. Complete Task Form
 - Enter Comments
 - Select Disposition
- 6. Complete the Task

Approve Promotion Request

Instructions: You have been selected as an approver for this promotion request.

1. Review the object displayed.
2. Review the promotion request.
3. Enter comments in the Comments text field below.
4. Click Approve or Reject.
5. Enter comments in the Comments text field below.
6. Click Complete Task to advance the promotion request.

Process: (Secured information)

Process Initiator: John Evans

Assignee: John Evans

Role: Approver

Priority: Highest

Deadline:

Subject: [Promotion Request 00001 \(leg_std_asm_LEG_STD_ASM_A.1_2007-05-26\)](#) Status Potential

Actions:

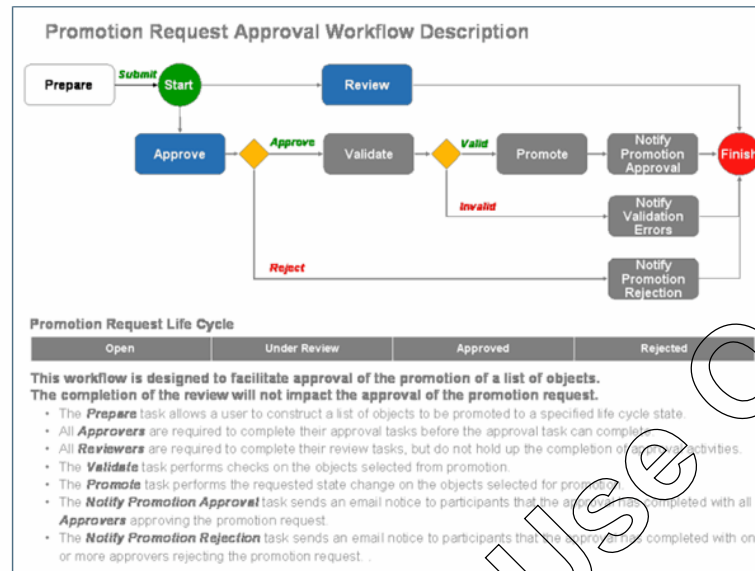
Comments:

☐ Approve ☐ Reject

Completing Promotion Tasks

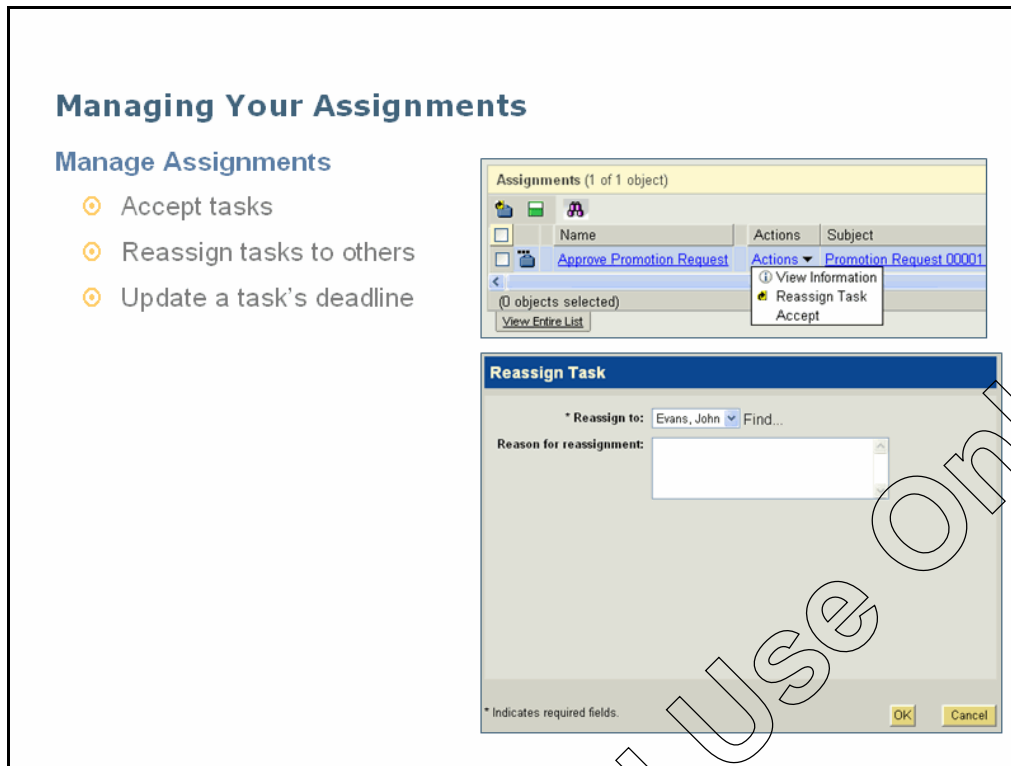
To complete a promotion task, you access the task by clicking its name in your Assignments table. On the task page, you read the instructions to gain a full understanding of what is required to complete the task. Next, you should review the promotion objects in the Promotion Objects table. This may include viewing the details and content of the promotion objects. You should also review the promotion process information, located in the tables at the bottom of the task page. Finally, you complete the task form by entering comments, selecting a disposition such as Approve or Reject, and clicking the Complete Task button.

Viewing Processes



Viewing Processes

From the task details page, you can access the workflow diagram. This diagram shows details, such as life cycle name and the related workflow activities.



Managing Your Assignments

Any tasks assigned to you are displayed in your Assignments table. From this list, you are able to accept tasks delivered to a group and reassign tasks to others.

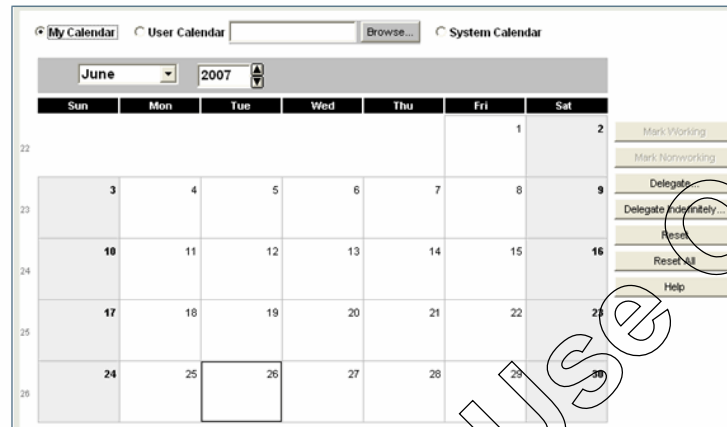
- To accept a task, select Accept from a task's Actions menu. You can use this command to accept the responsibility for completing the task if it has been delivered to a group of users. Selecting it will pull the task out of the other users' Assignments list.
- To reassign a task, select the Reassign Task command, and then select who will receive the task and provide a reason for the reassignment.

The commands available to you depend on the type of task and your access in the system.

Managing Your Calendar

Manage Your Calendar

- ✦ Assign non-working days
- ✦ Designate days to automatically delegate tasks assigned to you



Managing Your Calendar

You can use the Windchill calendar to view your own calendar, other users' calendars, or the System calendar if you are the administrator. Each calendar displays a work schedule indicating workdays and non-work days. This schedule is used for assigning tasks that have deadlines. All calendars display work schedules. Workdays are displayed in white and non-work days are shaded.

Calendar functionality depends on which calendar you are viewing. When viewing your calendar, you can highlight a day or consecutive days and click Reset to cancel any of your changes or delegations.

You can mark days as non-working, or automatically delegate tasks that are received on certain days.

- To mark a day non-working, select it and click the Mark Nonworking button. Tasks can have deadlines that are relative. If you mark a day nonworking, the task does not count days that are marked as nonworking against your allotted time.
- To delegate tasks, select the day or days that you wish to delegate tasks, and click the Delegate or Delegate Indefinitely buttons. You can then search for and select the user that will receive tasks delivered to you during those days.

Lab Exercises

Exercise 1: Promoting Objects using Basic Life Cycles

Objectives

After successfully completing this exercise, you will know how to:

- Promote objects using basic life cycles.

Scenario

In this exercise, you take the roles of John Evans, Sandy Miller, and Bob Taylor as they route the golf cart leg assembly and all of its dependent parts through an approval process.



First, you take the role of John as he creates a promotion request for the leg assembly. Next, you take the role of Sandy Miller, as she reviews the assembly, and finally you take the role of Bob Taylor, as he promotes the assembly.


Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:




- Open three Web browser sessions; one logged on to PDMLink as John Evans (jevans/ptc); one logged on to PDMLink as Sandy Miller (smiller/ptc); and one logged on to PDMLink as Bob Taylor (btaylor/ptc).
- Each Web Browser session should start on the user's Overview page of the Home.
- Arrange the windows with John's session on top, Sandy's session below John's, and Bob's session on the bottom.

Task 1. As John Evans, submit the golf cart leg assembly for promotion.




1. Select the **Product** major tab to access the Products menu.
2. Click the **Products** drop-down menu just below the Home major tab.
3. Select **Super Lite Golf Cart** from the Products drop-down menu.
4. Ensure that the Folders page is open. In the left pane, select the **CAD Model** folder to view the contents.
5. Click the lower part of the Folder Contents table scroll bar to scroll down and view the leg assembly.
6. Click the **Actions** drop-down menu for the leg_sl.asm CAD document. (Ensure that you are not selecting the Actions menu for the leg_sl.asm Windchill part.)
7. Select **Promote** from the Actions drop-down menu to open the New Promotion Request Wizard.
8. On the Set Attributes page, observe the populated fields. Type **Release of the leg assembly** in the Description field.
9. Click the **Next** button.
10. On the Collect Objects step, select the **Select all rows** check box.
11. Click the **Collect related parts** icon  to add all related Windchill parts.
12. Click the **Next** button.
13. Select the **Select all rows** check box at the upper left of the Object List table.
14. Click the **Set Object for Promotion** icon .
15. Click the **Next** button.
16. Click the **State for Promotion** drop-down menu.
17. Select **Released** from the State for Promotion drop-down menu.

18. Click the **Next** button.
19. Verify the default selection is Promotion Request Approval Process and click the **Next** button.
20. Click the **Finish** button to create the promotion request.
21. Click the **Windows Minimize** button  to minimize John's Internet Explorer window.


Task 2. As Sandy Miller, complete the task of reviewing the leg assembly.


1. On Sandy's Internet Explorer window, click the **Refresh** button  to refresh the Overview page of the Home major tab.
2. In the Assignments table, click the **Review Promotion Request** link for the leg assembly to open the task page.
3. Click the lower part of the scroll bar to scroll down.
4. In the Promotion Objects table, click the **View information** icon  for the leg_sl.asm CAD document.
5. Click the browser's **Back** button to go the previous page.
6. In the Review Promotion Request task, type **Looks good. Good job.** in the Comments field.
7. Click the **Complete Task** button to complete the Review Promotion Request task.
8. Click the **Windows Minimize** button  to minimize Sandy's Internet Explorer window.

Task 3. As Bob Taylor, complete the approve task for the leg assembly, thereby promoting it.

1. On Bob's Internet Explorer window, click the **Refresh** button  to refresh the Overview page of the Home major tab.
2. In the Assignments table, click the **Approve Promotion Request** link for the leg assembly to open the task page. (Ensure that you do not click the Approve Promotion Request task for the upper support assembly.)
3. Click the lower part of the scroll bar to scroll down.
4. In the Promotion Objects table, click the **View information** icon  for the leg_sl.asm CAD document.
5. Click the browser's **Back** button to go the previous page.
6. In the Approve Promotion Request task, type **Looks good. Approved for release.** in the Comments field.
7. Select the **Approve** disposition option.
8. Click the **Complete Task** button to complete the Approve Promotion Request task.
9. Click the **Windows Minimize** button  to minimize Bob's Internet Explorer window.

Task 4. As John Evans, review the promotion request and leg assembly's history.

1. In the Windows taskbar, click the **Folders: CAD Models** button to expand John's Internet Explorer window.
2. Select the **Home** major tab.
3. In the Updates table, click the **View information** icon  for the leg promotion request.
4. Click the **History** drop-down menu.
5. Select **Routing/Process** from the History drop-down menu.
6. Observe the routing and process history of the promotion request. Click the **Related Objects** drop-down menu.
7. Select **Promotion Objects** from the Related Objects drop-down menu.

8. In the Promotion Objects table, click the **View information** icon  for the leg_sl.asm CAD document.
9. Click the **History** drop-down menu.
10. Select **Maturity** from the History drop-down menu.

This completes the exercise.

For Educational Use Only

Exercise 2: Promoting Objects using Advanced Life Cycles

Objectives

After successfully completing this exercise, you will know how to:

- Promote objects using the advanced life cycles.

Scenario

In this exercise, you take the roles of Erica, Sandy, and Bob as they work with the Super Lite Golf Cart Owner's Manual that Erica recently created. In particular:

- As Erica Hill, you will submit the specification for review.
- As Sandy Miller, you will review it.
- As Bob Taylor, you will promote it to the next state.






PTC Sports uses an advanced life cycle to manage documents, so the process is initiated automatically.

Initial Conditions


To successfully complete this exercise, you must establish the following initial conditions:




- Open three Web browser sessions; one logged on to PDMLink as Erica Hill (ehill/ptc); one logged on to PDMLink as Sandy Miller (smiller/ptc); and one logged on to PDMLink as Bob Taylor (btaylor/ptc).
- Each Web Browser session should start on the user's Overview page of the Home.
- Arrange the windows with Erica's session on top, Sandy's session below Erica's, and Bob's session on the bottom.

Task 1. As Erica Hill, submit the Super Lite Golf Cart Owner's Manual.


- In the Assignments table, click the **Submit** link for the SL Golf Cart Owner's Manual to open the Submit task.
- Click the **View Lightweight Process Image** icon next to the Process label  to view the workflow image.
- In the File Download dialog box, click **Open** to open the workflow image.
- Click the **Windows Close** button  to close the Microsoft Photo Editor.
- Click the link for the document next to the Subject label to open the document details page.
- Click the Microsoft Word icon  for the Super Lite Golf Cart Owner's Manual document object to open the document in Microsoft Word.
- In the Choose File Operation window, click the **OK** button to open the file.
- Click the **Windows Close** button  to close Microsoft Word.
- Click the browser's **Back** button to go to the previous page.
- Click the **Complete Task** button to submit the document for review and complete the task.
- Click the **Windows Minimize** button  to minimize Erica's Internet Explorer window.

Task 2. As Sandy Miller, review the Super Lite Golf Cart Owner's Manual.


- On Sandy's Internet Explorer window, click the **Refresh** button  to refresh the Overview page of the Home major tab.
- In the Assignments table, click the **Review** link to open the Review task.

3. Click the **View Lightweight Process Image** icon  to view the workflow image.
4. In the File Download dialog box, click **Open** to open the workflow image.
5. Click the **Windows Close** button  to close the Microsoft Photo Editor.
6. Type **The Specification document appears to be complete.** in the Comments text box.
7. Ensure that the Approve option is selected. Click the **Complete Task** button to complete the Review Task.
8. Click the **Windows Minimize** button  to minimize Sandy's Internet Explorer window.

Task 3. As Bob Taylor, approve the Super Lite Golf Cart Owner's Manual.

1. On Bob's Internet Explorer window, click the **Refresh** button  to refresh the Overview page of the Home major tab.
2. In the Assignments table, click the **Promote** link to open the Promote task.
3. Type **Based on Sandy's assessment, I am promoting this document** in the Comments text box.
4. Ensure that the Promote option is selected. Click the **Complete Task** button to complete the Promote Task.

Task 4. As Erica Hill, review the Life Cycle history of the Super Lite Golf Cart Owner's Manual.

1. In the Windows taskbar, click the Internet Explorer button to expand the browser session where you are logged on as Erica Hill.
2. In the Updates table, click the **View information** icon  next to the Super Lite Golf Cart Owner's Manual to open the details page.
3. Click the **History** drop-down menu to view available options.
4. Select **Maturity** to view the life cycle history of the Super Lite Golf Cart Owner's Manual.

This completes the exercise.

Exercise 3: Reassigning Tasks

Objectives

After successfully completing this exercise, you will know how to:

- Reassign tasks.

Scenario

Bob will be attending the PTC Sports Customer Conference and does not have time to review and approve the upper support assembly for release. Bob will reassign the Approve Promotion Request task to Sandy Miller with a comment explaining the purpose for the task reassignment.

In this exercise, you take the role of Bob Taylor as he reassigns the Approve Promotion Request task for the upper support assembly.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as Bob Taylor (btaylor/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Reassign the Approve Promotion Request task for the upper support assembly to Sandy Miller.

1. In the Assignments table, click the **Actions** drop-down menu for the Approve Promotion Request task related to the Upper Support SL assembly.
2. Select the **Reassign Task** option from the Actions drop-down menu.
3. Click the **Reassign to** drop-down menu.
4. Select **Miller, Sandy** from the Reassign to drop-down menu.
5. Type **I'm leaving for the PTC Customer Conference tomorrow. Could you review this assembly for me?** in the Reason for reassignment field.
6. Click the **OK** button to reassign the task.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Explain how life cycles, workflows, and teams help manage the development process.
- Identify differences between the basic and the advanced life cycle.
- Create promotion requests.
- Manage and complete tasks.
- Reassign tasks to other team members.

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. The process of promoting objects through a basic life cycle is...
 - A - not automatic.
 - B - automatic.
 - C - semi-automatic.
 - D - none of the above.
2. Objects added to a promotion request must...
 - A - not be checked out.
 - B - have at least one available target state in common.
 - C - be of the same type.
 - D - A and B.
 - E - B and C.
3. Which action can you NOT perform when you are assigned to a task in the assignment list?
 - A - Accept the task
 - B - Refuse the task
 - C - Update the task's deadline
 - D - None of the above

For Educational Use Only

Module 12

Managing Your Work

Introduction

Windchill PDMLink 9.0 provides you with tools that help you manage your work. In this module, you explore how tables on your home page help you manage the objects that you are working on. You also learn how you can use the notebook and subscription features to help you keep track of objects that you are interested in monitoring. Finally, you learn how to generate various types of reports in Windchill PDMLink.

Objectives

After completing this module, you will be able to:

- Manage your objects.
- Manage your notebook.
- Create and manage subscriptions.
- Generate reports.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

For Educational Use Only

Managing Your Work

Your Work

- Objects
 - Assignments
 - Updates
 - Checked Out Work
- Notebook
- Subscriptions
- Reports



Managing Your Work


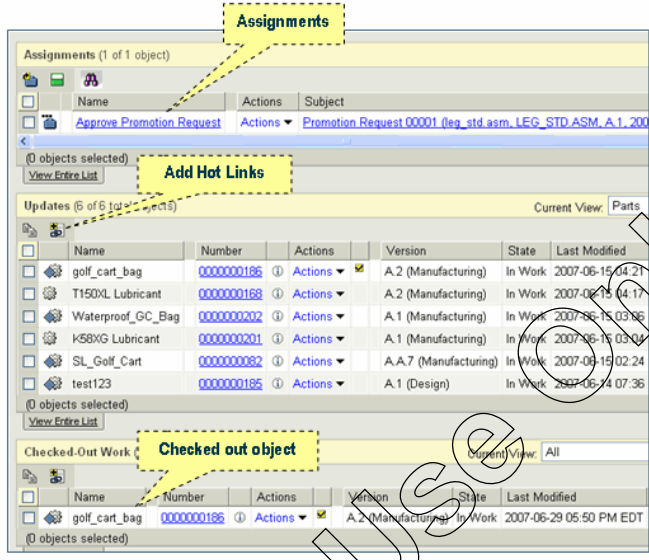
With all of the assignments and objects that you may be responsible for within PDMLink, you might wonder how you can keep track of it all. PDMLink provides you with a few tools that help you manage your work.

For example, you can manage your assignments, access recently modified objects, and view checked out items. Notebook enables you to store links to Web pages both within and outside of PDMLink. You are able to subscribe to many types of objects within PDMLink and receive e-mail notifications when updates have been made. Moreover, PDMLink enables you to collect useful information in the form of reports.

Managing Your Objects

Objects

- Assignments
 - Recently assigned
- Updates
 - Recently modified
- Checked Out Work
 - Being modified

Managing Your Objects

PDMLink also automatically keeps track of the objects with which you have recently been working. The Overview page provides tools to help you manage your work.

- The **Assignments** table enables you to view and sort the tasks you receive. To view the full list of tasks, you can also view your Assignments page.
- The **Updates** table enables you to view and sort the objects you have recently created or modified. This functionality helps you quickly access objects you frequently modify.
- The **Checked-Out Work** table provides you with a list of all the working copies of objects you have checked out. Note that objects checked out through your workspace, such as CAD documents, may appear only in your workspace.

By using these tools you can quickly locate information you have recently viewed or modified, or are currently modifying.

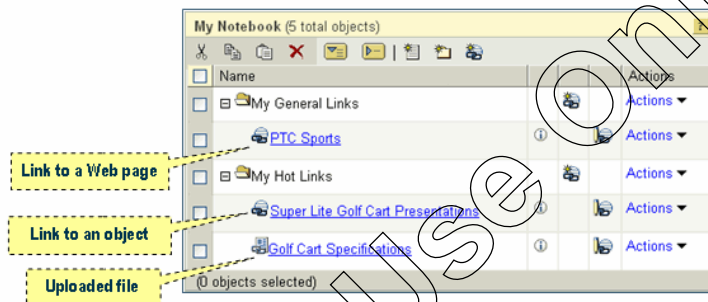


You can sort the tables by clicking a column heading, and filter them with their Current View tables. There are preferences that you can set to control the number of items that appear in these tables.

Managing Your Notebook

Notebook

- Stores links to Web pages.
 - Add to Hot Links
 - Manually create links
- Uploads and stores files.
- Organizes your Notebook with folders.



Managing Your Notebook

Your Notebook is a tool in PDMLink that enables you to store links to Web pages both within and outside of PDMLink. It also enables you to upload files, should you want to store files in PDMLink without providing others access to it.

From within the Notebook, you can add a link to a Web page by clicking the Create Link button. You can also upload a File using the Upload file button.

You can organize the information you store in your Notebook by creating folders. You can think of your Notebook as your own personal library.

You can access the Notebook from your Home major tab by clicking the Notebook link, or by clicking the Hot Links link at the top of every page.



Note that both the Updates and Checked Out Work tables provide an icon to Add to Hot Links. This is a way to store a link to the selected object in your Notebook. That way, you can access it at any time regardless of whether the object was modified recently, or is currently checked out.

Managing Your Subscriptions

Subscriptions

Content Objects

- End items
- Parts
- CAD documents
- Documents

Discussion Objects

- Discussion topics
- Discussion postings



Subscriptions (2 of 2 total objects)							Current View: My Subscriptions
<input type="checkbox"/>	Name	Actions	Types	Events	Subject	Delivery	Owner
<input type="checkbox"/>	Golf Cart Bag Modifications	Actions	Part	Check Out/Check In	Golf Cart Bag Modified	Immediately	John Evans
<input type="checkbox"/>	Golf Cart Released	Actions	Part	Lifecycle State = Released	Release Notification	Immediately	John Evans

Managing Your Subscriptions

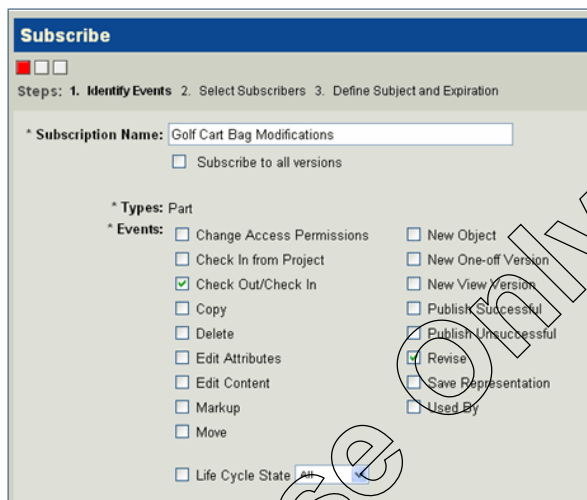
PDMLink can notify you of changes to an object, a document, or a part, if you subscribe to events that occur to that object. You are able to subscribe to many types of objects within PDMLink—these include end items, parts, CAD documents, and documents. You can also subscribe to postings and topics within discussions.

Though you create your subscriptions within the object you are working with, the Subscriptions page on your Home major tab enables you to manage all of your subscriptions.

Creating Subscriptions

Creating Subscriptions

- Identify Events
- Select Subscribers
- Define Notification
 - Subject
 - Message
 - Expiration



Creating Subscriptions

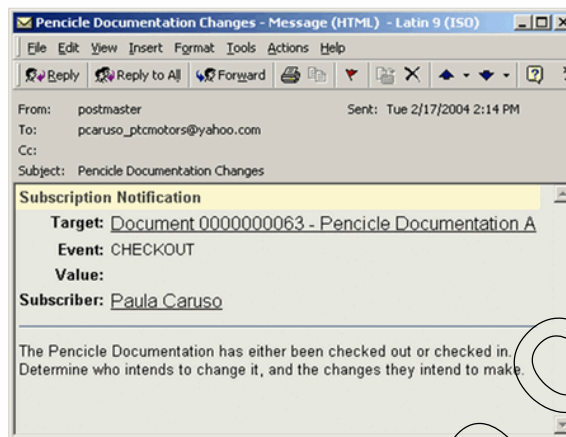
When you create a subscription, you complete a three-step process.

- First, specify the subscription name. You can accept the default name, which is also the object's name you are about to monitor. Next, select which events should be sent as notifications, such as a check in or a state change. When the events you select occur, you are notified by e-mail. Most events are self-explanatory, and for details of the events you can access PDMLink's help.
- Secondly, select subscribers, the people who will receive notifications. By default, your name is listed as the only subscriber. However, you can add other individuals or team members to the list.
- Finally, define the e-mail notification you receive. This includes defining the subject and body of the e-mail. If you leave the subject field blank, the subject will be automatically completed by PDMLink. You can type a Description that will be the content of the e-mail. This should inform the notification recipients why they are receiving the e-mail, and if there are any actions they are expected to take. You can then set the expiration date of the subscription, but you can also leave the expiration date field blank if you do not want it to expire.

Receiving Notifications

Notifications

- Subscriptions
- Missed deadlines
- Tasks
- Meetings
- Discussions



Receiving Notifications

Notifications are e-mails that notify you about events in PDMLink. Many notifications are the result of subscriptions, but you can also be notified about many other things, including tasks delivered to your Task List, and meetings to which you have been invited.

Generating Reports

A report is the output of a pre-defined query.

- Identify trends
- Summarize information
- Identify objects in certain states

Report Output

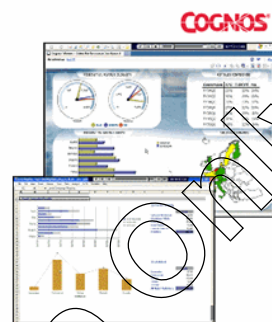
- PDF, XML, HTML, and CSV

Windchill Business Reporting Functionality

- Scheduling reports
- Reports using charts and graphs
- Report delivery options

Add-on Reporting

- Report layout authoring with Cognos report writer
- New report creation



Generating Reports

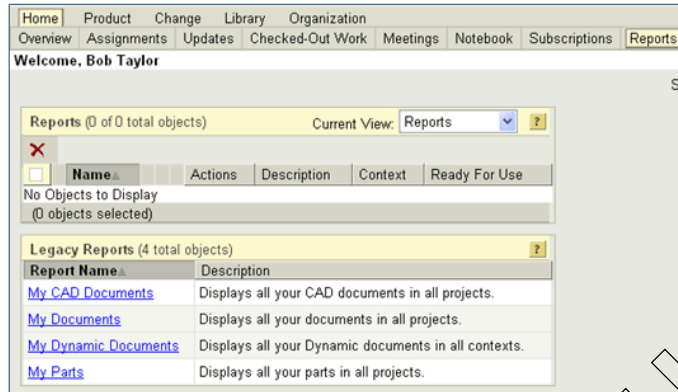
A report is the output of a pre-defined query that is run at a particular time against a set of business information, often using parameters that are entered at the time the report is run. You can use reports for many purposes, including identifying trends, summarizing information about particular objects, identifying objects in certain states, and so on. Reports can be generated in multiple output formats, such as PDF, XML, HTML, and CSV, depending on your needs and how each report is defined.

If your site has enabled the Windchill Business Reporting functionality, additional reporting capabilities are available to you, including scheduling reports, reports using charts and graphs, and various delivery options, such as printing and e-mail. Windchill Business Reporting uses a powerful third-party reporting application that works with your Windchill data to provide rich and flexible report options.

Generating Reports: Home Tab Reports

Home Tab Reports

- ◉ Windchill 9.0 Reports
- ◉ Legacy Reports

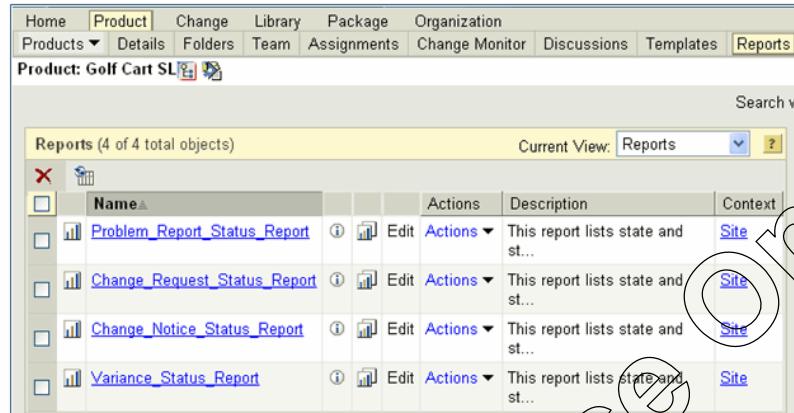


Generating Reports: Home Tab Reports

PDMLink has a number of standard and legacy reports on your Home major tab. However, the reports on your Home major tab are not the only reports that you can generate. The Legacy Reports table contains reports carried over from previous Windchill releases that continue to be available for you to use. To view a legacy report, click the report name. The Reports page refreshes, displaying the report output in a table format. From the Current Report drop-down list of that table, you can select other legacy reports to view.

Generating Reports: Context-specific Reports

Product or Library Specific Reports



Generating Reports: Context-specific Reports

If a report is made available in more than one context, then the report output may differ, depending on the context from which the report is run.

Generating Reports: Product Structure Reports

Product Structure Reports

- Single-Level
- Multi-Level

Single-Level Consolidated Bill of Materials Report
 Target Part: 0000000082_PTC Sports_A A.7 (Manufacturing)
 Configuration: Latest, View=Manufacturing, Working Copy included=Yes Time Of Execution: June 29, 2007
 Executed By: jervans

(8 total objects)

Number	Quantity	Version	Name	State
0000000059	1.0 each	A.1 (Design)	leg_sl_asm	Released
0000000064	1.0 each	A.1 (Design)	lt_arm_slprt	Released
0000000065	4.0 each	A.1 (Design)	nut_1_4_slprt	Released
0000000069	1.0 each	A.1 (Design)	rt_arm_slprt	Released
0000000077	1.0 each	A.1 (Design)	upper_support_sl_asm	Released
0000000081	1.0 each	A.1 (Design)	wheels_assem_sl_asm	Released
0000000168	2.0 each	A.2 (Manufacturing)	T150XL Lubricant	In Work
0000000186	1.0 each	A.2 (Manufacturing)	golf_cart_bag	In Work

Structure General Related Objects History Collaboration

Change configuration to: -Select-
 Current Latest: View=Manufacturing, Working=true, Applied to Top=true, Use
 Configuration: Default=false

Product Structure

Related Reports: -Select Report-->

Multi-Level Components List
 Single-Level Consolidated BOM
 Single-Level Bill of Materials with Notes
 Single-Level BOM
 Multi-Level BOM
 Multi-Level BOM with Replacements
 Multi-Level Where Used
 Multi-Level BOM Compare

Number	Actions	Version	Name	State	Quantity
0000000082	Actions	A.A.7 (Manufacturing)	SL_Golf_Cart	In Work	
0000000059	Actions	A.1 (Design)	leg_sl_asm	Released	1 each

Generating Reports: Product Structure Reports

You can generate reports for a part or an end item to view specific information related to the part's BOM (Bill of Materials). To generate a report, locate the part for which you want to generate a report and then click the Structure link to view the Structure page. From the Structure page, select the report type you want to generate from the Related Reports drop-down list. The following BOM report types are selectable for parts:

- Multi-Level Components List
- Single-Level Consolidated BOM
- Single-Level Bill of Materials with Notes
- Single-Level BOM
- Multi-Level BOM
- Multi-Level BOM with Replacements
- Multi-Level Where Used
- Multi-Level BOM Compare

Generating Reports: Change Monitor Reports

Change Monitor Reports



All Special Reports

[Average Change Request Completion Time \(Entire System\)](#)
[Average Problem Report Completion Time \(Current Context\)](#)
[Average Change Notice Completion Time \(Current Context\)](#)
[Average Change Notice Completion Time \(Entire System\)](#)
[Average Problem Report Completion Time \(Entire System\)](#)
[Average Change Request Completion Time \(Current Context\)](#)



Generating Reports: Change Monitor Reports

The All Special Reports section of the Change Monitor tab lists the different reports available concerning the change management system.

The All Special Reports list may differ for users depending on the access control permissions that are set by the system administrator.

The report names are generally self-explanatory.

Lab Exercises

Exercise 1: Managing Your Notebook

Objectives

After successfully completing this exercise, you will know how to:

- Manage your Notebook by creating links and uploading files.

Scenario





In this exercise, you take the role of Erica Hill as she manages some of her work. First, you will examine the tools that enable you to access objects; then you will organize some of her work using her notebook.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as Erica Hill (ehill/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Add links and files to your Notebook.

1. In the Updates table under the Home major tab, select the check box for the SL Golf Cart Owner's Manual.
2. Click the **Add to Hot Links** icon  to add the document link to the notebook.
3. Click **OK** to acknowledge the successful operation.
4. Select the **Notebook** minor tab to access the notebook.
5. Click the Expand icon  to the left of the My Hot Links folder to view the newly created link.
6. Click the **New Link** icon  next to the My General Links folder to create a new link.
7. Type **PTC Sports** in the Link Name field.
8. Type **http://www.ptcsports.com** in the URL field.
9. Type **PTC Sports Website** in the Description field.
10. Click **OK** to create the link. (If you get an alert window asking you to auto-complete entries for future, click No.)
11. Click **OK** in the confirmation box to complete the process.
12. Click the Expand icon  to the left of the My General Links folder to view the newly created link.
13. Click the **Actions** drop-down menu next to the My Hot Links folder to expand the menu.
14. Select **Upload File** to upload a local file to the notebook.
15. In the Upload File window, click the **Browse** button next to the File field to select a file.
16. In the Choose file dialog box, browse to D:\Student\Intro_to_PDMLink 9.0\Super Lite Golf Cart\Documents folder and select the **sl golf cart cover image.jpg** file.
17. Click **Open** to select the file and return to the Upload File window.
18. Type **Super Lite Golf Cart Image** in the Description field.
19. In the Upload File window, click **OK** to save the information.

This completes the exercise.

Exercise 2: Subscribing to Objects

Objectives

After successfully completing this exercise, you will know how to:

- Subscribe to objects.
- Manage subscriptions.

Scenario

In this exercise, you take the role of Erica Hill and explore subscribing to objects and managing subscriptions.


As Erica, you will subscribe to the Super Lite Golf Cart Owner's Manual that you recently uploaded. You would like to be notified if anyone intends to make a change or makes a change. You will create a subscription, which will send a notification if the document is checked out or checked in.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as Erica Hill (ehill/ptc).
- Start on the Notebook page of the Home major tab.

Task 1. Subscribe to the Super Lite Gold Cart Owner's Manual's Check Out and Check In events.

1. Under the My Hot Links folder in the Notebook, click the **SL Golf Cart Owner's Manual** link to view the details page of the document.
2. Click the **Collaboration** drop-down menu in the lower part of the details page.
3. Select **Subscriptions** to view the existing subscriptions.
4. In the Subscriptions table, click the **Subscribe** icon  to create a new subscription.
5. In the Subscribe window, select the **Check Out/Check In** check box.
6. Click the **Next** button to go to the next step window.
7. Click the **Find...** button next to the Cc: field to add another recipient.
8. In the Find Participant window, click the **Search** button below the Participant Name field to search for all users.
9. In the Search Results field, select **Bob Taylor**.
10. Click the **Add >>** button to move the user to the Participant List field.
11. In the Find Participant window, click **OK** to save the information and return to the Subscribe window.
12. In the Subscribe window, click the **Next** button to go to the next step window.
13. Type **Golf Cart Manual Modified** in the Subject field.
14. In the Message field, type **Super Lite Golf Cart Owner's Manual has been modified**.
15. Do not set any expiration date and click the **Finish** button to create the subscription.

Task 2. Review and manage your subscriptions.

1. Select the **Home** major tab.
2. Click the **Subscription** minor tab to view the available subscriptions.
3. In the Subscription table, click the **Actions** menu next to the Super Lite Golf Cart Owner's Manual.

4. Select **View information** to view the subscription details page.

This completes the exercise.

For Educational Use Only

Exercise 3: Generating Reports

Objectives

After successfully completing this exercise, you will know how to:

- Generate reports.

Scenario


In this exercise, you take the role of Erica Hill as she generates reports.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as Erica Hill (ehill/ptc).
- Start on the Subscription page of the Home major tab.

Task 1. Add links and files to your Notebook.

1. Select the **Reports** minor tab to access legacy reports.
2. In the Legacy Reports table, select **My Documents** to display all your documents in your projects.
3. Click the **Product** major tab to view other reports.
4. Select the **Reports** minor tab to access product specific reports.
5. Click the **Problem Report Status Report** link to view the report.
6. Click the **Find...** button next to the Context field to change the context.
7. In the Find Context window, click the **Search** button to view all contexts.
8. Select the **EZ Fold Golf Cart** option.
9. Click the **OK** button to set the context and return to the Problem Report Status page.
10. Click **Continue** to generate the report.
11. Click the **Windows Close** button  to close the report window.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Manage your objects.
- Manage your notebook.
- Create and manage subscriptions.
- Generate reports.

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. The Updates table in the Home major tab enables you to...
 - A - view and sort the objects you have recently created or modified.
 - B - view and sort the objects you have recently created.
 - C - view and sort the objects you have recently modified.
 - D - update the task's deadline.
2. What can you accomplish using the Notebook tool in PDMLink?
 - A - It enables you to store links to Web pages within PDMLink.
 - B - It enables you to store links to Web pages outside of PDMLink.
 - C - It enables you to upload files, should you want to store files in PDMLink without providing others access to it.
 - D - All of the above.
 - E - A and B only.
3. You want to generate a multi-level BOM report for an object. Which interface enables you to generate that report?
 - A - The Change Monitor
 - B - The Reports page under the Home major tab.
 - C - The Reports page under the Product major tab.
 - D - The Structure page of the object.

For Educational Use Only

Introduction to the Change Process

Introduction

In this module, you explore the Windchill PDMLink 9.0 change process. Change management in Windchill PDMLink is an out-of-the-box change system that can be implemented with any site-specific configuration. You also explore one means of initiating this process: submitting a problem report. This module examines the means of reviewing a process: the change monitor.

Objectives

After completing this module, you will be able to:

- Describe PDMLink's Change Management features and benefits.
- Identify change objects.
- View the change process diagram.
- Describe how the change process manages the routing of change objects.
- Describe the difference between a Fast Track and a Full Track change.
- Describe the responsibilities of the Change Administrator roles.
- Report problems.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

For Educational Use Only

Change Management Features: Introduction

Change Management

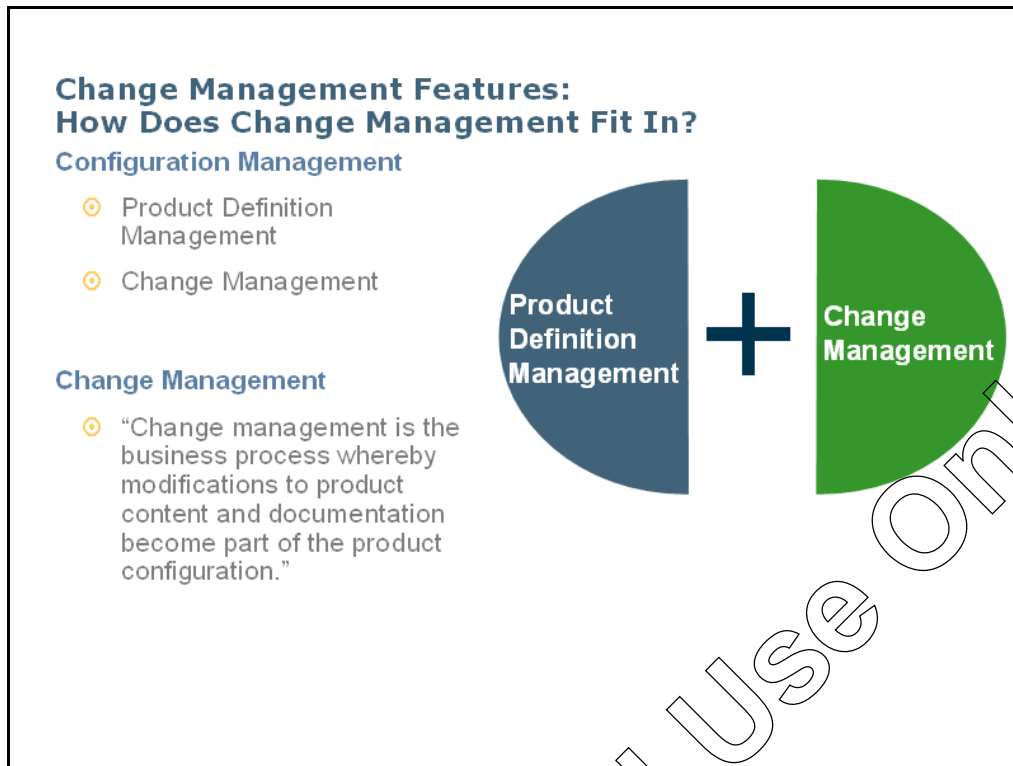
- ⦿ Out-of-the-box change management system
- ⦿ Uses PDMLink's
 - Change objects
 - Life cycle and workflow tools
- ⦿ Easy to use
- ⦿ Configurable



Change Management Features: Introduction

Change management in Windchill PDMLink is an out-of-the-box change system that can be implemented with any site-specific configuration. It is built upon Windchill PDMLink's standard objects and process tools.

Windchill PDMLink's change management provides an easy to use interface and a change system monitor that helps administrators evaluate the health of the change system. You can modify and configure it, but because it is out-of-the-box it uses the best practices promoted by the industry standards.



Change Management Features: How Does Change Management Fit In?

You can think of Configuration Management to have two halves:

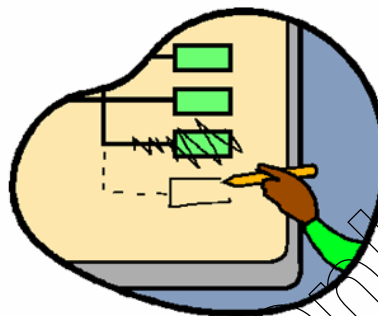
- The first half is the management of product structures and all the information associated to them that describes the product.
- The second half is the management of changes to the structure and information that invariably occurs over time.

This second half of Configuration Management is Change Management. Change Management is the business process whereby modifications to product content and documentation become part of the product configuration. This module focuses on this second half of configuration management.

Change Management Features: Benefits

Common Concerns

- ⦿ Misunderstood
- ⦿ Bureaucratic and cumbersome
- ⦿ Changes are “lost”
- ⦿ Production can stall
- ⦿ Inefficient
- ⦿ Multiple systems
- ⦿ Expensive repercussions



Main Benefits

- ⦿ Repeatable process
- ⦿ Promotes controlled rapid change

Change Management Features: Benefits

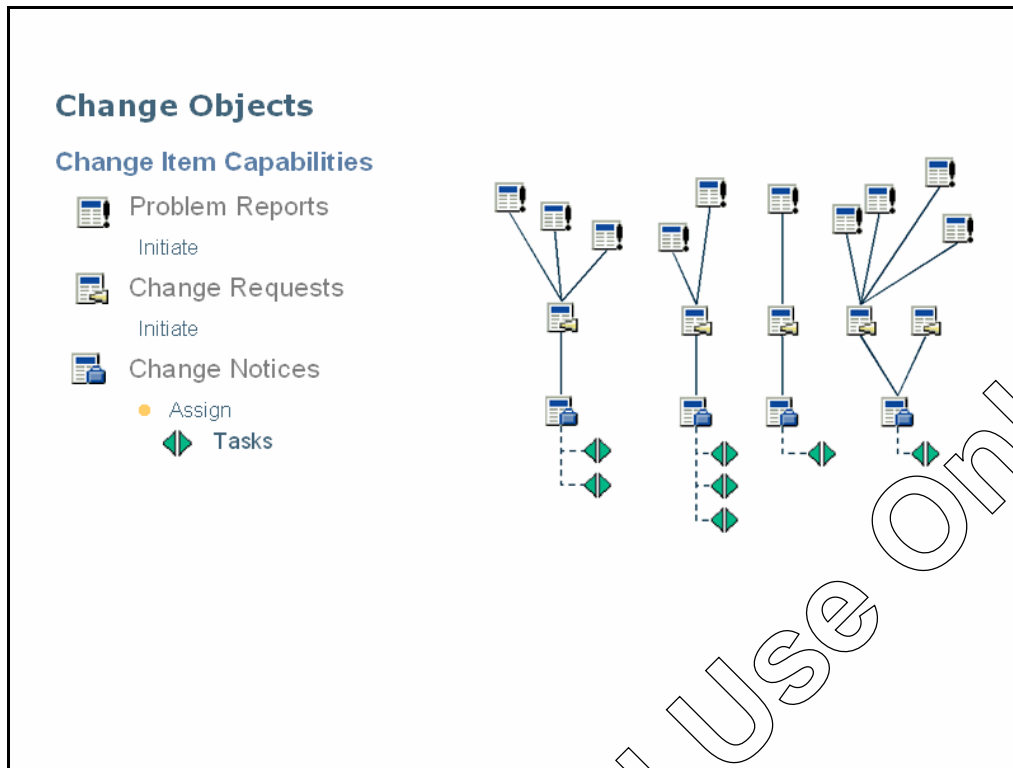
While change is inevitable, formal change processes often face significant problems. Often, the current change system is not clearly understood or universally accepted by all participants. Also, some change systems are bureaucratic and slow; creating the need for an “informal” process that bypasses the more rigorous official process.

Occasionally, changes become “lost” in the system. You may need to take measures to expedite critical changes in order to maintain production. Inefficient change processes can cause wasted labor, scrapped materials, and missed delivery dates.

In some systems, participants in the change process must reference many data sources in different systems to determine the impact of a change. Occasionally, changes occur late in the development process and are therefore expensive to execute.

If you have a paper based system or a combination of some automation and paper change management you may have encountered these problems. If you have, then you can greatly benefit from implementing the change process offered by PDMLink.

The main benefit of the Windchill PDMLink change system is that it creates a repeatable process that does not prohibit change, but rather promotes controlled, rapid change.



Change Objects

Items such as problem reports (PRs), change requests (CRs), and change notices (CNs) become integral to the life and structure of the product model. These items capture the information that is routed through the change process. This module reviews the purpose of each change object.

- The problem report (PR) can be completed by anyone who would like to suggest a change or report a problem with a part. Typically, problem reports are used to document problems submitted in testing, in the field, or by customers.
- A change request (CR) can then be used to gather common problem reports and submit a formal request for a change. Alternatively, a change request can be initiated without any problem reports.
- Finally, a change notice (CN) can be used to assign tasks that complete the implementation plan and implement the changes.

All of these change items can be associated to one another, and to the PDMLink parts and documents that they are affecting. The process for completing this involves utilizing many people over a great deal of time.

Monitoring Change: Reports

Change Items

Graphs

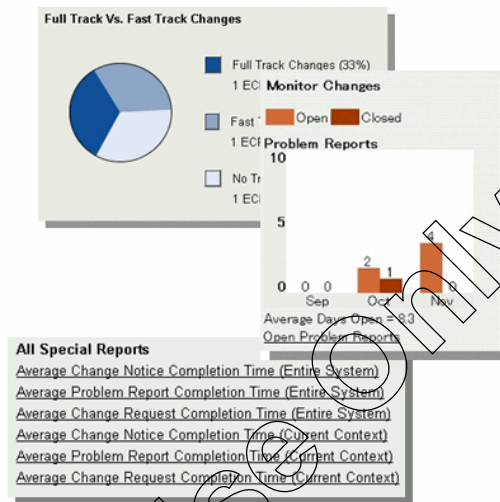
- Open and closed by month
- Percentage full track versus fast track

Reports

- Open
- Throughput
- Average time to completion
- Aging report

Benefits

- Monitor current change information
- Take corrective action



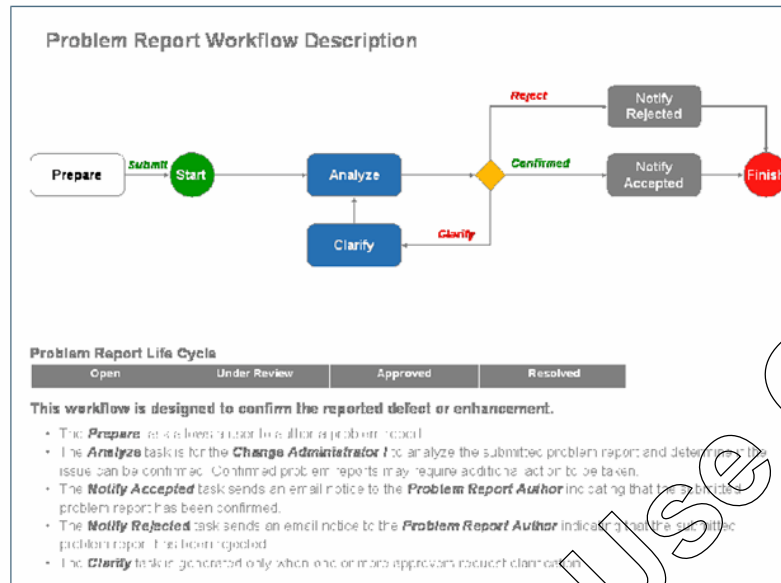
Monitoring Change: Reports

Windchill PDMLink offers customers the ability to monitor the health of the change system using a series of graphic and textual reports called the "Change Monitor." These reports provide metrics for the flow of changes through the process and tools for drilling down to the details of changes, which may be stalled in the system.

Information concerning change items (PRs, CRs, and CNs) is displayed on the Change Monitor tab using different charts. The three charts at the top of the page display information about the change objects during a set time period. A pie chart displays information concerning full track change requests versus fast track change requests for the same period of time.

You can view information such as the number of opened versus the number of closed problem reports within a certain time period. You can also view special reports generated using the Report Manager. This page also provides access to all open problem reports, change requests, and change notices.

Viewing Change Process Diagrams



Viewing Change Process Diagrams

Windchill PDMLink enables you to view a lightweight version of the change workflow process image. This process image is a JPG file that can be launched from a variety of places in PDMLink. You also have the option of viewing the real-time workflow process and get the status.

The Change Process: Overview



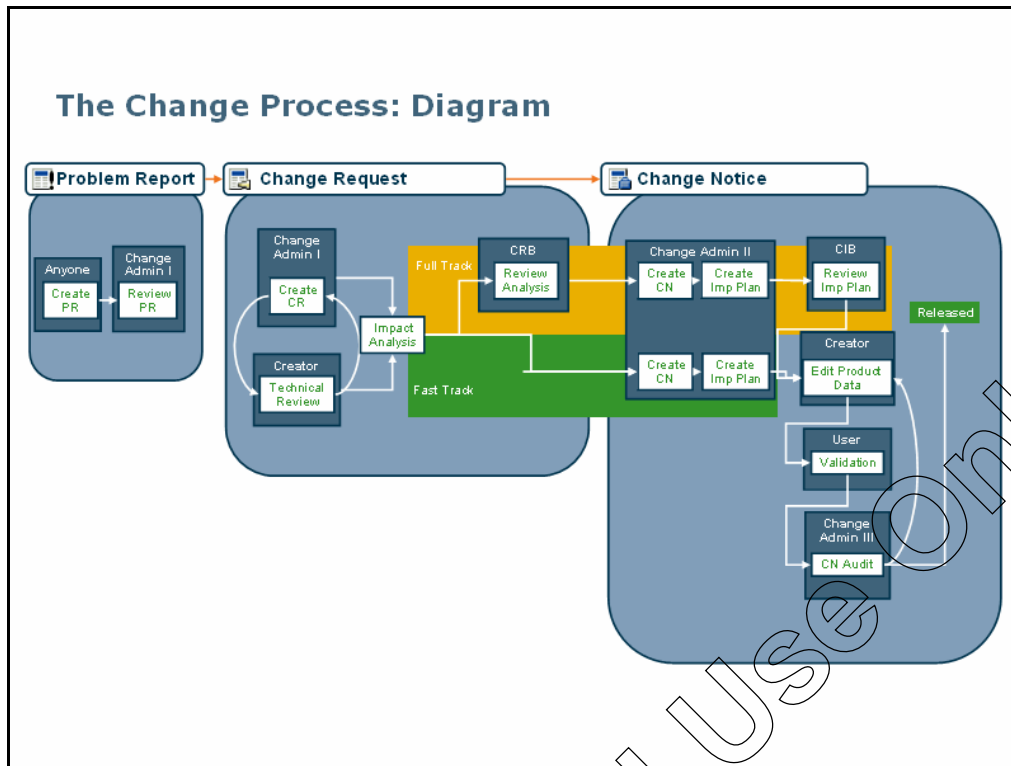
Closed Loop Change Process:

- Create and confirm the Problem Report
- Create and evaluate the CR
 - Route it through
 - Full-track (approved by CRB)
 - Fast-track (approved by Creator)
- Create the CN and Implementation Plan
 - CN approved by the Creator or CIB
- Make and audit the modifications
- Complete the CN
 - Close the CR
 - Close the Problem Report
 - Release the Object

The Change Process: Overview

Windchill PDMLink's Change Management processes support the concepts of the closed loop process. This list provides an overview for the closed-loop change process.

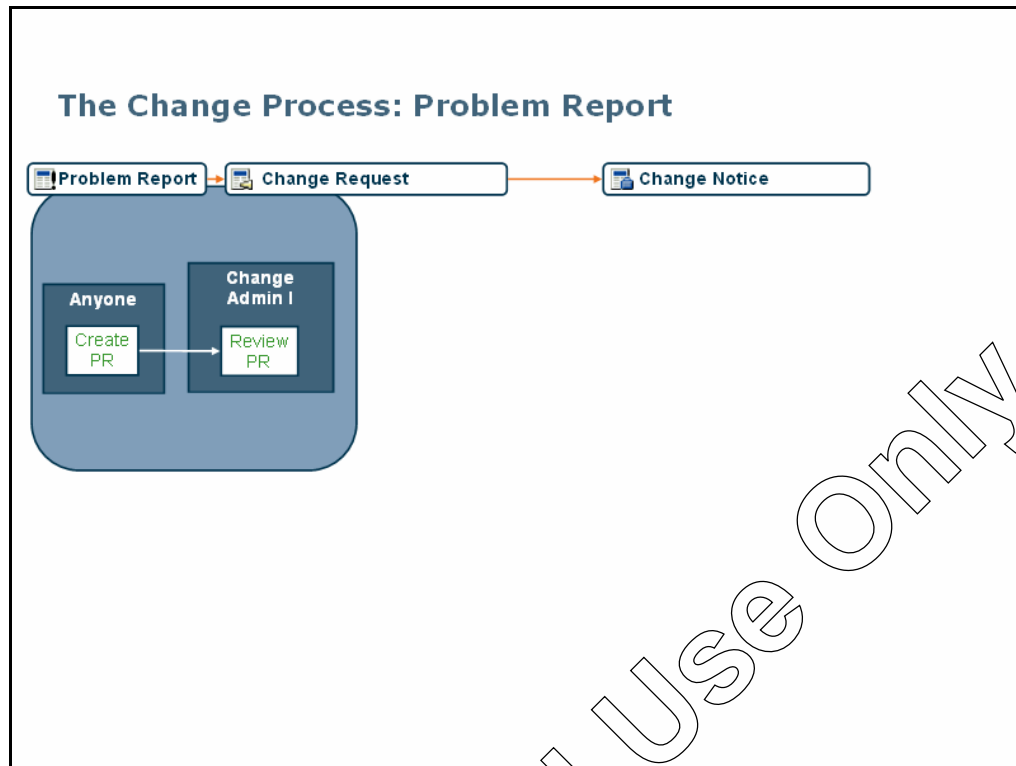
1. The process begins with problems and suggestions for changes being reported by problem reports.
2. These reports are collected in a change request (CR) that formally suggests a change. This request can then be evaluated and routed through a Fast-track or Full-track change process, subject to the review of the Change Review Board.
3. Next, a change notice (CN) and an implementation plan is created. Depending on whether it is on the fast or full track, it is approved by the Change Implementation Board.
4. Once the implementation plan is approved, the modifications are made and then audited to be certain they meet the specifications of the implementation plan.
5. Once the modifications are approved, the change notice is completed. Once the change notice is completed, the change request is closed, and any associated problem reports along with it. The changed object is then released, and the entire process can begin again, as needed.



The Change Process: Diagram

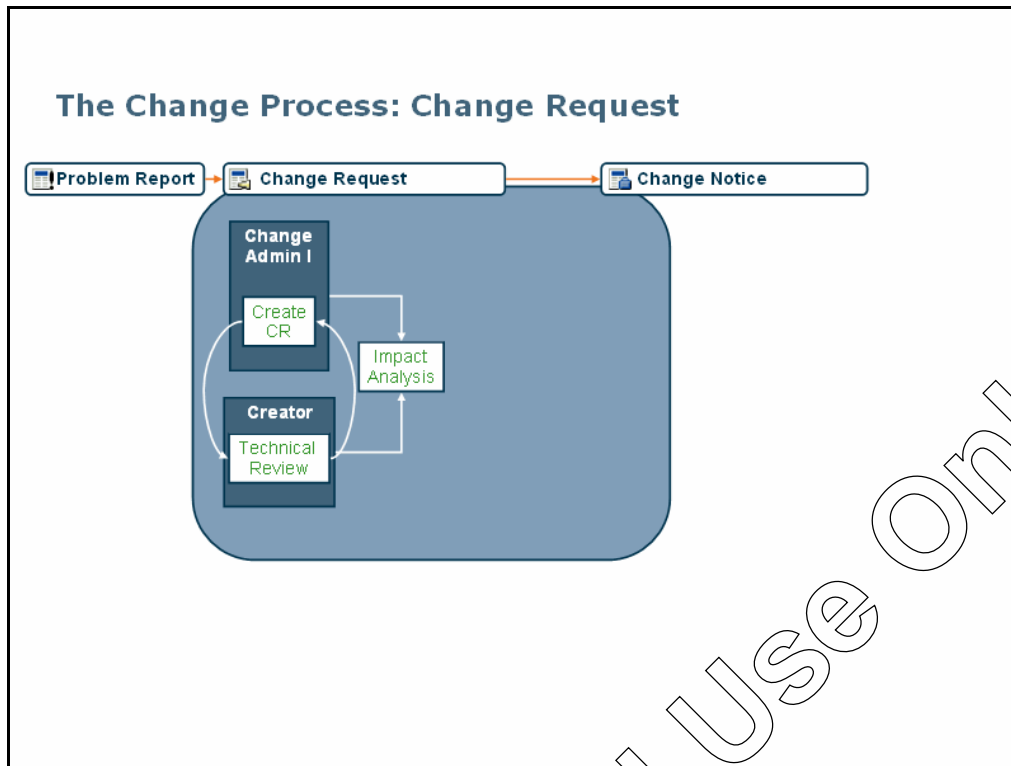
This diagram outlines how PDMLink manages the three primary change objects in the change process: problem reports, change requests, and change notices.

It follows the basic flow shown on the previous slide. This module examines how the process manages the three change objects.



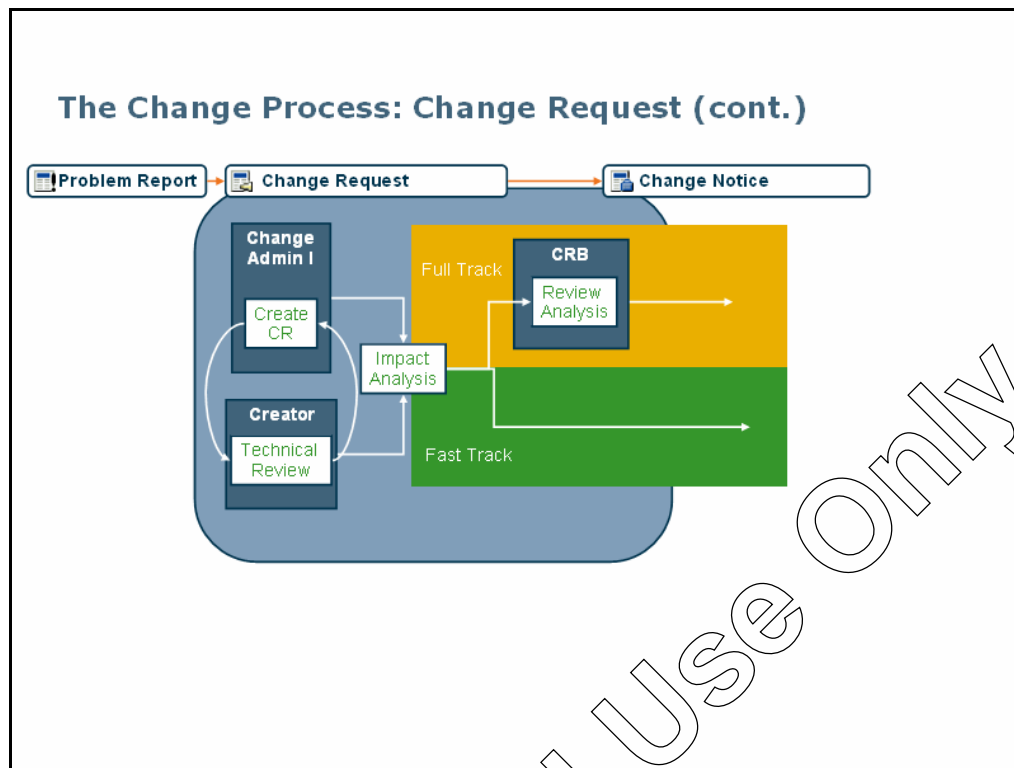
The Change Process: Problem Report

The first object in the process is the problem report. A problem report is created to document a problem or request a product enhancement. Typically, a problem report is created by any registered Windchill PDMLink user on behalf of someone outside the system, such as a customer or supplier. Once the report is created, it is sent to the Change Administrator I by a workflow. The Change Administrator I reviews the problem report and either approves or rejects it.



The Change Process: Change Request

A change request can be created in response to one or more problem reports or without any reference to a problem report. It details the changes necessary to correct the problem or provide the enhancement so the appropriate people can make the business decision to proceed with or cancel the proposed change. After Change Administrator I confirms the problem report (using the assignments task), Change Administrator I or a designated individual creates a change request. Next, typically in conjunction with someone responsible for the object being changed, such as the object's creator, the Change Administrator I performs an impact analysis.

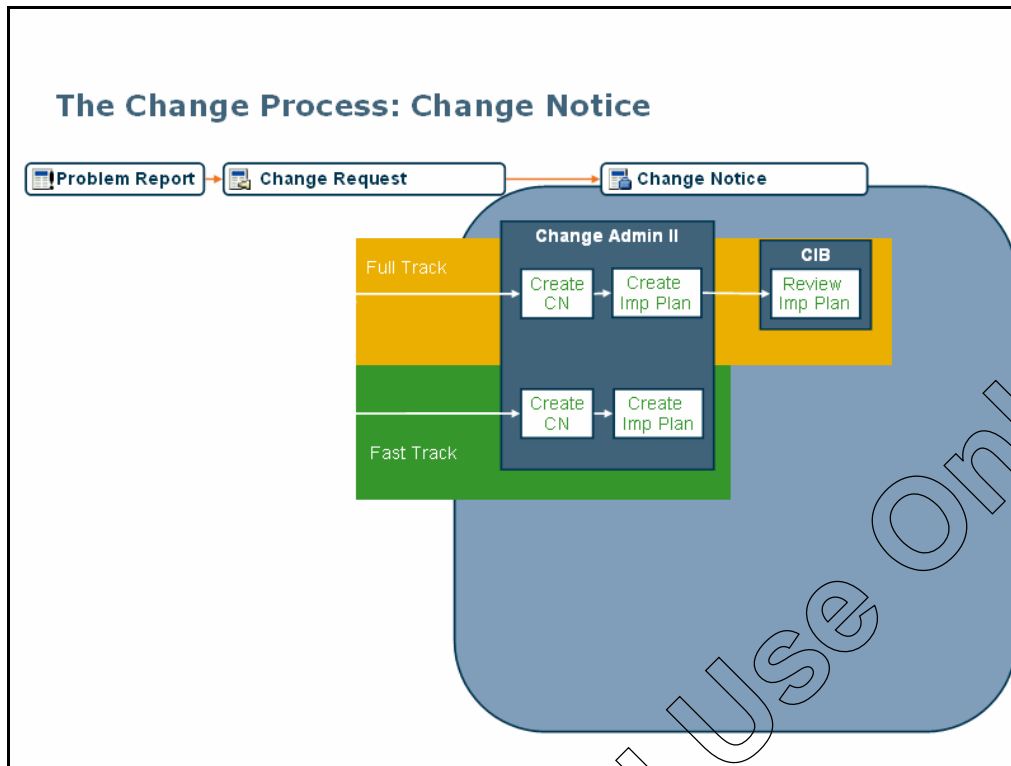


The Change Process: Change Request (cont.)

Based on criteria specific to your organization, the Change Administrator I also records a decision about whether to route the change along the full or fast track.

- **Fast track** change requests should make up approximately 80% of the average change requests within an organization. Fast track change requests have low impact and cost, and therefore, can be processed quickly through the change system. The cost threshold for changes that can be processed using the fast track changes is typically set by company policy.
- **Full track** change requests are those with a high impact and cost and require close analysis and review. Full track changes must pass through the Change Review Board prior to implementation. The Change Review Board is typically composed of representatives from company departments such as Design Engineering, Manufacturing Engineering, and Quality Assurance. The Change Review Board reviews and either approves or denies a change request.

Therefore, the Change Administrator I has several responsibilities. He or she must review the change request, collect impact information, and communicate the decision to reject the change or implement it in either the fast or full track branches of the change management process. Change Administrator I also creates the change requests from unresolved problem reports.

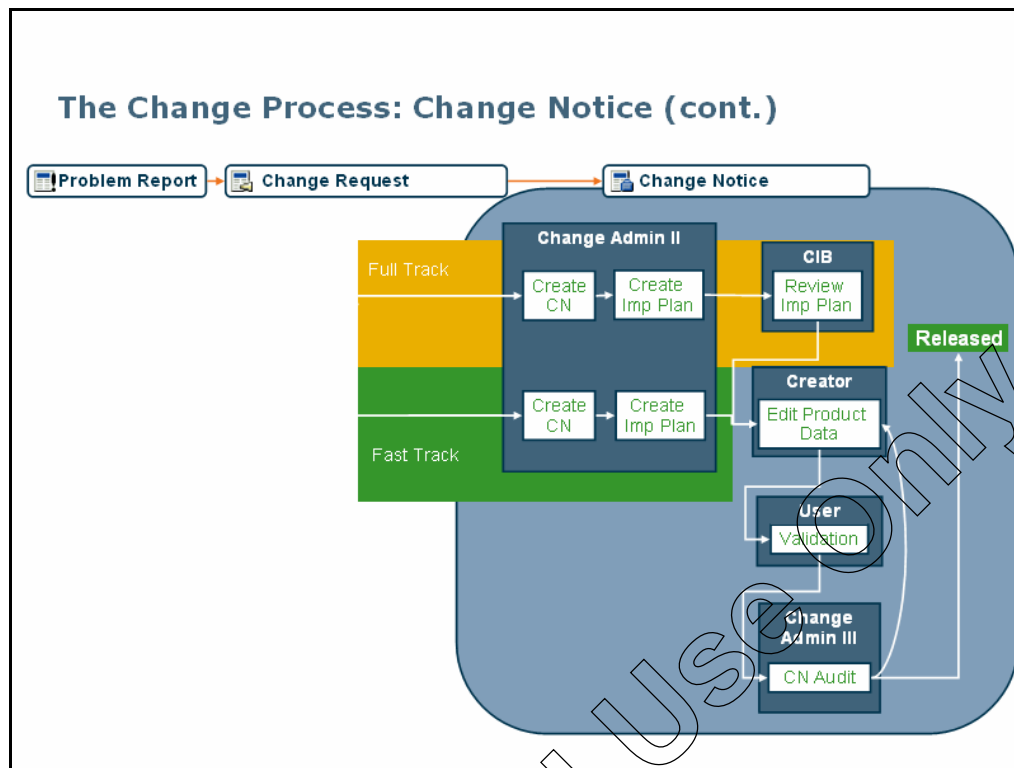


The Change Process: Change Notice

Next, the Change Administrator II creates the change notices.

- If the object moves along the fast track, then the appropriate Change Administrator II is assigned to create the change notice, documenting the implementation plan.
- On the full track, Change Administrator II records the Change Review Board's decision to either reject or proceed with the implementation of the change request. Upon approval, the appropriate Change Administrator II is assigned to create the change notice, and the implementation plan.
- A full track change notice requires the approval of the Change Implementation Board prior to any actual work being performed.

Therefore, the second change administrator (Change Administrator II) is responsible for creating the implementation plan captured in the change notice. Change Administrator II is also responsible for recording the Change Implementation Board's decision to proceed with the implementation plan.



The Change Process: Change Notice (cont.)

Regardless of which route the change takes, when approval is given the work to implement the change begins, and the product structure, product model, and/or documentation is upgraded.

- Data creators edit product data as directed by the change notice tasks.
- Data users must then check and approve the work of the creators before the task is complete.
- When all the tasks associated with the change notice have been completed, Change Administrator III audits the result to be sure it is clear, concise, and valid.

In some organizations, one person may be assigned to multiple Change Administrator roles in a Product or Library's team.

Depending what the Change Administrator III discovers, he or she either approves or rejects the change notice. If the Change Administrator approves it, the object is released, and the corresponding problem reports and change requests are considered resolved.

With the object released, the change process is complete, but ready to be applied to the newly modified object should it need to be.

Creating Problem Reports

Creating a Problem Report

- Create it from an object
- Supply problem details
- Associate additional affected objects
- Upload attachments
- Submit it



Creating Problem Reports

While this process is complicated, most users are involved in only a few stages. The one thing that every user (with appropriate permissions) can do, is submit a problem report.

To submit a problem report:

1. First, create a problem report by selecting Create Problem Report from an object's Actions menu; this automatically associates that object to it.
2. Then, supply the problem details identifying the problem and assigning a priority.
3. Next, associate any other affected end items.
4. You can also associate any attachments that you wish to include.
5. Finally, submit it.

Creating Problem Reports (cont.)

Problem Report Objectives

- ⦿ Problem Reports are optional.
- ⦿ Describe a product problem or enhancement.
- ⦿ Record confirmation and issues.
- ⦿ Connect to official change requests.
- ⦿ Capture resolution.



Benefits

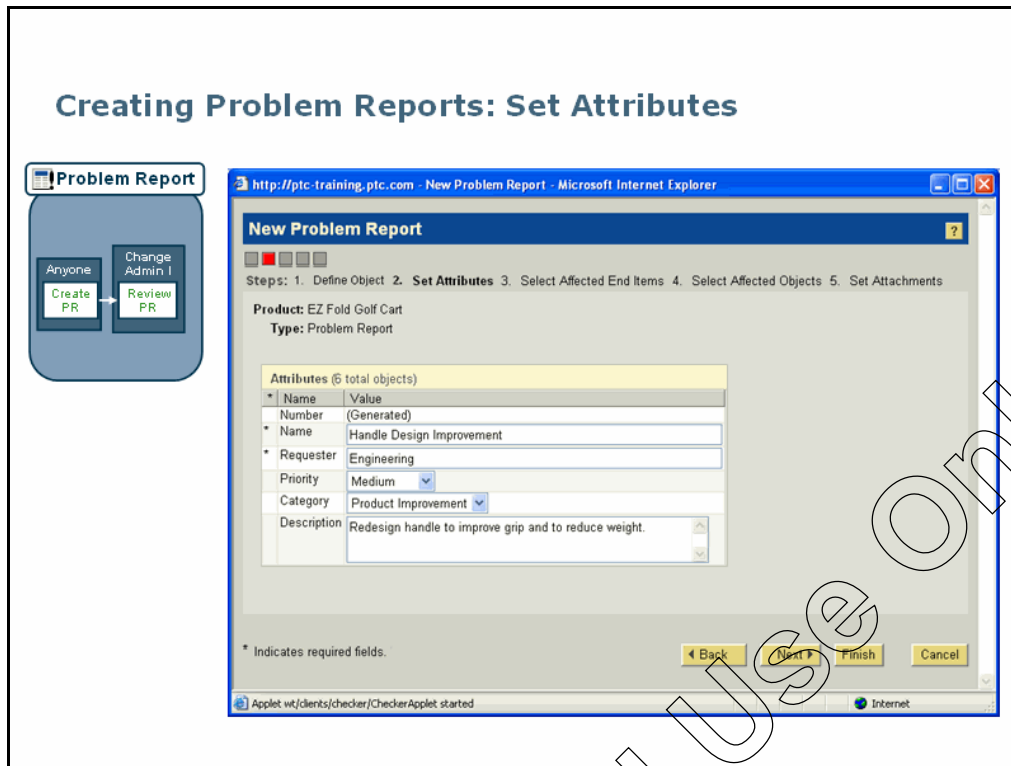
- ⦿ Permanent database record of all enhancements/problems
- ⦿ Collect multiple Problem Reports for resolution together.

Creating Problem Reports (cont.)

The purpose of the problem report is to describe a product problem or suggest a product enhancement. It can be created by a wide group of people within the company or by the extended enterprise including suppliers and customers. Problem Reports are optional. It is possible to create a change request (CR) without a problem report.

By capturing problems and enhancements, problem reports provide a formal means to record and evaluate them.

The Change Administrator responsible for this can then evaluate, collect, and resolve multiple problems and/or suggestions through the formal change process.



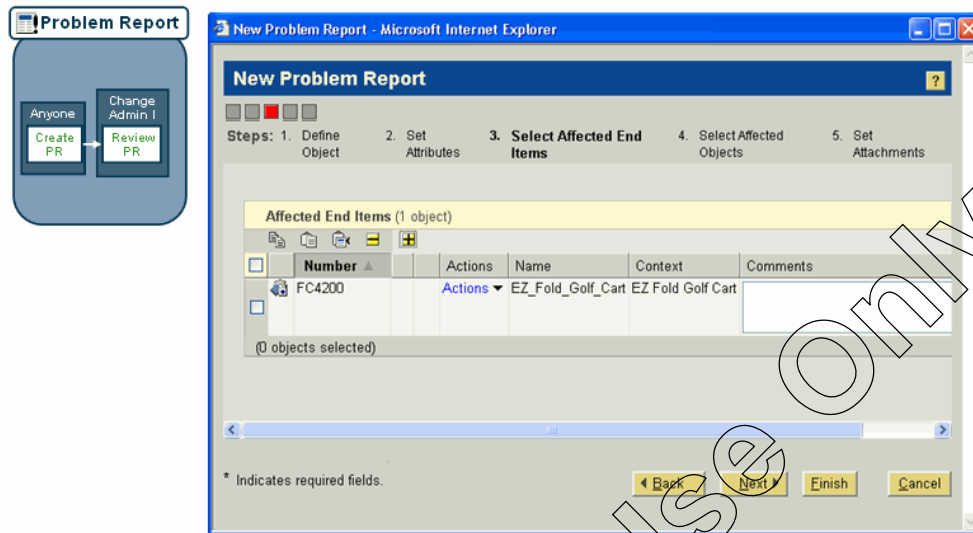
Creating Problem Reports: Set Attributes

When you select Create Problem Report from an object's Actions menu, the Create Problem Report dialog box appears. The dialog box is divided into several steps. The first step is about the type of change object, a problem report in this case, is completed automatically when you select the Create Problem Report from the object's Actions menu. During the second step, you specify the attributes.

During this step, you can:

- Name the problem report.
- Supply the name of the problem reporter.
- Classify the nature of the problem report.
- Set a priority level.
- Provide a general description of the problem report.

Creating Problem Reports: Select Affected End Items



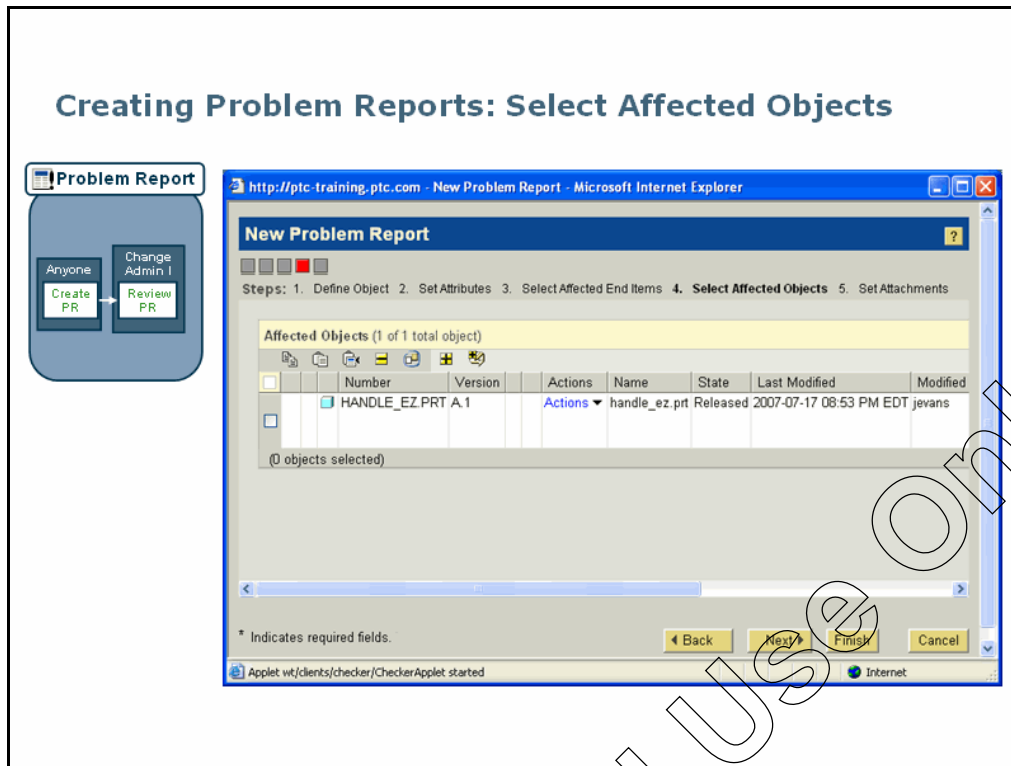
The screenshot shows a web application window titled 'New Problem Report - Microsoft Internet Explorer'. The main content area is titled 'New Problem Report' and displays a progress bar with five steps: 1. Define Object, 2. Set Attributes, 3. Select Affected End Items (current step), 4. Select Affected Objects, and 5. Set Attachments. Below the progress bar, there is a section titled 'Affected End Items (1 object)' which contains a table with the following data:

Number	Actions	Name	Context	Comments
FC4200	Actions	EZ_Fold_Golf_Cart	EZ Fold Golf Cart	

Below the table, it says '(0 objects selected)'. At the bottom of the window, there are buttons for 'Back', 'Next', 'Finish', and 'Cancel'. A note at the bottom left states '* Indicates required fields.'

Creating Problem Reports: Select Affected End Items

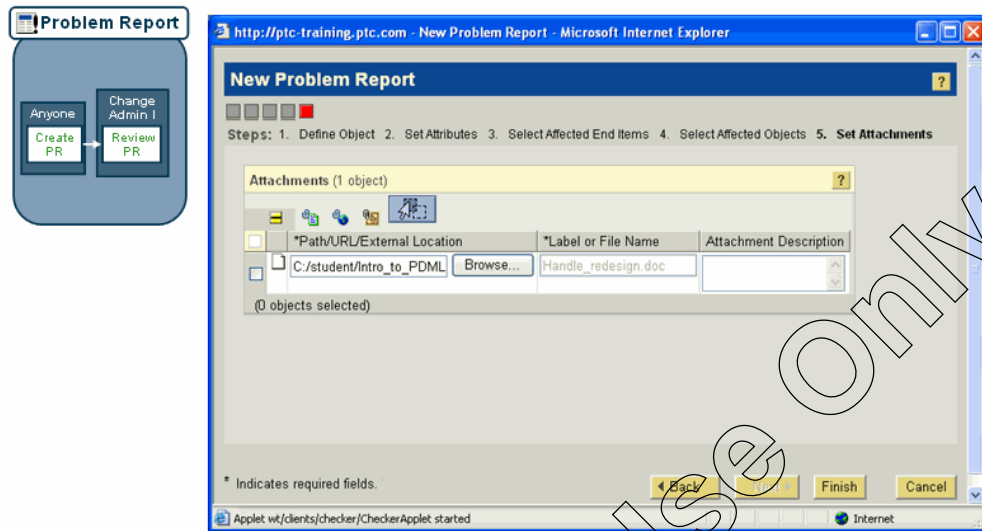
Next, define the affected end items that are impacted as a result of the problem report. This step is optional.



Creating Problem Reports: Select Affected Objects

Next, identify and collect objects that are affected by the problem report.

Creating Problem Reports: Set Attachments



Problem Report

Anyone | Change Admin I

Create PR | Review PR

http://ptc-training.ptc.com - New Problem Report - Microsoft Internet Explorer

New Problem Report

Steps: 1. Define Object 2. Set Attributes 3. Select Affected End Items 4. Select Affected Objects 5. **Set Attachments**

Attachments (1 object)

*Path/URL/External Location	*Label or File Name	Attachment Description
C:/student/Intro_to_PDML	Handle_redesign.doc	

(0 objects selected)

* Indicates required fields.

Back Next Finish Cancel

Applet wt/clients/checker/CheckerApplet started

Creating Problem Reports: Set Attachments

Finally, you can support the problem report with other documentation, such as specifications, reports, spreadsheets, and CAD drawing files. On this page, you can attach a URL, a local file, or an external file.

Lab Exercises

Exercise 1: Submitting Problem Reports

Objectives

After successfully completing this exercise, you will know how to:

- Report problems or suggest enhancements using problem reports.

Scenario

In this exercise, you take the role of John Evans, an Engineer at PTC Sports.


John has received an e-mail from the field team informing him that the golf cart bag holder needs to be redesigned as it is too small to hold larger bags. John is asked to create a problem report in PDMLink, so the change process is initiated.


Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Create a problem report.

1. Select the **Product** major tab to view the products list.
2. Click the **Products** drop-down menu to view all products.
3. Select **EZ Fold Golf Cart** to open the product.
4. Ensure that the Folders minor tab is active. In the left pane, select the **CAD Models** folder to view the contents.
5. In the Folder Contents table, click the lower part of the scroll bar to scroll down and reach the lower bag holder CAD document.
6. Click the **Actions** drop-down menu next to the lower_bag_holder_ez.prt CAD document.
7. Select **New Problem Report** to create a problem report for the lower bag holder part.
8. Type **Bag Holder Design Improvement** in the Name field.
9. Type **Field** in the Requester field.
10. Click the **Priority** drop-down menu to view available choices.
11. Select **Medium** to change the priority level from low to medium.
12. Click the **Category** drop-down menu to view available choices.
13. Select **Product Improvement** to change the Category.
14. Type **See the attachment for details.** in the Description field.
15. In the New Problem Report window, click the **Next** button to go to the next step window.
16. Click the **Add Affected End Items** icon  to add an end item.
17. In the Find Affected End-Items window, type **EZ*** in the Name field to initiate a wild card search.
18. Click the **Search** button to start the search.
19. In the Search Results table, select the check box for the **EZ_Fold_Golf_Cart** end item.
20. Click **OK** to save the information and return to the New Problem Report window.
21. In the New Problem Report window, click the **Next** button to go to the next step window.
22. The bag holder part is listed as the affected object. Click the **Next** button to go to the next step window.

23. Click the **New local file attachment** icon  to attach a local file.
24. Browse to D:\Student\Intro_to_PDMLink\EZ Fold Golf Cart\Documents folder and select the **Bag_holder_redesign.doc** document.
25. Click **Open** to attach the file and to return to the New Problem Report window.
26. Click the **Finish** button to create the problem report.
27. In the Message dialog box, click the **Submit Now** button to submit the problem report automatically.
28. In the Confirmation dialog box, click **OK** to acknowledge the successful creation of the problem report.

This completes the exercise.

For Educational Use Only

Exercise 2: Monitoring Changes

Objectives

After successfully completing this exercise, you will know how to:

- Monitor change objects.

Scenario



In this exercise, you take the role of Sandy Miller. Sandy wants to gauge the status of the problem reports that are outstanding.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as Sandy Miller (smiller/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Use PDMLink's Change Management monitoring tools.

1. Select the **Change** major tab to view the change related information.
2. In the Problem Reports table, click the **Current View** drop-down menu.
3. Select **All Open**.
4. Select the **Change Monitor** minor tab to open the Change Monitor.
5. Click the **All Open Problem Reports** link just below the Problem Reports bar graph.
6. Click the **Windows Close** button  to close the Change Monitor Report window.
7. Select the **Problem Reports** minor tab to view the problem reports.
8. Click the Number link for the Bag Holder Design Improvement problem report.
9. In the problem report details page, click the **Related Objects** drop-down menu to view available choices.
10. Select **Affected End Items** to view the associated end item.
11. Click the **General** drop-down menu.
12. Select **Attributes and Content** to view additional attributes and the attached document file.
13. Click the **History** drop-down menu.
14. Select **Routing/Process** to view the workflow associated to the problem report.
15. In the Routing/Process History table, click the **Actions** menu next to the Problem Report Workflow.
16. Select **Open Process Monitor** to open the process.
17. In the File Download dialog box, click **Open** to open the workflow diagram.
18. Click the **Windows Close** button  to close the process diagram.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Describe PDMLink's Change Management features and benefits.
- Identify change objects.
- View the change process diagram.
- Describe how the change process manages the routing of change objects.
- Describe the difference between a Fast Track and a Full Track change.
- Describe the responsibilities of the Change Administrator roles.
- Report problems.

For Educational Use Only

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. A change object that can be created by anyone who would like to suggest a change or report a problem with a part is called...
 - A - the Problem Report.
 - B - the Change Request.
 - C - the Change Notice.
 - D - the Change Activity.
2. Fast Track change requests should make up approximately...
 - A - 80% of the average change requests within an organization.
 - B - 60% of the average change requests within an organization.
 - C - 40% of the average change requests within an organization.
 - D - 20% of the average change requests within an organization.
3. True or False? It is possible to create a change request without a problem report.
 - A - True
 - B - False

For Educational Use Only

Module 14

Creating Change Requests

Introduction

In this module, you focus on the second object used in the change process: the change request (CR). You learn how to create and analyze a change request. You also participate in the workflow process and complete the workflow tasks related to the change requests.

Objectives

After completing this module, you will be able to:

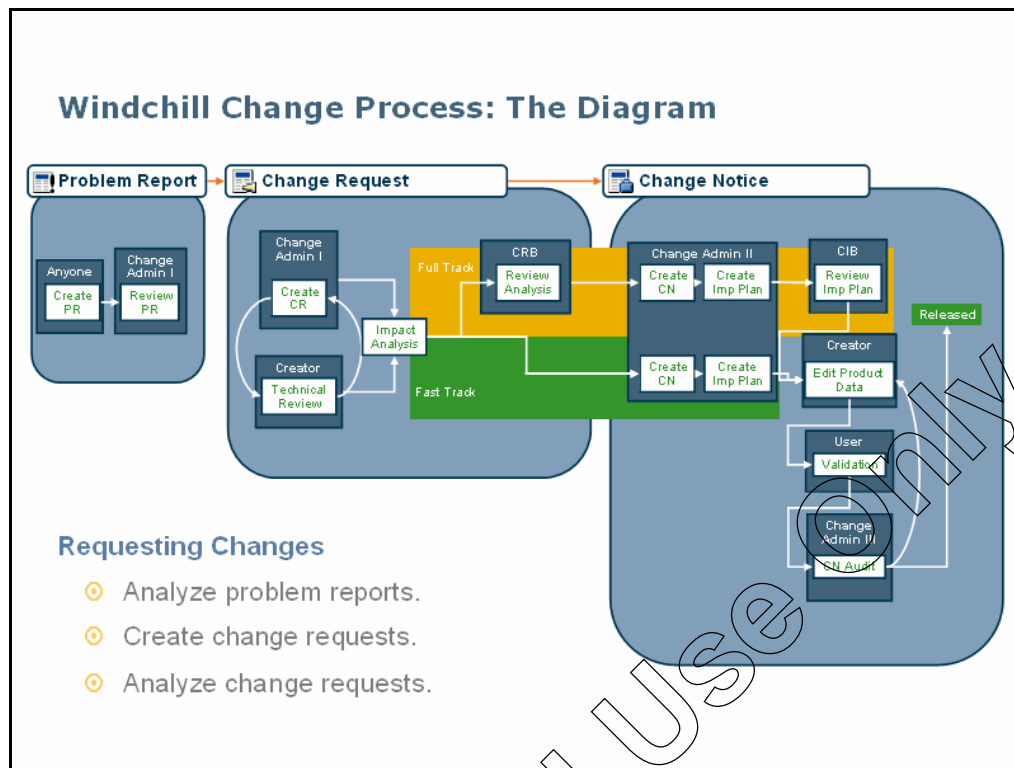
- Analyze problem reports.
- Create change requests.
- Analyze change requests.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

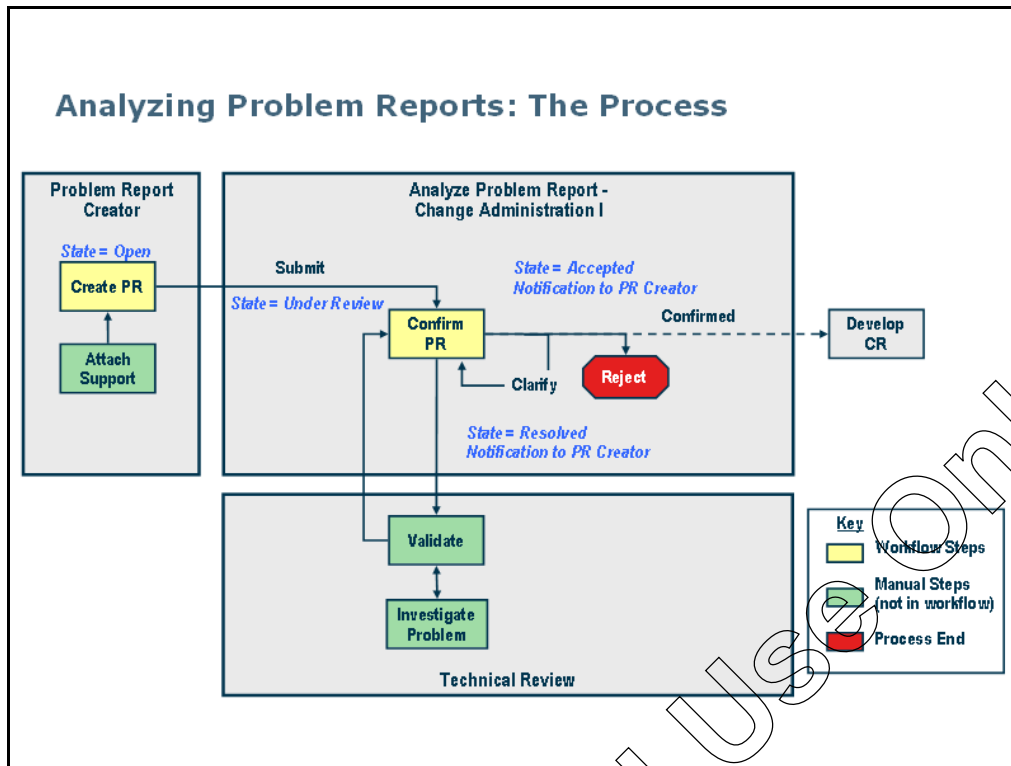
For Educational Use Only



Windchill Change Process: The Diagram

You can use a problem report to describe a product problem or suggest a product enhancement.

This module discusses the process of analyzing problem reports. The next two steps in the change process are creating and analyzing the change request. Change requests may be created from existing problem reports or may be created independently.



Analyzing Problem Reports: The Process

The above flow diagram describes the development and analysis of the problem report.

Once the creator has finished reporting the problem, he or she can submit it. This changes its state to “Under Review” and delivers it to the Change Administrator I for review. The Change Administrator I must then analyze the problem report to confirm that the problem report is valid.

The Change Administrator can decide whether a technical review of the problem report is required. If required, the Change Administrator I can delegate that task to a technical reviewer, but can still retain the responsibility of control of the status of the problem report.

The Change Administrator can select to: confirm the problem report and send it on for change request creation; reject the problem report as an unsuitable idea; or send it to the problem report author for more clarification. Note that red octagons indicate decisions that end the process with appropriate feedback.

If confirmed, the problem report is promoted to the “Accepted” state; if it is a duplicate or is rejected it is promoted to the “Resolved” state. Any problem report that is resolved by closing sends an e-mail notification to the creator of the problem report with the appropriate justification.

Analyzing Problem Reports: Task Details

Analyze Problem Report

Instructions: A problem report has been submitted that requires analysis to determine if further action is required.

1. Analyze the problem report displayed.
2. Enter comments in the Comments text field below.
3. Determine the disposition of the problem report. Click Confirmed, Not_Verified, Not_Reproducible, Will_Not_Resolve, Duplicate, or Clarification.
4. Click Complete Task to advance the problem report.

Subject: [Problem Report - 00041, A](#) **View Problem Report**

Status: Potential

Process Initiator: John Evans

Assignee: John Evans **View Process**

Role: Change Admin I

Priority: Highest

Deadline:

Process: Problem Report Workflow_00051, A

Participants:

Comments:

Choose Disposition

☐ Confirmed
☐ Not_Verified
☐ Not_Reproducible
☐ Will_Not_Resolve
☐ Duplicate
☐ Clarification

Analyzing Problem Reports: Task Details

The Problem Report analysis task displays as an entry in the Assignments table of the Change Administrator I.

Once the Change Administrator I has accessed the Analyze Problem Report task screen, he or she:

- Follows the link just below the task instructions to the details page of the Problem Report and examines the associated information. Alternatively, the Change Administrator I can scroll the task page down to view the problem report information.
- Determines a disposition. For example, when satisfied that the problem is legitimate, the Change Administrator I selects the Confirmed option, and types appropriate comments.
- Clicks the Complete Task button causing the Problem Report to continue through the process.

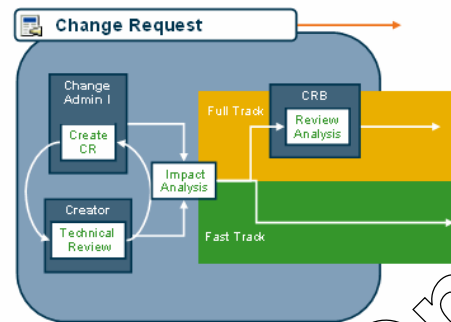
Change Requests: Objectives and Benefits

Change Request Objectives

- ◉ Describe product defects or enhancements.
- ◉ Capture information required for business decision.
- ◉ Record the business decision.

Benefits

- ◉ Communicates impact analysis.
- ◉ Accelerates analysis and decision making.
- ◉ Keeps a historical record.

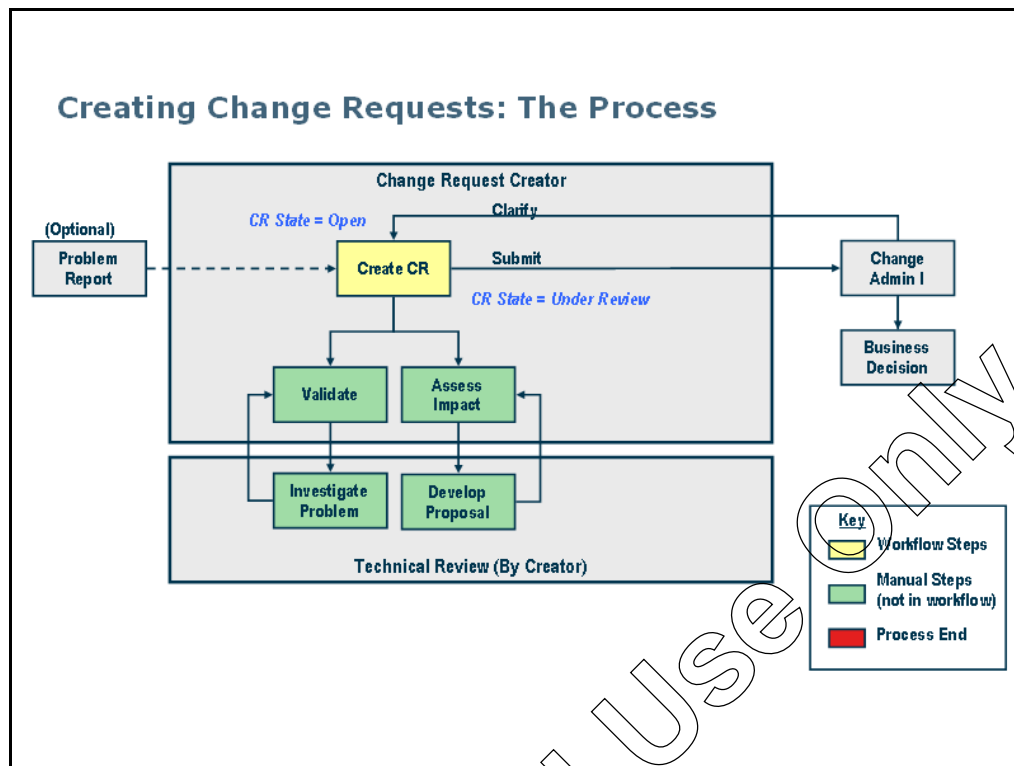


Change Requests: Objectives and Benefits

The next two steps in the change process are creating and analyzing the change request (CR). Change requests may be created from existing problem reports or may be created independently. But why create change requests at all?

Change requests serve three primary objectives: to describe a product defect or proposed enhancement in detail so a business decision can be made; to capture information required for a business decision, including the affected parts and documents, the approach and the risks and benefits and costs involved; and to record the business decisions made during the process, such as whether to make the change, and whether to route it down a full or fast track.

There are many benefits to completing a change request and recording this information. Primarily, it makes the impact of the request understood, speeds up its analysis and decision process, and records all of this for future use. This module continues to examine these stages in the change process in more detail.



Creating Change Requests: The Process

Creating the change request does not require the creation of a problem report. A change request creator can create one to request changes as needed. Typically, only a limited number of Windchill PDMLink 9.0 users may become change request authors. They are usually direct participants in the change process such as engineering and procurement people, members of the change review boards or change administrators.

However, the change requestor should attach any and all problem reports that the change request means to resolve.

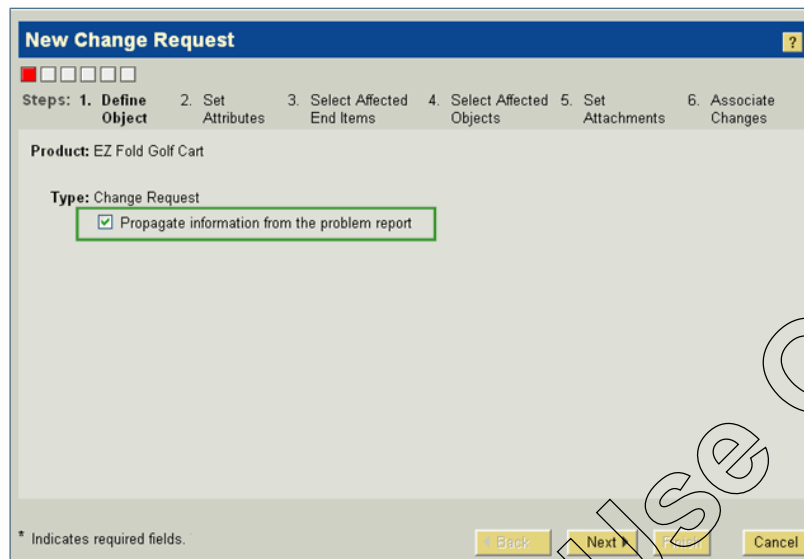
The change request creator has the option of providing additional information to validate the issue and/or impact analysis with corresponding proposals. As indicated by the green boxes, this happens outside of PDMLink. However, the requestor can store the additional information with the change request.

The change request creator may also collaborate with technical reviewers to validate and assess impact. Again, as indicated by the green boxes, this happens outside of PDMLink. However, the requestor can store the additional information with the change request.

Once the change request is saved it is given the state "Open" and may then be submitted to the change process. Change requests are created within a single Product or Library context. Those assigned to the Change Administrator I role in the Team of the Product or Library receive notification of the creation of a change request.

The Change Administrator I must then evaluate the change request, and either make a Business Decision to proceed with the change, or reject the change request. It is possible for the Change Administrator I to return the change request to the author for further clarification. This module continues to examine the process of analyzing change requests .

Creating Change Requests: Define Object



New Change Request ?

Steps: 1. **Define Object** 2. Set Attributes 3. Select Affected End Items 4. Select Affected Objects 5. Set Attachments 6. Associate Changes

Product: EZ Fold Golf Cart

Type: Change Request

☒ Propagate information from the problem report

* Indicates required fields.

Back Next Cancel OK

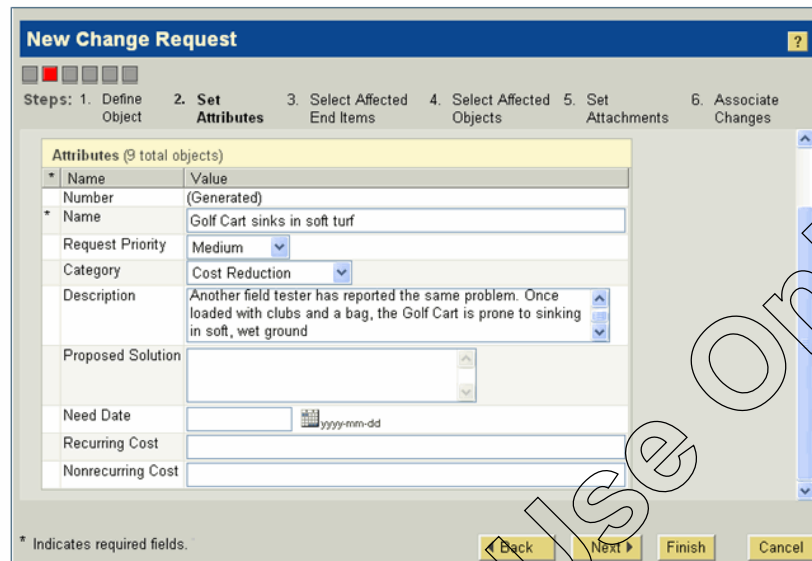
Creating Change Requests: Define Object

The New Change Request window divides the creation of a change request into several steps. First, you must identify change request attributes that determine its identity and control its behavior. The Propagate information from the problem report check box copies information from the problem report to the change request.



The appearance of this check box is controlled by a preference.

Creating Change Requests: Set Attributes



New Change Request

Steps: 1. Define Object 2. **Set Attributes** 3. Select Affected End Items 4. Select Affected Objects 5. Set Attachments 6. Associate Changes

Attributes (9 total objects)

* Name	Value
Number	(Generated)
* Name	Golf Cart sinks in soft turf
Request Priority	Medium
Category	Cost Reduction
Description	Another field tester has reported the same problem. Once loaded with clubs and a bag, the Golf Cart is prone to sinking in soft, wet ground
Proposed Solution	
Need Date	yyyy-mm-dd
Recurring Cost	
Nonrecurring Cost	

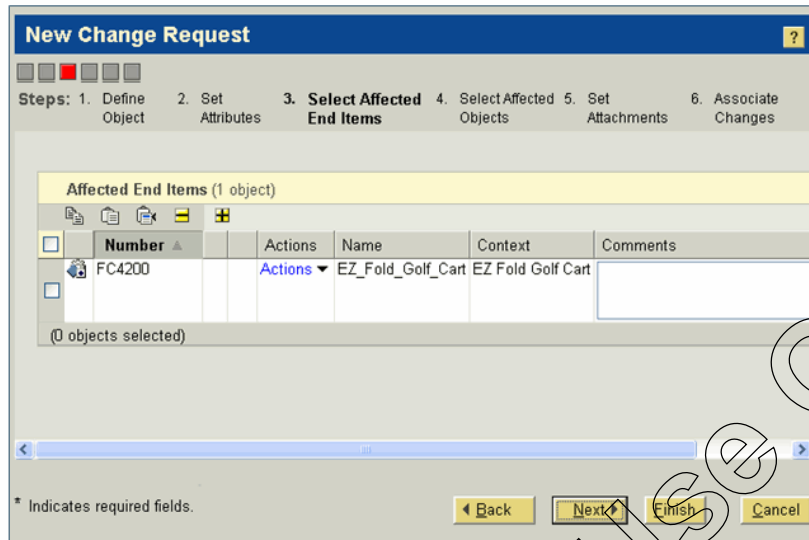
* Indicates required fields.

Back Next Finish Cancel

Creating Change Requests: Set Attributes

Next, you can specify attributes for the change request. If you have selected the Propagate information from problem report check box in the previous step, some attributes, such as Name, Request Priority, Category, and Description are populated automatically. Additionally, you can fill in other optional attributes.

Creating Change Requests: Select Affected End Items



New Change Request ?

Steps: 1. Define Object 2. Set Attributes 3. **Select Affected End Items** 4. Select Affected Objects 5. Set Attachments 6. Associate Changes

Affected End Items (1 object)

Number	Actions	Name	Context	Comments
FC4200	Actions	EZ_Fold_Golf_Cart	EZ Fold Golf Cart	

(0 objects selected)

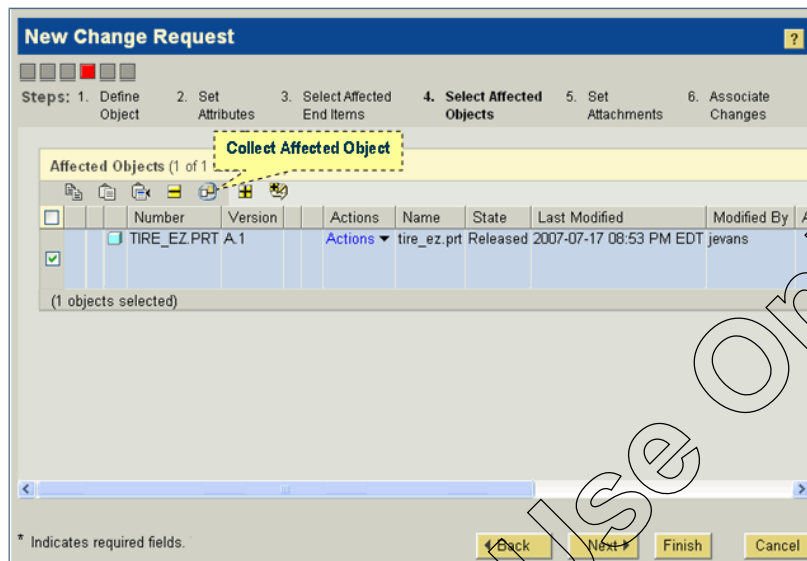
* Indicates required fields.

Back Next Finish Cancel

Creating Change Requests: Select Affected End Items

Next, you define the affected end items that are impacted as a result of the change request. This step is optional.

Creating Change Requests: Select Affected Objects



New Change Request ?

Steps: 1. Define Object 2. Set Attributes 3. Select Affected End Items 4. **Select Affected Objects** 5. Set Attachments 6. Associate Changes

Affected Objects (1 of 1)

Collect Affected Object

	Number	Version	Actions	Name	State	Last Modified	Modified By
<input type="checkbox"/>	TIRE_EZ.PRT	A.1	Actions	tire_ez.prt	Released	2007-07-17 08:53 PM EDT	jevans

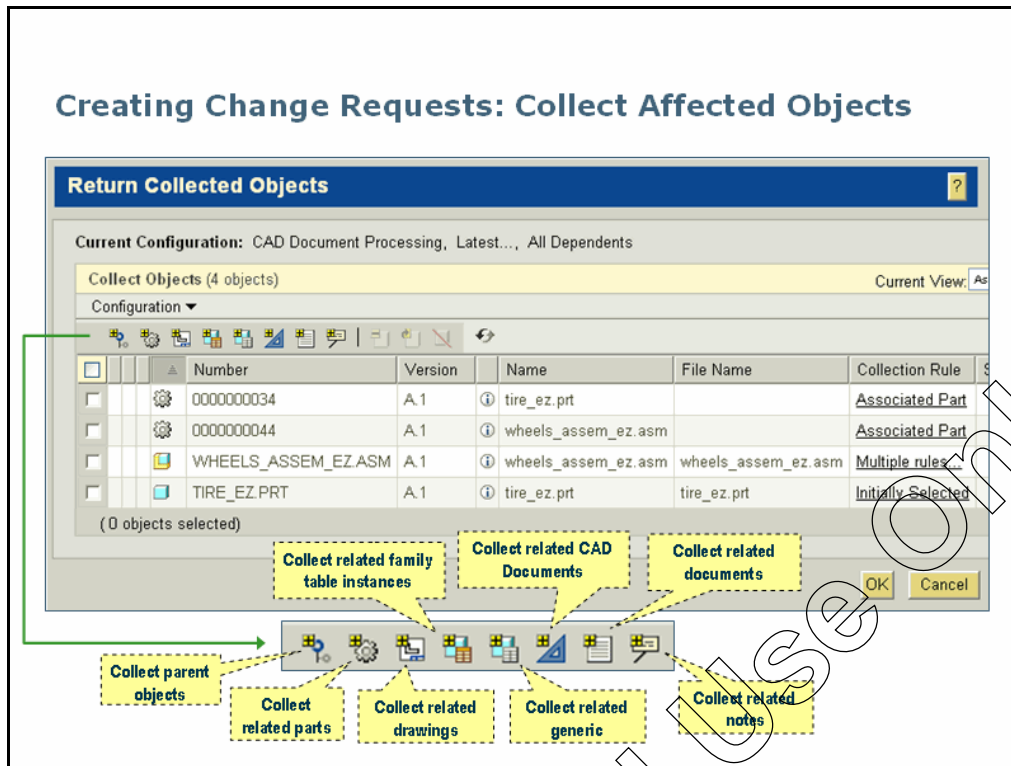
(1 objects selected)

* Indicates required fields.

Back Next Finish Cancel

Creating Change Requests: Select Affected Objects

In the fourth step, you identify and collect objects that are affected by the change request. Besides Copy and Paste, you have the option to click the Collect icon to launch a new window to collect other related objects.

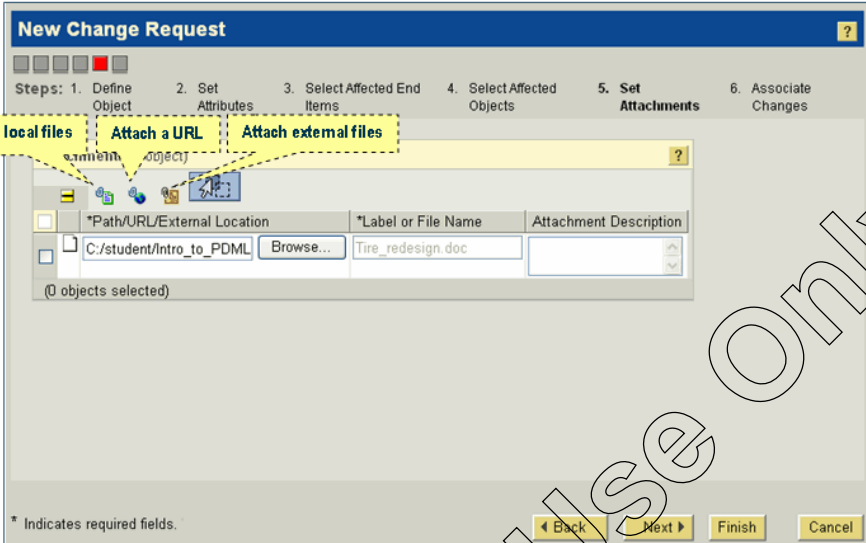


Creating Change Requests: Collect Affected Objects

The Return Collected Object page enables you to collect the following related objects:

- Parent objects
- Related parts
- Related drawings
- Family table instances
- Family table generic
- Related CAD documents
- Related documents
- Related notes

Creating Change Requests: Set Attachments



New Change Request

Steps: 1. Define Object 2. Set Attributes 3. Select Affected End Items 4. Select Affected Objects 5. **Set Attachments** 6. Associate Changes

Attach local files Attach a URL Attach external files

*Path/URL/External Location	*Label or File Name	Attachment Description
C:/student/Intro_to_PDML	Tire_redesign.doc	

(0 objects selected)

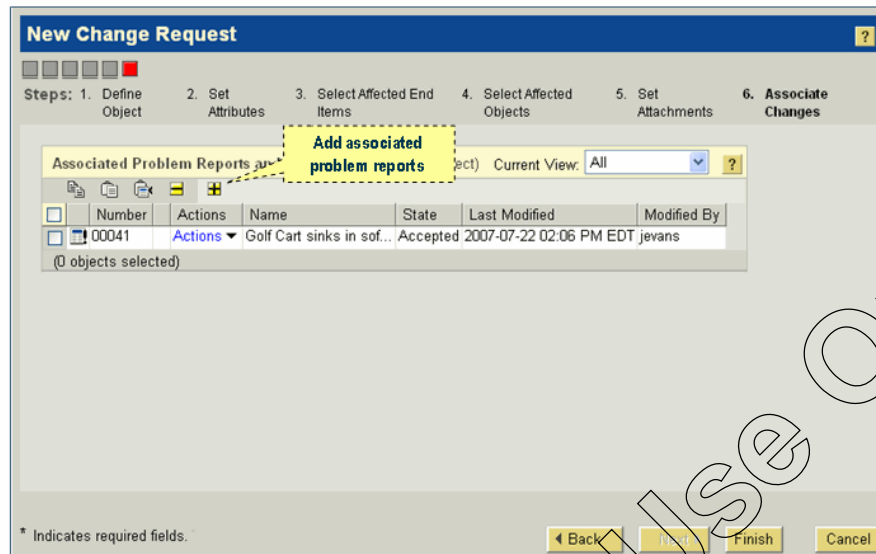
* Indicates required fields.

Back Next Finish Cancel

Creating Change Requests: Set Attachments

You can also support the change request with other documentation, such as specifications, reports, spreadsheets, and CAD drawing files. You have the option to attach a local file, a URL, or an external file.

Creating Change Requests: Associate Changes



New Change Request ?

Steps: 1. Define Object 2. Set Attributes 3. Select Affected End Items 4. Select Affected Objects 5. Set Attachments 6. Associate Changes

Associated Problem Reports (0 objects selected) Current View: All ?

Add associated problem reports

	Number	Actions	Name	State	Last Modified	Modified By
<input type="checkbox"/>	00041	Actions	Golf Cart sinks in sof...	Accepted	2007-07-22 02:06 PM EDT	jevans

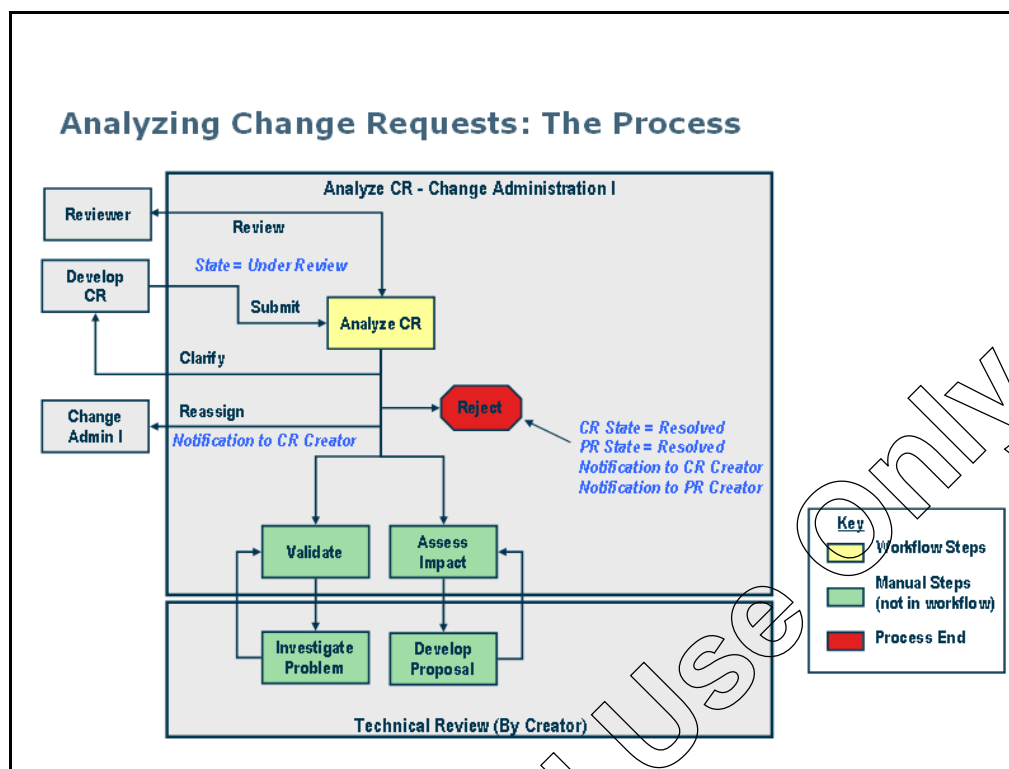
(0 objects selected)

* Indicates required fields.

Back Next Finish Cancel

Creating Change Requests: Associate Changes

Finally, you can optionally associate this change request to all related problem reports. If you launched the New Change Request from a particular problem report, that problem report is automatically associated to the change request.



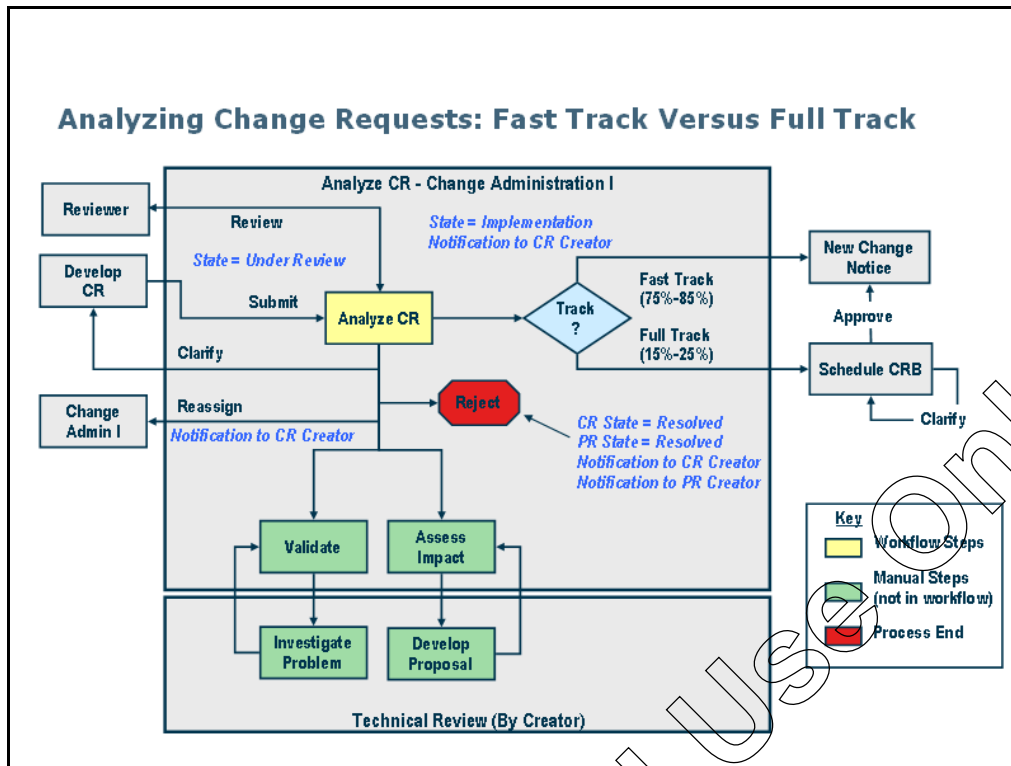
Analyzing Change Requests: The Process

Once the change request is developed and submitted, the next step is analysis by Change Administrator I.

As mentioned previously, change requests are created within a single Product or Library context. If the Change Administrator I feels that the change request should have been given to another Change Administrator I (for example, the change request has a larger impact on another product) the Change Administrator I may reassign it or send it for a formal review.

Outside of the process, the change request is validated and one or many proposals are examined. Each proposal has a measured impact on the cost of the product. These costs and other intangible impacts are reported on the change request.

After impact analysis, the Change Administrator I may conclude that the costs far outweigh the benefits. He or she may then reject the change request without further review.



Analyzing Change Requests: Fast Track Versus Full Track

On the other hand, if the benefits do outweigh the cost, the Change Administrator I must select either the fast track or full track branch of the process. The cost benefit decision is usually measured against a cost threshold expressed in dollars that is predetermined by company policy.

- **Fast track** changes bypass the Change Review Board (CRB) and are sent directly to Change Administrator II for implementation. Fast track changes usually comprise about 80% of all change requests in any company.
- **Full track** changes are sent to the Change Review Board for business decision. The Change Review Board, which is headed by the Change Administrator I, must then analyze the change request further, and either approve the change request or send it back to the author for clarification.

Analyzing Change Requests: Task Details

Analyze Change Request

Instructions: A change request has been submitted that requires analysis to determine if further action is required.

- To complete the analysis:
 - Read the **Special Instructions** below, if any.
 - Scroll to the bottom of this page to review change request information.
 - Coordinate the technical analysis and generation of recommended solution.
- To complete this assignment:
 - (Optional) Enter comments in the **Comments** field below.
 - (Optional) Enter specific directions for the next task in the **Special Instructions** field.
 - Determine the routing of the change request. Click **Fast_Track**, **Full_Track**, **Clarify**, **Reassign**, **Reject**, or **Review**.
 - Click **Complete Task** below to advance the change request or click **Save** to advance it at a later time.

Special Instructions:

Change Request

Subject: [Change Request - 00021_A](#)

Status: Potential

Process Initiator: John Evans

Assignee: Sandy Miller

Role: Change Admin I

Priority: Highest

Deadline:

Process: [Change Request Workflow_00021_A](#)

Change Request Process

Comments:

☐ Fast_Track
 ☐ Full_Track
 ☐ Clarify
 ☐ Reassign
 ☐ Reject
 ☐ Review

Task Disposition

Analyzing Change Requests: Task Details

In this task, you are able to route the change request down a number of paths.

Of course, you can select fast track or full track. However, you could also send it back to its creator for clarification, reassign it to someone else (perhaps a change administrator for a parent or related object) or reject it completely. If you select the Fast Track or the Full Track option, you can auto-create a change notice as well.

Lab Exercises

Exercise 1: Analyzing Problem Reports

Objectives

After successfully completing this exercise, you will know how to:

- Analyze problem reports.
- Determine whether to create a change request.

Scenario

In this exercise, you take the role of Sandy Miller, the Change Administrator I for the EZ Fold Golf Cart product at PTC Sports. Acting as Sandy, you continue the change process by reviewing problem reports. You will walk through Sandy's entire process, reviewing and applying many of the skills you have learned previously.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as Sandy Miller (smiller/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Locate and analyze the problem reports for the golf cart's Handle part.

1. In the assignments table, click the **Analyze Problem Report** link for the Bag Holder Design Improvement problem report to open the task details.
2. Click the Problem Report link next to the Subject label to open the problem report details.
3. In the Affected Objects table at the bottom, click the **View information** icon ⓘ for the lower_bag_holder_ez part.
4. The bag holder's details page opens. Click the **General** drop-down menu to view available options.
5. Select **Where Used** to view the parent assembly or assemblies.
6. Click the **Related Objects** drop-down menu to view available options.
7. Select **Changes** to view the associated change objects.
8. In the Problem Report and Variances table, click the **View information** icon ⓘ for the Bag Holder Design Improvement problem report to return to the problem report's details page.

Task 2. Complete the Analyze Problem Report tasks.

1. Select the **Home** major tab to view the assignment list.
2. Click the **Analyze Problem Report** link for the Bag Holder Design Improvement problem report to open the task details.
3. Type **Problem report is valid.** in the Comments field.
4. Select the **Confirmed** option just below the Comments field to confirm the problem report.
5. Click the lower part of the scroll bar to scroll down and view more options.
6. Click the **Complete Task** button to complete the Analyze Problem Report task.
7. The Analyze Problem Report task has disappeared.

This completes the exercise.

Exercise 2: Creating Change Requests

Objectives

After successfully completing this exercise, you will know how to:

- Create Change Requests.

Scenario

In this exercise, you take the role of John Evans, an engineer for the EZ Fold Golf Cart product at PTC Sports.




Having analyzed the impact and performed a cost analysis outside of PDMLink, it is now John's responsibility to create the change request. Acting as John, you will continue the change process by creating an appropriate change request. You will walk through John's entire process, reviewing and applying many of the skills you have learned previously.


Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:






- Log on to Windchill PDMLink as John Evans (jevans/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Create a Change Request.


1. In the Updates table, click the **View information** icon  next to the Bag Holder Design Improvement problem report to open the details page of the problem report.
2. Click the problem report's **Actions** drop-down menu in the top-left corner to view available options.
3. Select **New Change Request** to open the create change request form.
4. In the New Change Request window, select the **Propagate information from the problem report** check box to import information from the problem report into the new change request.
5. Click the **Next** button to set the change request attributes.
6. Type **Create a new bag holder version.** in the Proposed Solution field.
7. Click the **Next** button to go to the next step window.
8. Ensure that the EZ_Fold_Golf_Cart is listed in the Affected End Items table. Click the **Next** button to go to the next step window.
9. Ensure that the lower bag holder CAD document is listed in the Affected Objects table. Select the LOWER_BAG_HOLDER_EZ.PRT check box.
10. Click the **Collect affected objects** icon  to generate a list of all affected objects.
11. Click the **Configuration** drop-down menu to view available options.
12. Select **Add Dependency**.
13. Select **None** to remove all dependents.
14. On the Return Collected Objects page, select the LOWER_BAG_HOLDER_EZ.PRT check box.
15. Click the **Collect object where the selected object is used** icon to add the parent assembly CAD document.
16. The parent assemblies are added. Select the **Select all rows** check box to select all CAD documents.
17. Click the **Collect related parts** icon  to add the corresponding Windchill parts in the list.
18. Click the **OK** button to save the information and return to the New Change Request window.

19. Click the **Next** button to go to the next step window.
20. Ensure that the Bag_holder_redesign.doc is listed as the attachment. Click the **Next** button to go to the next step window.
21. Click the **Add Associated Problem Reports and Variances** icon  to associate another problem report with the change request.
22. In the Find Associated Problem Reports and Variances window, type ***Golf Cart Product Issue*** in the Name field to launch a search for the problem report.
23. Click the **Search** button to start the search.
24. In the Search Results table, select the check box for the EZ Fold Golf Cart Product Issue problem report.
25. Click **OK** to save the information and return to the New Change Request window.
26. Click **Finish** to create the change request.
27. In the Message dialog box, click the **Submit Later** button to indicate that the change request is not ready and it will be submitted later.
28. Click **OK** in the confirmation dialog box to acknowledge the successful completion of the change request.
29. Select the **Home** major tab to view a Submit Change Request task in the Assignments table.

Task 2. Modify the change request by adding an annotation.

1. Select the **Product** major tab to access the EZ Fold Golf Cart product and locate annotation.
2. Ensure that the Folders minor tab is displayed. Click the **View information** icon  for the EZ_Fold_Golf_Cart end item to open the details page.
3. Click the **Display List of Representations** icon  just below the golf cart thumbnail.
4. Click the **Display list of annotations and groups** icon  to view the annotations.
5. Click the **Copy annotation/group to Clipboard** icon  next to the annotation.
6. Click **OK** in the alert dialog box to confirm copying the annotation in the clipboard.
7. Click the **Close** button to return to the golf cart details page.
8. Select the **Home** major tab to view the assignments table.
9. Click the **Submit Change Request** link in the Assignments table to open the task details.
10. Click the lower part of the inner scroll bar to scroll down and view the associated change request information.
11. Click the **Actions** drop-down menu for the change request to view available options.
12. Select **Edit Change Request** to make modifications to the change request.
13. Click the **Next** button to go to the Affected End Items step window.
14. Click the **Next** button again to go to the Affected Objects step window.
15. In the Affected Objects table, click the **Actions** drop-down menu for the lower_bag_holder_ez.prt CAD document.
16. Select **Edit Annotations**.
17. Click the **Current View** drop-down menu.
18. Select **All with Thumbnail images** to view annotations with thumbnails.
19. In the Annotations table, click the **Paste** icon  to paste the annotation from the clipboard.
20. In the Edit Annotations window, click the **OK** button to save the information and close the window.

Task 3. Add the golf cart owner's manual document as the affected object in the change request.

1. On the Edit Change Request page, click the **Add Affected Objects** icon  to add a document.
2. In the Find Affected Objects window, type **EZ Fold Golf Cart Owner's Manual** in the Name field.
3. Click the **Search** button to launch the search.
4. In the Search Results table, select the check box for the EZ Fold Golf Cart Owner's Manual document.
5. Click the **OK** button to return to the Edit Change Request page.
6. In the Edit Change Request window, click the **Finish** button to complete the modifications.
7. In the Message dialog box, click the **Submit Later** button to indicate that the change request will be submitted later.

Task 4. Manually submit the change request.

1. On the Submit Change Request page, type **All required documents are attached.** in the Comments field.
2. Click the **Complete Task** button to complete the Submit Change Request task.

This completes the exercise.

For Educational Use Only

Exercise 3: Analyzing Change Requests

Objectives

After successfully completing this exercise, you will know how to:

- Analyze Change Requests (CRs).

Scenario

In this exercise, you take the role of Sandy Miller, the Change Administrator I for the EZ Fold Golf Cart product at PTC Sports.

Now that the change request has been authored, the next step is to perform a validation and impact analysis. The analysis should determine whether the change should be implemented, and if implemented, whether it should be a fast track or full track change.


Acting as Sandy, you continue the change process by analyzing the change request John created. Based on this analysis, you will decide whether to route the change through the fast track or the full track.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to Windchill PDMLink as Sandy Miller (smiller/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Complete the Analyze Change Request task.

1. In assignments table, click the **Analyze Change Request** link for the Bag Holder Design Improvement change request to open the task details.
2. Click the lower part of the scroll bar to scroll down and view the associated change request information.
3. Click the **Related Objects** drop-down menu.
4. Select **Annotations** to view the attached annotations.
5. In the Annotations table, click the **Current View** drop-down menu.
6. Select **All with Thumbnail images** to view annotations with thumbnails.
7. Click the golf cart thumbnail to open the annotation in ProductView.
8. Click the ProductView icon  in the top-left corner of the window.
9. Select **Exit** to close the ProductView window.
10. Click the upper part of the scroll bar scroll up and reach the Comments section of the task.
11. Type **This change will not likely be an expensive one.** in the Comments field.
12. Select the **Fast_Track** option to indicate that the change request will be routed through a fast track process.
13. Click the **Complete Task** button to complete the Analyze Change Request task.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Analyze problem reports.
- Create change requests.
- Analyze change requests.

For Educational Use Only

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. How many problem reports can be associated to a change request?
 - A - Only one
 - B - Only two
 - C - Multiple
 - D - None
2. How is the change request routed through the Change Review Board (CRB)?
 - A - Fast track
 - B - Full track
 - C - A and B
3. Who can create a change request?
 - A - An engineer
 - B - Change Administrator I
 - C - Change Administrator II
 - D - Any designated individual

For Educational Use Only

For Educational Use Only

Module 15

Creating Change Notices

Introduction

In this module, you focus on the last object used in the change process: the change notice. The next part of the process is the implementation planning and execution phase. The primary role for this part of the process is the Change Administrator II (CA II). The Change Administrator II is responsible for creating an implementation plan that records all the work that must be done in order to implement the change, as well as monitoring that work as it is done.

Objectives

After completing this module, you will be able to:

- Describe the capabilities of change notices.
- Create change notices and implementation plans.

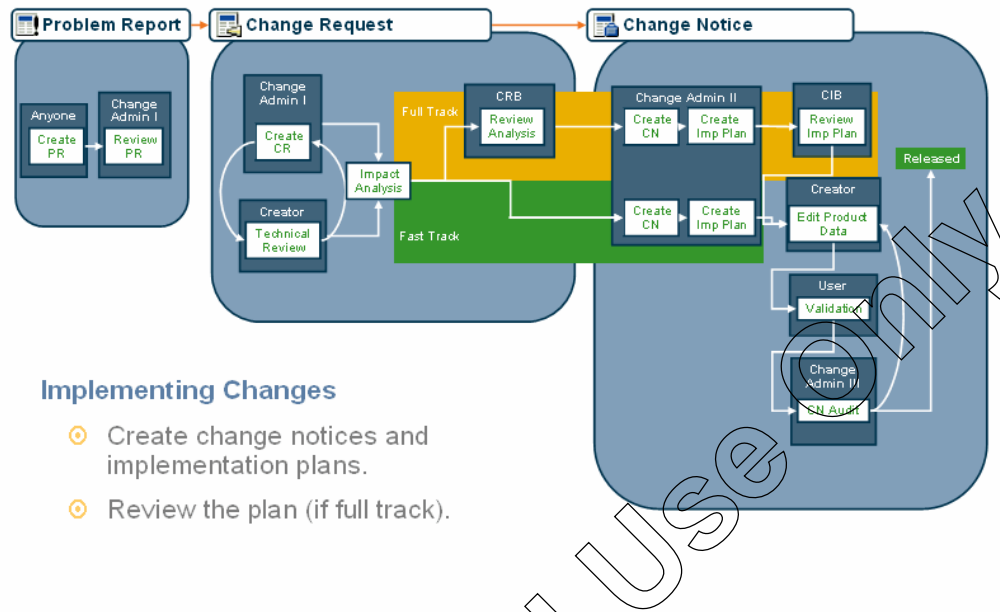
Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

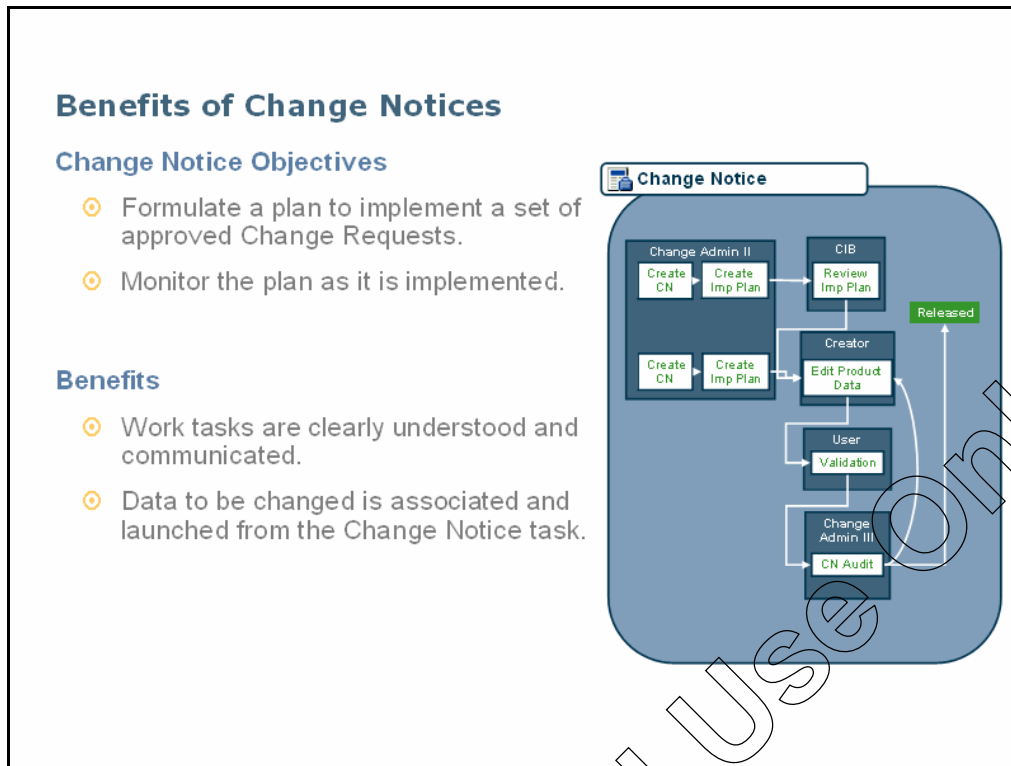
For Educational Use Only

Windchill Change Process: The Diagram



Windchill Change Process: The Diagram

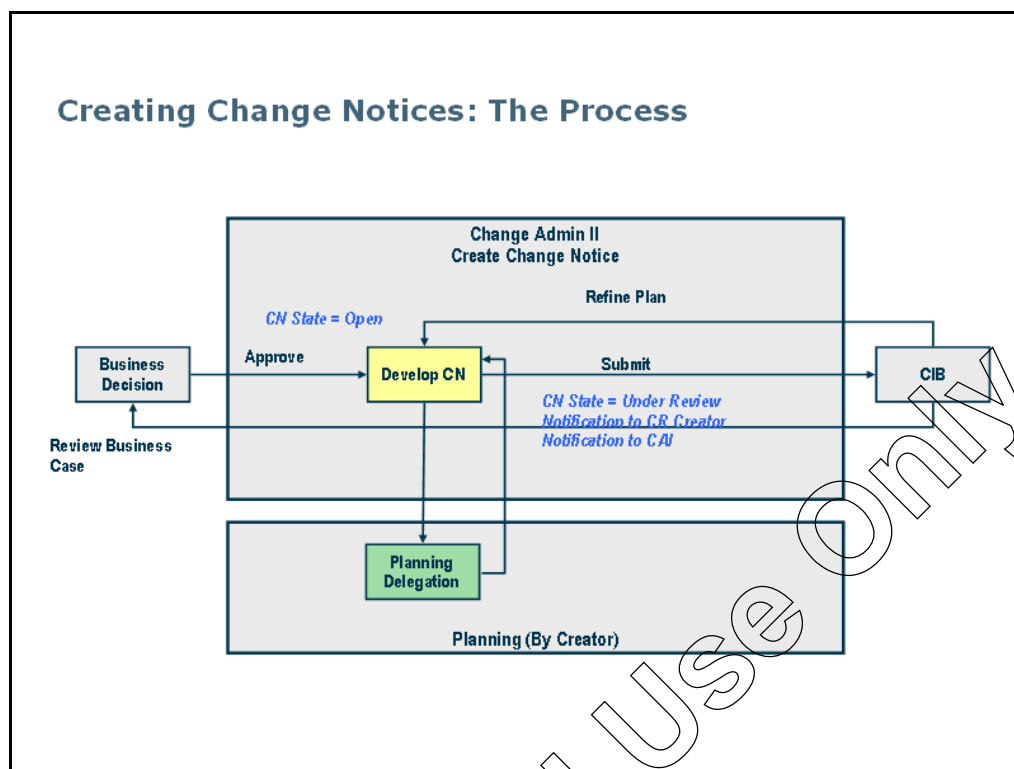
The next phase of the process is the implementation planning and execution phase. You learn how to create and review a change notice.



Benefits of Change Notices

The primary change form used for implementation is the change notice (CN). The purpose of the change notice is to establish an implementation plan for the approved change request. The implementation plan can be created in reference to one or more change requests, or it can be created without a change request if your administrator has configured your change process to do so. A single implementation plan may be comprised of many tasks which need to all be completed in order for a change request to be met. Within the change notice, you can assign change tasks to specific participants for each part and document that will be modified. For example, you can assign a drawing document that needs to be changed to a designer.

What are the benefits of assigning these multiple tasks using a single change notice? The individual tasks can be more easily understood and communicated. It is easy for each person to locate the parts and documents that they need to modify, as they are associated to each task.



Creating Change Notices: The Process

If you decide to make the changes suggested in the change request, the Change Administrator II creates the change notice and the table of parts and documents that must be modified to implement the change request.

The planning process includes assigning people to each required data modification. It may be necessary for Change Administrator II to delegate planning activities to another technical resource; however Change Administrator II remains responsible for the total plan. It is also Change Administrator II's responsibility to set the effectivity for each new or revised part version.

For full track changes, the next step is to obtain approval of the change notice implementation plan from the Change Implementation Board (CIB). If the plan is on the fast track, then the implementation tasks are sent to the individuals to which they were assigned.

If the Change Implementation Board believes that the plan is incomplete or inaccurate it may be sent back to the Change Administrator II for further planning. The change request/change notice package may also be sent back to the Change Administrator II for further review of the change request if details of the implementation plan cause the cost/impact of the change to increase.

Creating Change Notices: Define Object

New Change Notice

Steps: 1. Define Object 2. Set Attributes 3. Define Implementation Plan 4. Set Attachments 5. Associate Changes

Product: EZ Fold Golf Cart

Type: Change Notice

☒ Propagate information from the change request

* Indicates required fields.

Back Next Finish Cancel

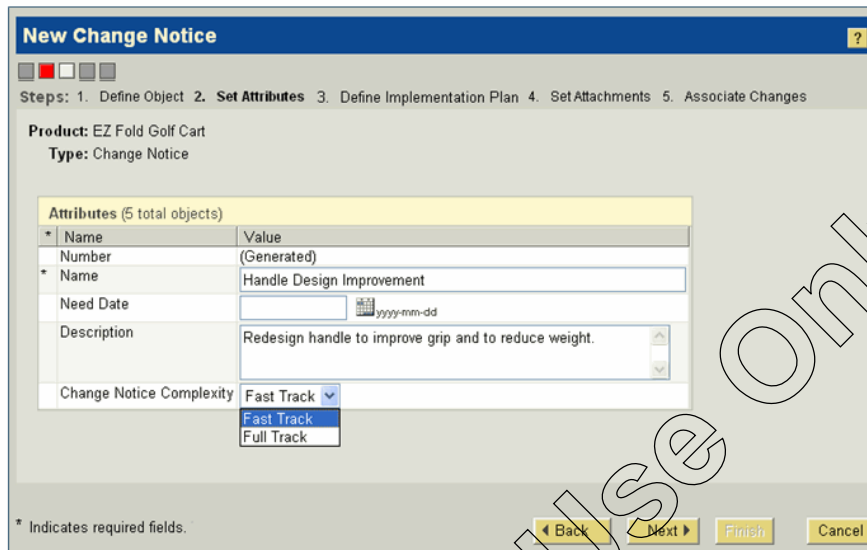
Creating Change Notices: Define Object

The creation of change notices is comprised of several steps. When you create a change notice from a change request, the Define Object step contains a Propagate information from the change request check box. When you select the check box, several fields, such as Name, Description, Need by date, and Attachments are copied from the change request to the change notice. Using the propagation functionality reduces the data entry to create the change notice.



The appearance of the propagate check box is controlled by a preference. If you do not see it, an administrator has disabled the preference.

Creating Change Notices: Set Attributes



New Change Notice ?

Steps: 1. Define Object 2. **Set Attributes** 3. Define Implementation Plan 4. Set Attachments 5. Associate Changes

Product: EZ Fold Golf Cart
Type: Change Notice

Attributes (5 total objects)

* Name	Value
Number	(Generated)
* Name	Handle Design Improvement
Need Date	<input type="text"/> yyyy-mm-dd
Description	Redesign handle to improve grip and to reduce weight.
Change Notice Complexity	Fast Track

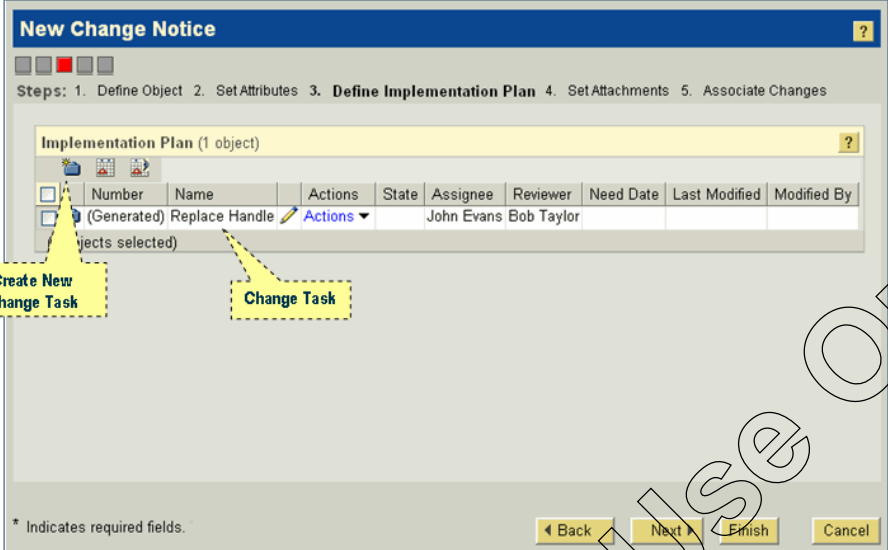
* Indicates required fields.

Back Next Finish Cancel

Creating Change Notices: Set Attributes

You can use the Set Attributes screen to provide the descriptive attributes associated with the change notice. The attributes include Name, Need Date, Description, and Change Notice Complexity. Number is automatically generated. The complexity of the change notice may be defined by the system (in the case of being launched from a Full-Track launch point) or may be specified (in the case of a change request with an unassigned complexity). Valid values are Fast and Full.

Creating Change Notices: Define Implementation Plan



New Change Notice ?

Steps: 1. Define Object 2. Set Attributes 3. **Define Implementation Plan** 4. Set Attachments 5. Associate Changes

Implementation Plan (1 object) ?

<input type="checkbox"/>	Number	Name	Actions	State	Assignee	Reviewer	Need Date	Last Modified	Modified By
<input type="checkbox"/>	(Generated)	Replace Handle	Actions		John Evans	Bob Taylor			

Objects selected)

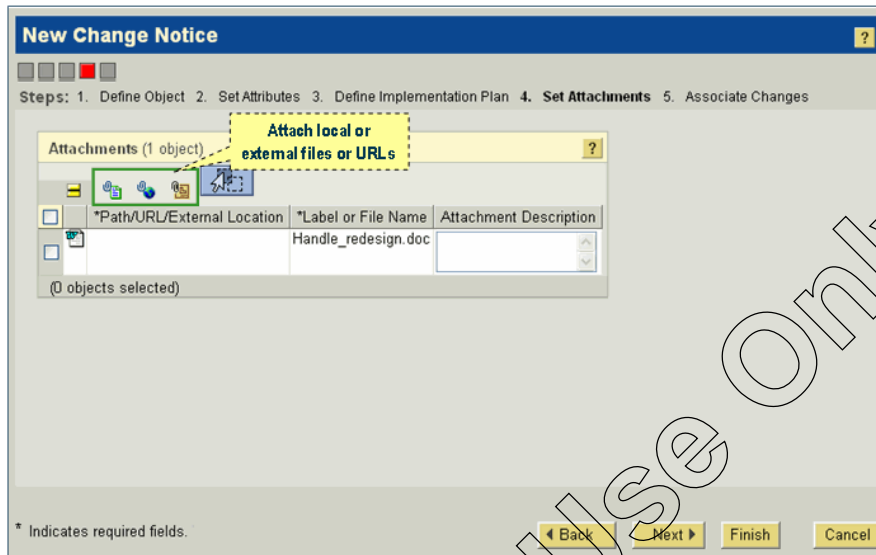
* Indicates required fields.

Back Next Finish Cancel

Creating Change Notices: Define Implementation Plan

You can add, modify, or remove tasks associated with the change notice. The change notice requires a minimum of one change task for the change notice session to be completed. Change tasks are discussed in more details in the subsequent sections.

Creating Change Notices: Set Attachments



New Change Notice ?

Steps: 1. Define Object 2. Set Attributes 3. Define Implementation Plan 4. **Set Attachments** 5. Associate Changes

Attachments (1 object) ?

Attach local or external files or URLs

*Path/URL/External Location	*Label or File Name	Attachment Description
	Handle_redesign.doc	

(0 objects selected)

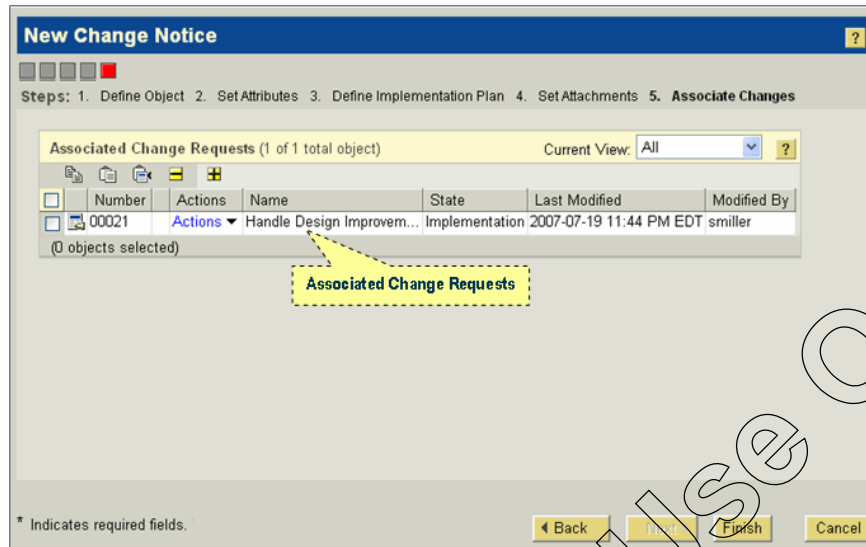
* Indicates required fields.

Back Next Finish Cancel

Creating Change Notices: Set Attachments

You can support the change notice with other documentation, such as specifications, reports, spreadsheets, and CAD drawing files. You have the option to attach a local file, an external file, or a URL.

Creating Change Notices: Associate Changes



New Change Notice [?]

Steps: 1. Define Object 2. Set Attributes 3. Define Implementation Plan 4. Set Attachments 5. **Associate Changes**

Associated Change Requests (1 of 1 total object) Current View: All [?]

<input type="checkbox"/>	Number	Actions	Name	State	Last Modified	Modified By
<input checked="" type="checkbox"/>	00021	Actions	Handle Design Improvem...	Implementation	2007-07-19 11:44 PM EDT	smiller

(0 objects selected)

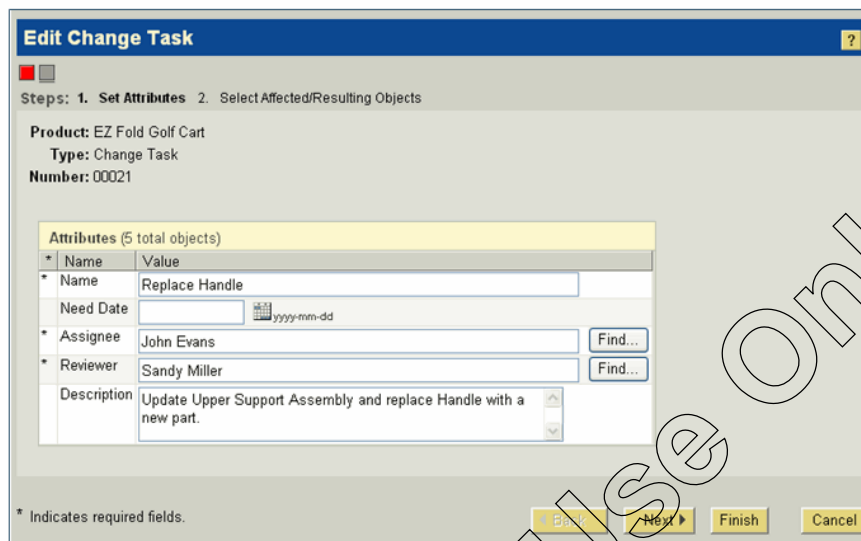
* Indicates required fields.

[Back] [Next] [Finish] [Cancel]

Creating Change Notices: Associate Changes

Finally, you can associate one or more change requests to this change notice. The change request (from where the change notice is created) is automatically listed on this page.

Editing Change Tasks: Set Attributes




Edit Change Task

Steps: 1. Set Attributes 2. Select Affected/Resulting Objects

Product: EZ Fold Golf Cart
Type: Change Task
Number: 00021

Attributes (5 total objects)

Name	Value
* Name	Replace Handle
* Need Date	 yyyy-mm-dd
* Assignee	John Evans Find...
* Reviewer	Sandy Miller Find...
Description	Update Upper Support Assembly and replace Handle with a new part.

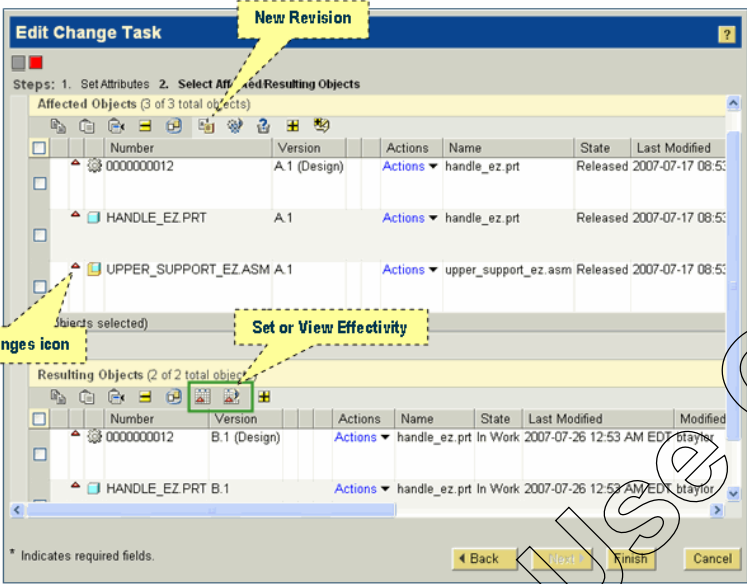
* Indicates required fields.

Back Next Finish Cancel

Editing Change Tasks: Set Attributes

A change task is a work instruction that is necessary to complete in order to satisfy a given change notice. A change notice may have one or more change tasks. One change task is automatically created when you create the change notice. You edit the task details or create a new task. To create a change task, click the New Change Task icon from the Implementation Plan table of a change notice. The New Change Task window divides the creation of a change task into several steps. On the Set Attributes step window, you provide the descriptive attributes associated with the change task.

Editing Change Tasks: Select Affected/Resulting Objects



Edit Change Task

Steps: 1. Set Attributes 2. Select Affected/Resulting Objects

Affected Objects (3 of 3 total objects)

Number	Version	Actions	Name	State	Last Modified
0000000012	A.1 (Design)	Actions	handle_ez prt	Released	2007-07-17 08:5
HANDLE_EZ PRT	A.1	Actions	handle_ez prt	Released	2007-07-17 08:5
UPPER_SUPPORT_EZ.ASM A.1		Actions	upper_support_ez.asm	Released	2007-07-17 08:5

Resulting Objects (2 of 2 total objects)

Number	Version	Actions	Name	State	Last Modified	Modified
0000000012	B.1 (Design)	Actions	handle_ez prt In Work	In Work	2007-07-26 12:53 AM EDT	btaylor
HANDLE_EZ PRT B.1		Actions	handle_ez prt In Work	In Work	2007-07-26 12:53 AM EDT	btaylor

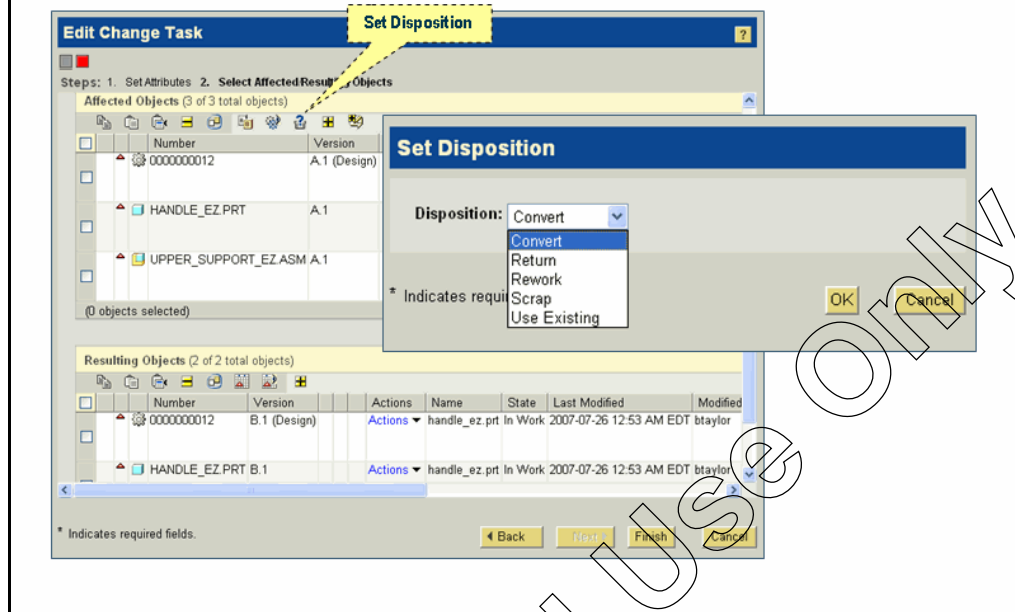
* Indicates required fields.

Buttons: Back, Next, Finish, Cancel

Editing Change Tasks: Select Affected/Resulting Objects

In the next step, you identify and collect objects that are affected by the change task. You can then revise any object or create a one-off version. For example, a one-off version of a part with a revision label of A is A-1. Both the one-off versions or the revisions are then added to the Resulting Objects table automatically. You can also manually add components to the Resulting Objects table. Once added, you can set effectivity criteria for certain components, such as Windchill parts and end items.

Setting the Disposition of Affected Objects



Setting the Disposition of the Affected Objects

You can use the following procedure to update the disposition of one or more parts that are added to the Affected Objects table in the change task:

- From the Affected Objects table, select one or more objects whose disposition you want to change.
- Click the set disposition icon.
- The Set Disposition window appears. From the Disposition drop-down list, select the disposition to which you want the part or parts changed. Examples of dispositions include:
 - Convert – Convert the object to another object.
 - Return – Return inventory to the supplier.
 - Rework – Rework the existing inventory so the objects meet specification and can be used.
 - Scrap – Destroy all existing inventory of objects.
 - Use existing – Use the existing inventory as they exist.

Change Tasks: Details

Product: EZ Fold Golf Cart

Actions **Change Task - 00021 (Replace Handle)** **State:** Imple

Change Notice: [Change Notice - 00021.A](#)

Name: Replace Handle

Description: Update Upper Support Assembly ...

Assignee: [John Evans](#)

State: Open - **Implementation** - Under Review - Resolved - Canceled

[More Attributes](#)

General **Related Objects** History Collaboration

Affected Objects (3 of 3 total objects)

	Number	Version	Actions	Name	State	Last Modified	Modified By
<input type="checkbox"/>	0000000012	A.1 (Design)	Actions	handle_ez prt	Released	2007-07-17 08:53 PM EDT	jevans
<input type="checkbox"/>	HANDLE_EZ.PRT	A.1	Actions	handle_ez prt	Released	2007-07-17 08:53 PM EDT	jevans
<input type="checkbox"/>	UPPER_SUPPORT_EZ.ASM	A.1	Actions	upper_support_ez.asm	Released	2007-07-17 08:53 PM EDT	jevans

(0 objects selected)

Compare Objects

Resulting Objects (2 of 2 total objects) Current View: All ?

	Number	Version	Actions	Name	State	Last Modified	Modified By	Comments
<input type="checkbox"/>	0000000012	B.1 (Design)	Actions	handle_ez prt	In Work	2007-07-26 12:53 AM EDT	bjaylor	
<input type="checkbox"/>	HANDLE_EZ.PRT	B.1	Actions	handle_ez prt	In Work	2007-07-26 12:53 AM EDT	bjaylor	

(0 objects selected)

Change Tasks: Details

This page shows the details page of a configured change task. In the Resulting Objects table, you can use the Compare Objects icon to compare different version of the objects after the changes are made.

Setting Effectivity

Effectivity Types

- Date, Serial Number, Manufacturing Sequence Number (MSN), Lot Number, Block Number

Set Effectivity

Define the effectivity parameters for selected parts.

Set Effectivity (1 object)

Number	Version	Name	Effectivity Context	Effectivity Type	Effectivity Qualifier	Effectivity Range
0000000012	B (Design)	handle_ez.prt	557-00-415	Date	Exact	8/1/2007 -

(0 objects selected)

* Indicates required fields.

View Effectivity

Planned Effectivity (1 object)

Number	Version	Name	Effectivity Context	Effectivity Type	Effectivity Qualifier	Effectivity Range
0000000012	B (Design)	handle_ez.prt	557-00-415	Date	Exact	8/1/2007 -

* Indicates required fields.

Setting Effectivity

Objects that are effectivity managed include parts and end items. Effectivity is the planned date, lot, serial number, manufacturing sequence number, or block number at which old part versions are replaced with new part versions in production. The allowable types are determined by the default trace code recorded on a traceable part. You can make changes to planned effectivity settings by using a change notice or a change task. When the change notice has been approved, the planned effectivities get copied over as actual effectivities on the given object.

The effectivity type is set to Date prior to setting effectivity for the first time. The choices for effectivity type depend on the selection of the effectivity context (such as an end item). They include the following:

- If you have not selected a part as a context, or if the default trace code for the context part is undefined, the effectivity type is set to Date.
- If the default trace code of the part is Serial Number, you are able to set a Serial Number, MSN, or Date effectivity type.
- If the default trace code of the context is Lot or Lot/Serial, you are able to set a Lot, Block, or Date effectivity type.

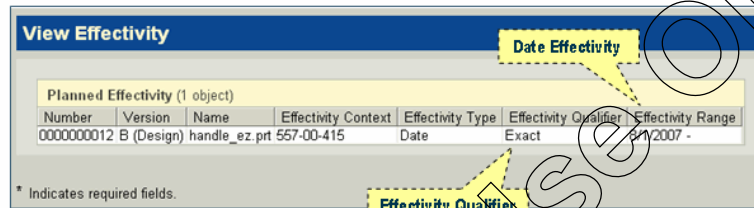
Syntax for Specifying Effectivity

Date Effectivity

- mm/dd/yyyy
- mm/dd/yyyy, mm/dd/yyyy
- mm/dd/yyyy – mm/dd/yyyy
- Mm/dd/yyyy –

Serial Number or Lot Number Effectivity

- n
- n, n
- n – n
- n –



View Effectivity

Planned Effectivity (1 object)

Number	Version	Name	Effectivity Context	Effectivity Type	Effectivity Qualifier	Effectivity Range
0000000012	B (Design)	handle_ez.prt	557-00-415	Date	Exact	8/1/2007 -

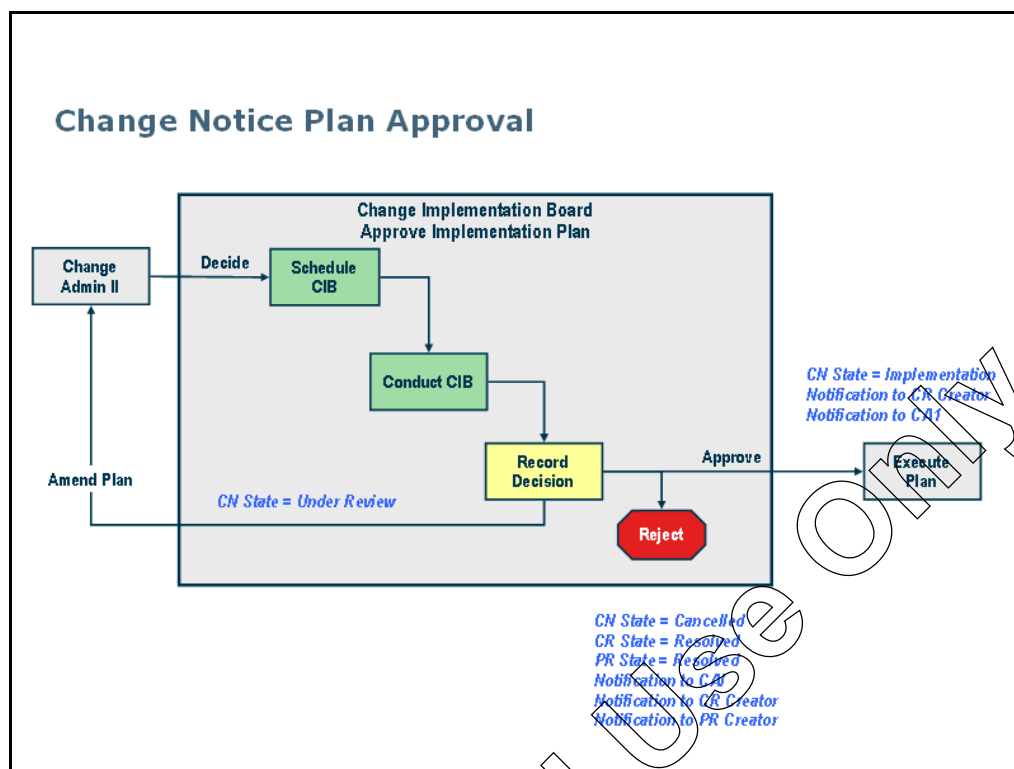
* Indicates required fields.

Syntax for Specifying Effectivity

Effectivity values can be specified as single dates or numbers, or ranges of dates and numbers. Multiple values can be set by separating the values with commas. To indicate a range, use a dash between the starting and ending values.

For example, you could set Part 123, version B to be effective on Product ABC, serial numbers 1 through 5, and 9 through 11. For further information on the syntax of setting multiple effectivity values, see the listed syntax examples.

The effectivity qualifier provides more qualifying information for the effectivity statement. It has no other effect in setting effectivity or using an effectivity configuration specification to sort a product structure. Your site has the ability to add more choices by using the Effectivity Qualifier drop-down menu. The default values are blank, Exact, or No Later Than.



Change Notice Plan Approval

If the change is on the Full track, then the implementation plan must be approved by the Change Implementation Board before it can be implemented.

The Change Administrator II is the chairperson for the Change Implementation Board. It is his or her job to schedule the meeting, set the agenda, and conduct the review. The Change Implementation Board is comprised of a cross functional team of people who are empowered to review the change notice and determine whether the plan is complete.

The change notices are rejected, approved, or sent back to the Change Administrator II for further planning. If rework is required, the change notice remains in Under Review state until it returns to the Change Implementation Board. If the change notice is accepted, it moves to the execution phase. The change notice may also be rejected if for any reason the company decides the change should not proceed. If the change notice is rejected, its state is set to Cancelled. The change request and any problem reports are also set to a "Resolved" state.

Lab Exercises

Exercise 1: Creating Change Notices

Objectives

After successfully completing this exercise, you will know how to:

- Create change notices.

Scenario

In this exercise, you take the role of Bob Taylor, the Change Administrator II. As Bob, you now create a change notice to implement the approved changes identified in the change request. As part of creating the change notice you also create an implementation plan.

You create two change tasks as part of the implementation plan:

- John Evans will be assigned a task to modify the lower bag holder part.
- Erica Hill will be assigned a task to modify the golf cart documentation related to the lower bag holder part.





Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:


- Log on to PDMLink as Bob Taylor (btaylor/ptc).
- Start on the Overview page of the Home major tab.



Task 1. Create a change notice and assign a task to John Evans.

1. In the assignments table, click the **Create Change Notice** task related to the Bag Holder Design Improvement change request.
2. The task's details page opens. Click the lower part of the scroll bar to scroll down to view the change request information.
3. Click the change request's **Actions** drop-down menu to view available options.
4. Select **New Change Notice** to create a change notice.
5. In the Define Object step window, select the **Propagate information from the change request** check box.
6. Click the **Next** button to go to the next step window.
7. Accept the defaults for all attributes and click **Next** to go to the next step window.
8. In the Implementation Plan table, click the **Actions** drop-down menu next to the Modify affected objects task.
9. Select **Edit Change Task** to modify the automatically generated change task.
10. In the Attributes table, select the existing Name value field by clicking and dragging in the Name field.
11. Press the **Delete** key to delete the existing name.
12. Type **Modify Lower Bag Holder** in the Name field.
13. Click the **Find...** button next to the Assignee button to launch the user search page.
14. User search page opens. Type **John Evans** in the Full Name field.
15. Click the **Search** button to launch the search.
16. In the Search Results table, select the **John Evans** option.
17. Click **OK** to set the new assignee and return to the Edit Change Task page.
18. Click the **Find...** button next to the Reviewer button to launch the user search page.

19. User search page opens. Type **Sandy Miller** in the Full Name field.
20. Click the **Search** button to launch the search.
21. In the Search Results table, select the **Sandy Miller** option.
22. Click **OK** to set the new assignee and return to the Edit Change Task page.
23. Select the text inside the Description field by clicking and dragging inside the field.
24. Press the **Delete** key to delete the existing description.
25. Type **Increase the bag holder size according to the specs.** in the Description field.
26. Click the **Next** button to go to the next step window.
27. In the Affected Objects table, select the check box for the lower_bag_holder_ez.prt CAD document.
28. Select the check box for the lower_bag_holder_ez.prt Windchill part.
29. In the Affected Objects table toolbar, click the **New Revision** icon  to launch the New Revision page. objects.
30. On the New Revision page, click the **OK** button to create new revisions for both objects.
31. On the Affected Objects step window, click the lower part of the scroll bar to scroll down.
32. In the Resulting Objects table, select the check box for the lower_bag_holder_ez.prt Windchill part (Do not select the CAD document).
33. Click the **Set effectivity** icon  in the Resulting Objects table toolbar to open the effectivity page.
34. The Set Effectivity page opens. Select the check box for the lower_bag_holder_ez.prt part.
35. Click the **Set effectivity context** icon  to specify the effectivity context.
36. On the Effectivity Context page, click the **Search** button to search for the effectivity context.
37. In the Search Results table, select the **EZ_Fold_Golf_Cart** option.
38. Click **OK** to save the information and return to the Set Effectivity page.
39. Click the **Effectivity Qualifier** drop-down menu to view available options.
40. Select **Exact** to set the exact date effectivity.
41. Type the first day of the next month as the date followed by a dash in the Effectivity Range field (Example: 08/01/2009-).
42. Click **OK** on the Set Effectivity page to save the information.
43. Click the upper part of the scroll bar to scroll up and view the affected objects.
44. In the Affected Objects table, select the check box for the lower_bag_holder_ez.prt Windchill part.
45. Click the **Set the disposition** icon  to set the disposition of the existing lower bag holder version A part.
46. In the Set Disposition dialog box, expand the **Disposition** drop-down menu to view other options.
47. Select **Rework** to indicate that the existing inventory will be reworked.
48. Click **OK** to close the Disposition dialog box.
49. Click **Finish** to complete the change task modifications and return to the New Change Notice window.

Task 2. Create another change task and assign it to Erica Hill.

1. In the Implementation Plan table, click the **New Change Task** icon  to create a second change task within the change notice.
2. Type **Update EZ Fold Golf Cart Documentation** in the Name field.
3. Click the **Find** button next to the Assignee button to launch the user search page.

4. User search page opens. Type **Erica Hill** in the Full Name field.
5. Click the **Search** button to launch the search.
6. In the Search Results table, select the **Erica Hill** option.
7. Click **OK** to set the new assignee and return to the New Change Task page.
8. Click the **Find** button next to the Reviewer button to launch the user search page.
9. User search page opens. Type **Sandy Miller** in the Full Name field.
10. Click the **Search** button to launch the search.
11. In the Search Results table, select the **Sandy Miller** option.
12. Click **OK** to set the new reviewer and return to the New Change Task page.
13. Type **Update Golf Cart Owner's Manual to reflect the bag holder changes.** in the Description field.
14. Click the **Next** button to go to the next step window.
15. In the Affected Objects table, click the **Add affected objects** icon  to add a document.
16. Type **EZ Fold*** in the Name field to launch a wild card search for the document.
17. Click the **Search** button to initiate the search.
18. In the Search Results table, select the check box for the EZ Fold Golf Cart Owner's Manual.
19. Click **OK** to save the information and return to the New Change Task page.
20. In the Affected Objects table, select the check box for the EZ Fold Golf Cart Owner's Manual.
21. Click the **New Revision** icon  to create the new revision.
22. On the New Revision page, click **OK** to save the information and return to the New Change Task step window.
23. On the New Change Task step window, click **Finish** to complete the task creation.
24. On the New Change Notice step window, click the **Next** button to go to the Set Attachments step window.
25. Click the **Next** button to view the associated change requests.
26. Click the **Finish** button to create the change notice.
27. In the Confirmation dialog box, click the **Submit Now** button to automatically submit the change notice.
28. Click **OK** in the confirmation dialog box.
29. We are returned to the Create Change Notice Task. Type **Added two change tasks** in the Comments field.
30. Click the **Complete Task** button to complete the Create Change Notice task.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Describe the capabilities of change notices.
- Create change notices and implementation plans.

For Educational Use Only

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. Can you import the information from a change request to a change notice?
 - A - Yes. This is the default behavior.
 - B - No. You must fill out the change notice form manually.
 - C - Yes. The *Propagate information from the change request* check box copies information from the change request to the change notice.
 - D - No. Only an administrator can copy information.

2. The change notice requires a minimum of how many change tasks for the change notice to be completed?
 - A - One.
 - B - It depends on the number of associated problem reports.
 - C - It depends on the number of associated change requests.
 - D - None.

3. When assigning an Assignee role to a change notice task, the Change Administrator II is selecting...
 - A - the person who will review the implemented changes.
 - B - the person who will create the change task.
 - C - the person who will implement the changes.
 - D - the person who will assign someone to implement the changes.

For Educational Use Only

Implementing Changes

Introduction

In this module, you explore various assignments that complete the change process. Once the decision has been made to execute the implementation plan, the next step in the process is for data creators and users to modify and validate parts and documents that are undergoing change.

Objectives

After completing this module, you will be able to:

- Implement changes.
- Review implementation tasks.
- Audit change notices.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

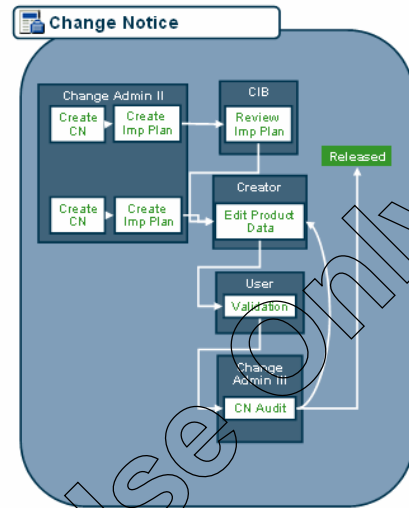
You may use the space below to take your own notes.

For Educational Use Only

Change Notice Process: The Diagram

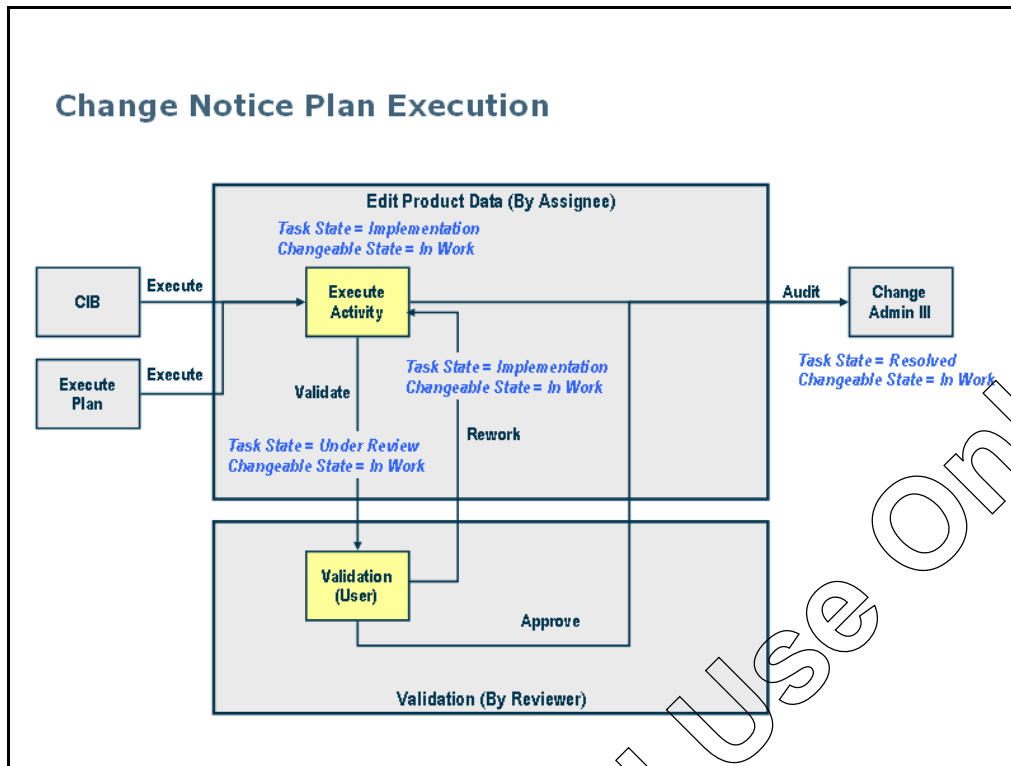
What Happens Next?

- Change Notice
 - Notice Plan Execution
 - Change Notice Audit



Change Notice Process: The Diagram

During the final phase, the assigned tasks are completed and changes are implemented. You can then audit these changes, and if appropriate, release the changed objects.



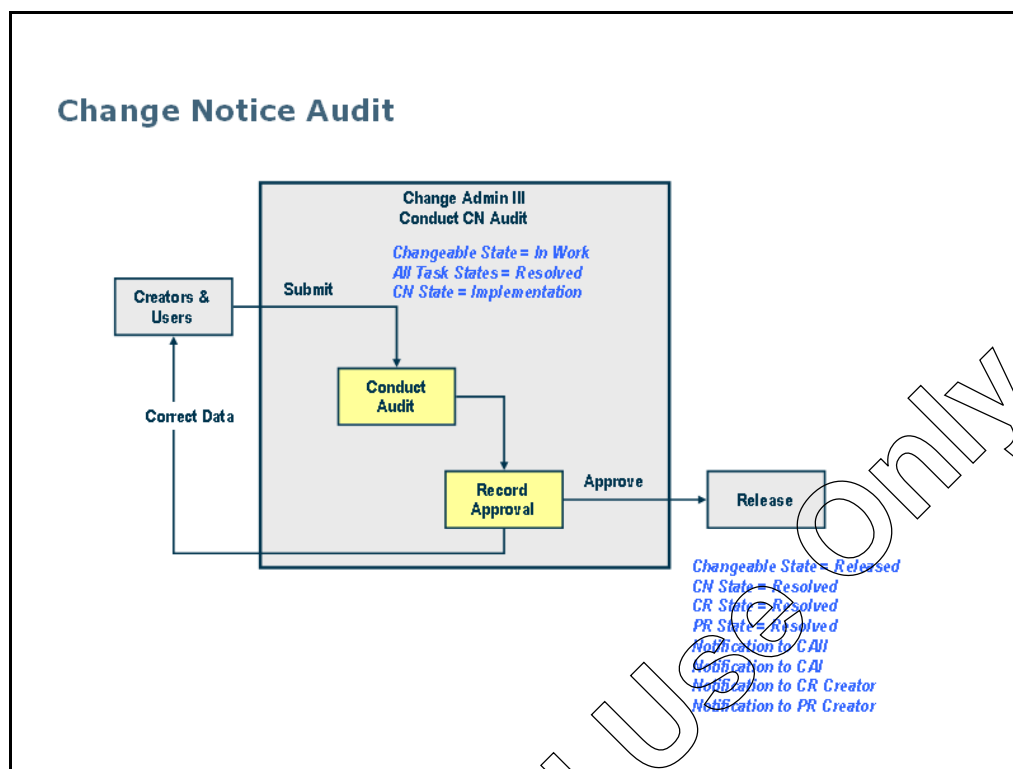
Change Notice Plan Execution

Whether the plan was routed through the Change Implementation Board in the full track, or just delivered to the implementers, the next step is to implement the plan. The process pictured in this diagram is performed by every individual implementer and reviewer assigned to a line item task in the change notice's implementation plan. The assignee edits the product data making the necessary modifications per the instructions from the change notice.

The Reviewer then evaluates the changes verifying that they are "clear, concise, and valid." If the modifications are not acceptable, they are routed back to the assignee for further update. If they are acceptable, the Reviewer approves the change and it waits for change notice audit. During this sequence of actions the changeable data, such as parts and documents, remains in an "In Work" state.

The final step in the process prior to release is an audit by Change Administrator III (CAIII).

This module examines the audit step in more detail.



Change Notice Audit

This flow diagram shows the final human performed step in the change process. In this step, the Change Administrator III examines all of the documents and Bill of Material changes implemented by the change notice tasks. Each part version will also have a proper effectivity.

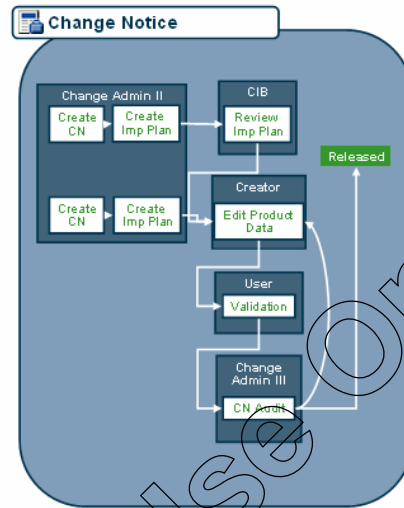
The Change Administrator III then records his or her decision.

Once the audit is successfully completed, each changed object is promoted to "Released" state. The change notice, change request(s), and problem report(s) are also promoted to the "Resolved" state. If the audit does not pass, the failed elements are sent back for correction to the appropriate implementers.

Resolving the Process

After the Audit

- Associated object states change
 - CN and changed parts are Released
 - Problem Reports are Resolved
- Notifications are sent to:
 - Change Administrator I
 - Change Administrator II
 - CR creators
 - PR creators



Resolving the Process

Once the change notice audit is complete, a series of workflow process events route all associated objects to completion. When the Change Administrator III completes the audit task, the change notice and all of the changed parts and documents are promoted to a “Released” state. The last step in the change request workflow changes the state of the problem report(s) to “Resolved.”

Notifications are then sent to the Change Administrator I, Change Administrator II, and the change request and problem report creators.

That completes the entire change process.

Lab Exercises

Exercise 1: Completing the First Implementation Task

Objectives

After successfully completing this exercise, you will know how to:

- Complete the implementation task assigned through the Change Notice.

Scenario

In this exercise, as John, you complete the implementation task that was assigned to you. This includes checking out version B of the lower bag holder CAD document using Pro/ENGINEER and making modifications.

Initial Conditions




To successfully complete this exercise, you must establish the following initial conditions:




- Open a Pro/ENGINEER session and log on as John Evans (jevans/ptc).

Task 1. Review the change notice task details.

1. In the Folder Navigator window of Pro/ENGINEER, select **PTC Sports** to display the PDMLink home page.
2. Select the **Home** major tab to view the assignments.
3. Click the **Complete Change Notice Task** link related to the Modify Lower Bag Holder Change Task.
4. Review the change notice task instructions. Click the lower part of the scroll bar to scroll down to view the attached change task.

Task 2. Check out the lower bag holder CAD document and make modifications.

1. In the Pro/ENGINEER Folder Navigator pane, expand the **PTC Sports** node to view the list of folders.
2. Select **Workspaces** folder to view to list of workspaces.
3. In the browser window, click the **Activate Workspace** icon  next to the Bag Holder workspace to activate the workspace.
4. In the Change Workspace dialog box, click **Yes** to confirm the change.
5. Click the **Open an existing object** icon  from the Pro/ENGINEER main toolbar.
6. Browse to PTC Sports\Products\EZ Fold Golf Cart\CAD Models folder and select **lower_support_ez.asm** CAD document.
7. Click **Open** to open the assembly in Pro/ENGINEER.
8. Ensure that the display of Datum planes, Datum axes, Datum points, and Coordinate systems is turned off. In the Model Tree pane, right-click the LOWER_BAG HOLDER_EZ.PRT model.
9. Select **Open** to open the model in a new window.
10. In the Pro/ENGINEER toolbar, click the **Saved view list** icon  to view available options.
11. Select **BOTTOM** to display in the model using the BOTTOM view.
12. In the Model Tree pane, right-click **protrusion id 1775**.
13. Select **Edit** to edit the model.
14. Double-click the 45 degree angle dimension on the right side of the model.
15. In the Conflicts dialog box, click the **Ok** button to check out the object.

16. Type **30** in the dimension field to change the value.
17. Press ENTER to set the new dimension.
18. In the Pro/ENGINEER toolbar, click the **Regenerate Model** icon  to regenerate the model.
19. Click the **Save** icon  in the Pro/ENGINEER toolbar to save the components to the workspace.
20. Click **OK** to confirm the save operation.
21. Select the **Folder Browser** tab in the left pane to access the workspace.
22. Select **Bag Holder on PTC Sports** workspace to view contents.
23. Select the LOWER_BAG_HOLDER_EZ.PRT check box.
24. Click the **Check In** icon  to check in CAD document.
25. On the Check In page, click the lower part of the scroll bar to scroll down to reach the bottom of the page.
26. Click **Finish** to complete the check in process.

Task 3. Complete the change task.

1. Select the **Home** major tab to view the user-specific information.
2. Select the **Overview** minor tab to view the assignments.
3. Click the **Complete Change Notice Task** link related to the Modify Bag Holder activity.
4. Click the lower part of the scroll bar to scroll down to reach the Comments field.
5. Type **Updated lower bag holder version B in the lower support assembly** in the Comments field.
6. Click the **Complete Task** button to complete the assignment.

This completes the exercise.

Exercise 2: Completing the Second Implementation Task

Objectives

After successfully completing this exercise, you will be know how to:

- Complete the second implementation task assigned through the change notice.

Scenario




In this exercise, as Erica, you complete the second implementation task and update the golf cart documentation.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as Erica Hill (ehill/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Review the change notice task details.

1. Click the **Complete Change Notice Task** link related to the golf cart documentation task.
2. Review the change notice task instructions. Click the link for the Change Task next to the Subject label to open the task.
3. In the Resulting Objects table, click the **View information** icon  next to the version B of the document to open the details page.
4. Click the **Actions** drop-down menu in the top-left corner of the document details page.
5. Select **Check Out and Download** to check out the document and download the content file.
6. In the Choose File Operation dialog box, ensure that the Open File option is selected. Click the **OK** button to open the file.
7. Select the golf cart image on the first page.
8. Press the **Delete** key to delete the image.
9. Click the Microsoft Word's **Insert** menu to insert a new image.
10. Select **Picture**.
11. Select **From File...**
12. Browse to D:\Student\Intro_to_PDMLink_9.0\EZ Fold Golf Cart\Documents folder and select the **ez fold golf cart cover image.jpg** file.
13. Click the **Insert** button to insert the new image.
14. Click the **Save** icon  to save the document.
15. Click the **Windows Close** button  to close the Microsoft Word application and return to the details page of the document.
16. Click the **Actions** drop-down menu in the top-left corner to view the options.
17. Select **Check In** to check in the document.
18. In the Check In dialog box, select the **Upload selected primary file** option to replace the existing file.
19. In the Check In dialog box, click the lower part of the scroll bar to scroll down and reach the Comments section.
20. In the Check In dialog box, type **Replaced golf cart image** in the Comments field.
21. Click the **OK** button at the bottom of the Check In dialog box to complete the check in process.
22. Select the **Home** major tab to return to the assignment list.

23. Click the **Complete Change Notice Task** link related to the golf cart documentation task to open the task details.
24. Type **Updated golf cart owner's manual version B** in the Comments field.
25. Click the **Complete Task** button to complete the assignment.

This completes the exercise.

For Educational Use Only

Exercise 3: Reviewing Change Notice Tasks

Objectives

After successfully completing this exercise, you will know how to:

- Review Change Notice Tasks.

Scenario



In this exercise, as Sandy Miller, you evaluate the two completed change tasks and then submit them for an audit by the Change Administrator III.

Initial Conditions




To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as Sandy Miller (smiller/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Review the first completed implementation task.

1. Click the **Review Change Notice Task** link related to the Modify Lower Bag Holder task to open the assignment.
2. Click the link for the Change Task next to the Subject label to open the change task.
3. Click the lower part of inner scroll bar to scroll down and view the Resulting Objects table.
4. In the Resulting Objects table at the bottom of the page, click the **View information** icon  next to the LOWER_BAG HOLDER_EZ.PRT.
5. Click the ProductView thumbnail to open the CAD document in ProductView.
6. Review the model. Click the ProductView icon  in the top-left corner to access the menu.
7. Select **Exit** to close the ProductView window.
8. Select the **Home** major tab to return to the assignments list.
9. Click the **Review Change Notice Task** link related to the Modify Lower Bag Holder task to open the assignment.
10. Type **Verified bag holder changes** in the Comments field.
11. Select the **Complete** option just below the Comments field.
12. Click the **Complete Task** button to complete the assignment.

Task 2. Review the second completed implementation task.

1. Click the **Review Change Notice Task** link related to the Update EZ Fold Golf Cart Documentation task to open the assignment.
2. Click the link for the Change Task next to the Subject label.
3. In the Resulting Objects table at the bottom of the page, click the **View information** icon  next to the EZ Fold Golf Cart Owner's Manual to open the details page.
4. Click the Microsoft Word icon  next to the Primary Content attribute to open the content.
5. In the File Download dialog box, click the **Open** button to open the file.
6. Review the file. Click the **Windows Close** button  to close the Microsoft Word application.
7. Select the **Home** major tab to return to the assignments list.
8. Click the **Review Change Notice Task** link related to the Update EZ Fold Golf Cart Documentation task to open the assignment.

9. Type **Verified golf cart owner's manual changes** in the Comment field.
10. Select the **Complete** option just below the Comments field.
11. Click the **Complete Task** button to complete the assignment.

This completes the exercise.

For Educational Use Only

Exercise 4: Auditing Change Notices

Objectives

After successfully completing this exercise, you will know how to:

- Audit the change notice tasks and complete the change process.

Scenario

In this exercise, you take the role of Peter Davis, the Change Administrator III. As the Change Administrator III, you audit the changes and conclude the process.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as Peter Davis (pdavis/ptc).
- Start on the Overview page of the Home major tab.

Task 1. Audit the Change Notice.

1. Click the **Audit Change Notice** link to open the task.
2. Type **All changes are performed according to specifications** in the Comments field.
3. Select the **Complete** option just below the Comments field.
4. Click the **Complete Task** button to complete the assignment.

Task 2. Verify the results.

1. In the global search field on the top-right corner, type **lower_bag_holder_ez.prt**.
2. Press ENTER to launch the search.
3. Observe the Search results table. Both the CAD document and the part are released.

This completes the exercise.

Summary

After successfully completing this module, you should know how to:

- Implement changes.
- Review implementation tasks.
- Audit change notices.

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. Once the change notice audit is successfully completed, each modified object is promoted to what state?
 - A - Resolved
 - B - Released
 - C - Production
 - D - Completed
2. You have received an assignment Complete Change Notice Task. You are most likely fulfilling what role?
 - A - Assignee
 - B - Reviewer
 - C - Submitter
 - D - Approver
3. The Change Administrator III is responsible for...
 - A - analyzing problem reports.
 - B - creating implementation plans.
 - C - auditing the completed implementation plan and change notice.
 - D - submitting the change notice.

For Educational Use Only

Communication and Collaboration

Introduction

In this module, you examine a few specific tools that facilitate communication and collaboration in Windchill PDMLink 9.0.

Objectives

After completing this module, you will be able to:

- Explain PDMLink's communication and collaboration capabilities.
- Discuss objects in forums.
- Manage and schedule meetings.

Lecture Notes

Your instructor will deliver the lecture using slides. For your benefit, there are lecture notes shown below each slide in the following section.

You may use the space below to take your own notes.

For Educational Use Only

Introduction to Communication Mechanisms

Subscriptions and Notifications

- ◉ Automatically send e-mails about events.

E-mail

- ◉ Communicate with team members.
- ◉ Send a page to team members.

Discussion Forums

- ◉ Discuss topics through postings.

Meetings

- ◉ Schedule and hold meetings.
- ◉ Document meetings.



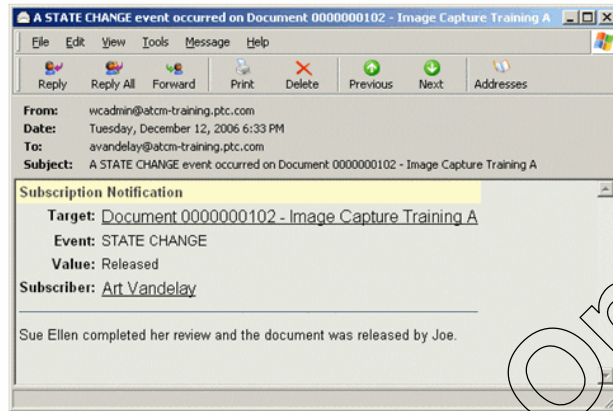
Introduction to Communication Mechanisms

PDMLink is a communication and collaboration tool. Almost every feature enables you to share information and communicate that information to others. The subscription and notification tools automatically notify users about events in PDMLink. Other tools help you reach other team members through e-mail, and can even provide links to PDMLink pages to facilitate discussion. The discussion forum feature is another tool that helps you communicate about a product or object. Similar to bulletin boards, discussion forums enable you to post topics, enabling anyone on the team to reply. Lastly, PDMLink includes meeting tools that help you schedule and hold meetings, and enables you to document them once they are complete.

Viewing Notifications

Notifications

- Subscriptions
- Missed deadlines
- Tasks
- Discussions



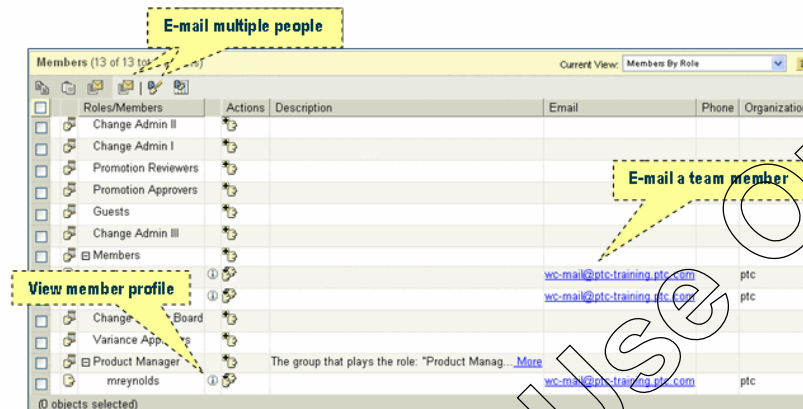
Viewing Notifications

Notifications are e-mails that inform you about events in PDMLink. Many notifications are sent by means of subscriptions, but you can also be notified about many other things, including missed deadlines, tasks distributed by workflows, and discussion forum responses.

E-mailing Team Members

Product or Library Team page enables you to:

- E-mail a Team Member
- E-mail Multiple People
- View Member Profiles



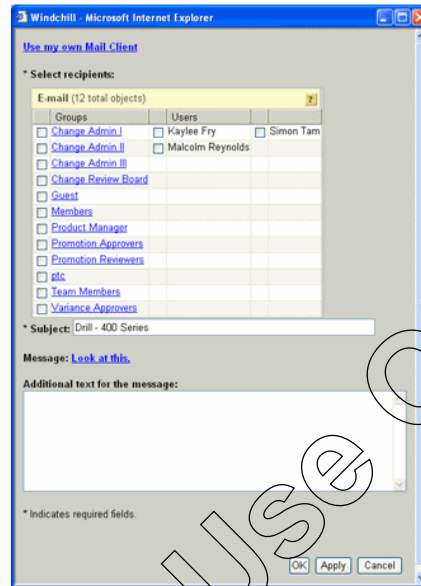
E-mailing Team Members

You can easily e-mail a team member from a product or library's Team page. To e-mail a team member directly, select the team member in the list, and click the E-mail Selected Members icon at the top of the table. Alternatively, you can click the user's e-mail link in the table. From the Team page, you are also able to e-mail multiple people by selecting multiple Team Members, or a Role with multiple users, and clicking the E-mail Selected Members icon. The E-mail Entire Team icon enables you to e-mail the entire team. When browsing a context's team, you can also click a Team Member's View information icon to view his or her profile.

E-mailing a Page

E-mailing a Page

- E-mail a Page to Team Members
 - Groups
 - Users
- Use Your Own Mail Client



E-mailing a Page

Another method for communicating information to other team members is to e-mail a PDMLink page. To e-mail a page, click the E-mail Page link that appears above the global search field at the top of every page. Clicking the link opens a window that enables you to select the groups or users who will receive the currently active page. You can also supply an e-mail subject and body text. Once the notification is complete, an e-mail with a link to the PDMLink page is sent to the recipients you selected.



The page also provides you with the option of using your own e-mail client to configure the message.

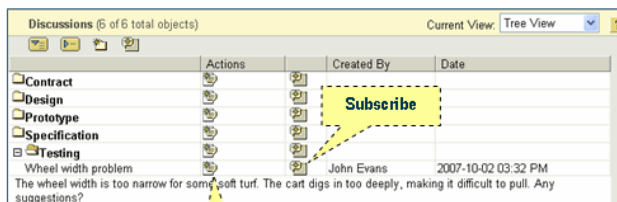
Holding Discussions

Discussion Forums

- Context Forum
- Standard Forum

In Discussion Forums

- Create a topic
 - Add Files
 - Add URLs
- Create a posting
 - Add Files
 - Add URLs
- Reply to existing postings
 - Add Files
 - Add URLs
- Subscribe to topics and postings

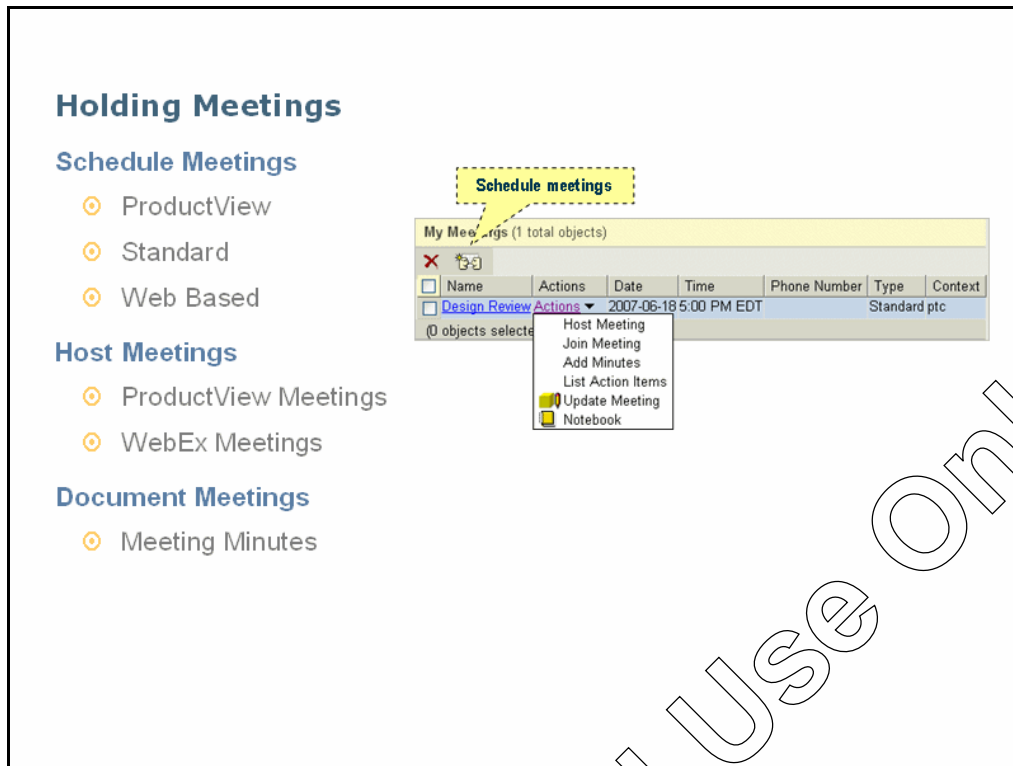


Holding Discussions

Discussion forums are message boards that enable you to collaborate with team members. There are two different types of discussion forums:

- The context forum enables you to discuss topics that affect the entire Product or Library. Context Forums are accessed from the Discussions link on the Product or Library tab.
- The standard forum enables you to discuss a specific object. You can access standard discussion forums from the details pages of documents, CAD documents, and from task pages.

You can do the following in a discussion forum: create a new topic for discussion; add a posting to a topic, which can include attached files, or links to Web pages; reply to an existing posting and attach files and links if needed; and lastly, subscribe to topics or postings so you will be sent replies by e-mail.



Holding Meetings

For synchronous, simultaneous communication, PDMLink provides the capability to create and manage meetings. PDMLink enables you to create three types of meetings: ProductView Meetings, Standard Meetings, and Web Based Meetings.

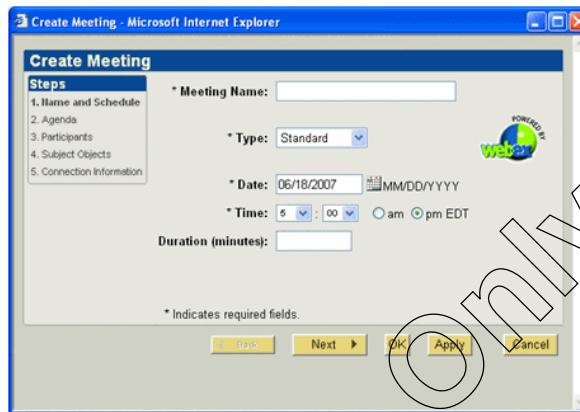
- You can use ProductView meetings to hold a collaborative interactive session in ProductView. ProductView collaborative sessions are conducted through ProductView Standard, which every participant must have installed in order to join the collaborative session. Once connected, everyone in the meeting can be given access to markup the object in real-time.
- You can use Standard meetings to schedule a meeting time, establish an agenda, and invite participants. The main purposes for scheduling a meeting is to invite the participants and distribute the agenda. You can also document the results in PDMLink after the meeting.
- Finally, you can use Web Ex meetings to do everything a standard meeting can do. In addition, you can hold live, collaborative and interactive meetings on the Internet, or within your Intranet.

In addition to being able to hold and run meetings, PDMLink enables you to document meetings with meeting minutes. Once a meeting is completed, the meeting creator can add meeting minutes to document the decisions that were made in the meeting. By storing these minutes with the meeting, you share the information with everyone involved, and archive it within the PDMLink system.

Scheduling Meetings

Create Meeting Wizard

1. Name and Schedule
2. Agenda
3. Participants
4. Subject Objects
5. Connection Information



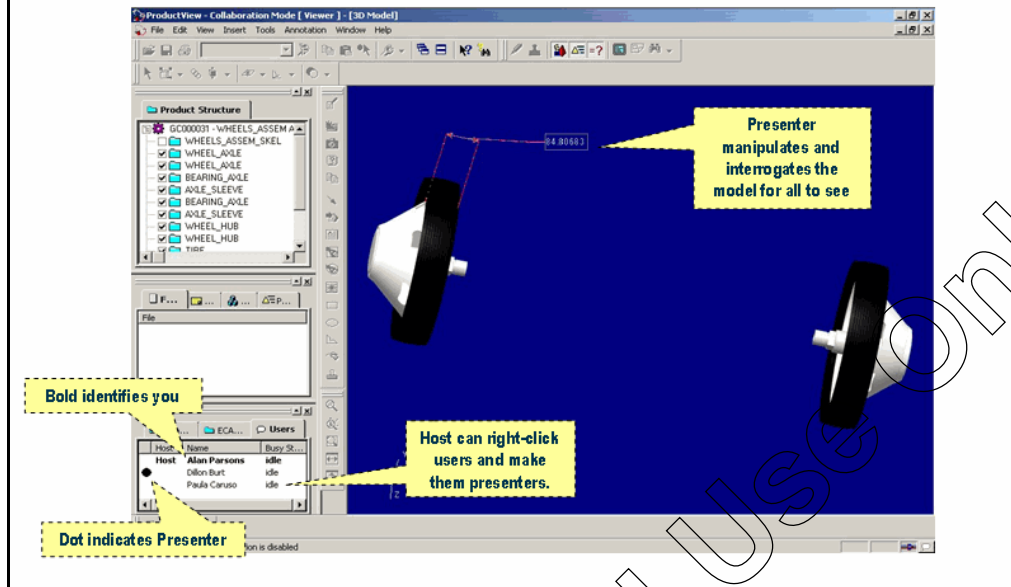
Scheduling Meetings

You create a meeting by selecting the New Meeting icon from the My Meetings table. This opens the New Meeting Wizard, which divides the creation of a meeting into five steps: Name and Schedule, Agenda, Participants, Subject Objects, and Connection Information.

- In the Name and Schedule step window, you define the name, date, time, and duration of the meeting. Also in this step window, you select the meeting type: ProductView, Standard, or Web Ex.
- In the Agenda step window, you enter your meeting agenda. The Agenda text box supports HTML tags, which enables you to bold text and create ordered and unordered lists.
- In the Participants step window, you invite participants to the meeting. You use a search tool to locate and add users or groups of users.
- If the meeting involves PDMLink CAD documents or documents, the Subject Objects step enables you to link those objects when setting up the meeting.
- In the Connection Information step window, you supply additional connection information. This connection information enables participants to locate or connect to your meeting.

Hosting Meetings

Hosting ProductView Meetings



Hosting Meetings

When you host standard or Web Ex meetings, you can use the capabilities of your teleconferencing system and/or the capabilities of Web Ex to exchange information. When you host a ProductView meeting, you use the ProductView Standard client to view, interrogate, and collaborate on design information using the viewables published in PDMLink. Once the meeting is started, those who were invited can sign in as viewers. All meeting participants are listed in the Users tab. As the host, you can modify the viewable or pass hosting responsibility on to another participant and enable them to mark it up.

Lab Exercises

Exercise 1: Discussing Objects

Objectives

After successfully completing this exercise, you will know how to:

- Create a discussion topic and posting.
- E-mail a page.
- Reply to a discussion posting.

Scenario

Sandy Miller has received an Approve Promotion Request task for the upper support assembly that was reassigned to her from Bob Taylor. Sandy will review the reason for the task reassignment and then review the upper support assembly as directed by the task.

After the review, Sandy is concerned about the handle component chosen by John Evans for the design. She will use a discussion forum to post her concern. John will review the concern and post a response.



In this exercise, you take the role of Sandy Miller and John Evans as they participate in a discussion using discussion forums.

Initial Conditions


To successfully complete this exercise, you must establish the following initial conditions:



- Open two Web browser sessions; one logged on to PDMLink as Sandy Miller (smiller/ptc), and one logged on to PDMLink as John Evans (jevans/ptc).
- Each Web Browser session should start on the user's Overview page of the Home major tab.
- Arrange the windows with Sandy's session on top and John's session below Sandy's.

Task 1. Review the reason for the Approve Promotion Request task reassignment and, as directed by the task, review the upper support assembly design.


1. In the Assignments table, click the **Approve Promotion Request** link for the Upper Support assembly to open the task page.
2. Click the lower part of the scroll bar to scroll down.
3. Review the Reason for Reassignment in the Reassignment History table. In the Promotion Objects table, click the **View information** icon  for the upper_support_sl.asm CAD document.
4. On the Upper Support assembly details page, click the thumbnail to open the viewable in ProductView.
5. In the left pane, double-click **Model** to open the model in the viewing area.
6. Click the ProductView icon  in the top-left corner.
7. Select **Exit** to close the ProductView window and return the details page.

Task 2. Create a topic and posting in the upper_support_sl.asm CAD document's discussion forum and subscribe to the topic.




1. On the Upper Support assembly details page, click the **Collaboration** drop-down menu.
2. Select **Discussions**.
3. In the Discussions table, click the **New Topic** icon  to create a new discussion topic.

4. In the New Topic window, type **Review Comments** in the Topic Name field.
5. Click the **OK** button to create the topic.
6. Click the **New Posting** icon  for the Review Comments topic to create a posting.
7. Type **Handle Grip Concern** in the Subject field.
8. Type **I am concerned about the handle cut that has sharp edges.** in the Message field.
9. Click the **Finish** button to create the posting.
10. Click the **Subscribe to Posting** icon  for the Handle Grip Concern posting.

Task 3. Use the E-mail Page feature to notify John of a discussion forum posting.

1. In the upper-right corner of the page, click the **E-mail Page** link to open the E-mail Page window.
2. Select the check box to the left of **Evans, John**.
3. Type **I have added a comment concerning the Upper Support assembly design.** in the Additional text for the message field.
4. Click the **OK** button at the bottom to send the e-mail.
5. Click the **Windows Close** button  to close Sandy Miller's Internet Explorer window.

Task 4. Reply to a discussion forum posting.

1. On John's Internet Explorer window, select the **Product** major tab to view the Products page.
2. Click the **Products** drop-down menu just below the Home major tab to view all products.
3. Select **Super Lite Golf Cart** to open the product.
4. Ensure that the Folders page is open. In the left pane, select the **CAD Models** folder to view the folder contents.
5. In the Folder Contents table, click the lower part of the scroll bar to scroll down and view the upper support assembly CAD document.
6. Click the **Discussions** icon  for the upper_support_sl.asm CAD document.
7. In the Discussions table, click the **Expand** icon  to the left of the Review Comments folder to view the posting.
8. Review Sandy's post. Click the **Reply to Posting** icon  for the Handle Grip Concern posting.
9. Type **I'll set up a meeting to review it with you further.** in the Message field.
10. Click the **Finish** button to create the posting.

This completes the exercise.

Exercise 2: Scheduling Meetings

Objectives

After successfully completing this exercise, you will know how to:

- Schedule meetings within PDMLink.

Scenario

Sandy has shared some concerns about the handle chosen by John for the Upper Support assembly. John has decided to call a meeting about this issue.



In this exercise, you take the role of John as he schedules a ProductView collaborative meeting about the upper support assembly.

Initial Conditions

To successfully complete this exercise, you must establish the following initial conditions:

- Log on to PDMLink as John Evans (jevans/ptc).
- Start on the Discussions page of the upper_support_sl.asm CAD document.

Task 1. Schedule a meeting.

1. Select the **Home** major tab to return to the Home Overview page.
2. Select the **Meetings** minor tab to view the Meetings page.
3. In the My Meetings table, click the **New Meeting** icon .
4. On the Name and Schedule step, type **Golf Cart Handle Review** in the Meeting Name field.
5. Click the **Type** drop-down menu.
6. Select **ProductView** from the Type drop-down menu.
7. Click the Calendar icon  next to the Date field.
8. Select tomorrow's date in the calendar.
9. Click the **hour** drop-down menu for Time.
10. Select **4** from the hour drop-down menu.
11. Type **60** in the Duration (minutes) field.
12. Click the **Next** button.
13. On the Agenda step, type **Review the Handle Grip issue of the Upper Support assembly.** in the Agenda field.
14. Click the **Next** button.
15. On the Participants step, ensure Users is selected for the Search and type **Sandy** in the criteria field (field to the left of the Search button).
16. Click the **Search** button to execute the search.
17. In the search results, select **Miller, Sandy**.
18. Click the **Add >>** button to add Sandy to the Meeting Participants field.
19. Click the **Next** button.
20. On the Subject Objects step, click the **Object Type** drop down menu (drop-down menu to the left of the Search field).
21. Select **CAD documents** from the Object Type drop-down menu.
22. Type **upper_support_sl.asm** in the criteria field (field to the left of the Search button).
23. Click the **Search** button to execute the search.
24. In the search results, select the **upper_support_sl.asm** CAD document.

25. Click the **Add >>** button to add the upper_support_sl.asm CAD document to the Meeting Subject Objects field.
26. Click the **Next** button.
27. On the Connection Information step, type **781-370-5000** in the Teleconference Phone Number text box.
28. Click the **Finish** button to create the meeting.
29. In the My Meetings table, click the **Golf Cart Handle Review** link to open the meeting's details.

This completes the exercise.

For Educational Use Only

Summary

After successfully completing this module, you should know how to:

- Explain PDMLink's communication and collaboration capabilities.
- Discuss objects in forums.
- Manage and schedule meetings.

For Educational Use Only

For Educational Use Only

Check Your Knowledge

The following questions are intended to reinforce critical concepts from this module. The results are for your information only and are not recorded. Select the answer that you feel is correct. The result will be provided either by the system (for Web-based training) or by your instructor (for live classroom training).

1. You can easily e-mail a team member from...
 - A - the Home major tab.
 - B - a product or a library's Team page.
 - C - the Team major tab.
 - D - all of the above.
2. Which of the following is NOT a valid PDMLink meeting?
 - A - Outlook Meeting
 - B - ProductView Meeting
 - C - Standard Meeting
 - D - Web-based Meeting
3. To host a ProductView meeting, you must use...
 - A - ProductView Lite.
 - B - ProductView Standard.
 - C - A or B.
 - D - none of the above.

For Educational Use Only

Copyright

Introduction to Windchill PDMLink 9.0

Copyright © 2008 Parametric Technology Corporation. All Rights Reserved.

User and training guides and related documentation from Parametric Technology Corporation and its subsidiary companies (collectively "PTC") is subject to the copyright laws of the United States and other countries and is provided under a license agreement that restricts copying, disclosure, and use of such documentation. PTC hereby grants to the licensed software user the right to make copies in printed form of this documentation if provided on software media, but only for internal/personal use and in accordance with the license agreement under which the applicable software is licensed. Any copy made shall include the PTC copyright notice and any other proprietary notice provided by PTC. Training materials may not be copied without the express written consent of PTC. This documentation may not be disclosed, transferred, modified, or reduced to any form, including electronic media, or transmitted or made publicly available by any means without the prior written consent of PTC and no authorization is granted to make copies for such purposes.

Information described herein is furnished for general information only, is subject to change without notice, and should not be construed as a warranty or commitment by PTC. PTC assumes no responsibility or liability for any errors or inaccuracies that may appear in this document. The software described in this document is provided under written license agreement, contains valuable trade secrets and proprietary information, and is protected by the copyright laws of the United States and other countries. It may not be copied or distributed in any form or medium, disclosed to third parties, or used in any manner not provided for in the software licenses agreement except with written prior approval from PTC. **UNAUTHORIZED USE OF SOFTWARE OR ITS DOCUMENTATION CAN RESULT IN CIVIL DAMAGES AND CRIMINAL PROSECUTION.**

For Important Copyright, Trademark, Patent, and Licensing Information:

For Windchill products, select About Windchill at the bottom of the product page. For InterComm products, on the Help main page, click the link for Copyright 2007. For other products, click Help > About on the main menu of the product.

Registered Trademarks of PTC

Advanced Surface Design, Advent, Arbortext, Behavioral Modeling CADDs, Calculation Management Suite, Computervision, CounterPart, Create Collaborate Control, Designate, EPD, EPD Connect, Epic Editor, Expert Machinist, Flexible Engineering, GRANITE, HARNESSDESIGN, Info*Engine, InPart, INTERCOMM, IsoCompose, IsoDraw, IsoView, ITEDO, Mathcad, Mathsoft, MECHANICA, Optegra, Parametric Technology, Parametric Technology Corporation, PartSpeak, PHOTORENDER, Pro/DESKTOP, Pro/E, Pro/ENGINEER, Pro/HELP, Pro/INTRALINK, Pro/MECHANICA, Pro/TOOLKIT, Product First, Product Development Means Business, Product Makes the Company, PTC, the PTC logo, PT/Products, Shaping Innovation, Simple Powerful Connected, StudyWorks, The Product Development Company, The Way to Product First, Wildfire, Windchill, Windchill DynamicDesignLink, Windchill PartsLink, and Windchill PDMLink.

Trademarks of PTC

3B2, 3DPAINT, Arbortext Editor, Arbortext Content Manager, Arbortext Contributor, Arbortext Companion for Word®, Arbortext Advanced Print Publisher – Desktop, Arbortext Advanced Print Publisher – Enterprise, Arbortext Publishing Engine, Arbortext Dynamic Link Manager, Arbortext Styler, Arbortext Architect, Arbortext Digital Media Publisher, Arbortext CSDB for S1000D®, Arbortext JETP Viewer for S1000D®, Arbortext Reviewer for S1000D®, Arbortext Authoring Interface for S1000D®, Arbortext Editor for S1000D®, Arbortext Publisher for S1000D®, Arbortext Provisioning Manager, Arbortext Provisioning Reviewer, Arbortext Provisioning Transaction Manager, Arbortext Parts Catalog Manager for S1000D®, Arbortext Learning Content Manager for S1000D®, Arbortext Learning Management System, Arbortext Reviewer for Eagle, Arbortext LSA Interface, Associative Topology Bus, AutobuildZ, AutoRound, CDRS, CV, CVact, CVaec, CVdesign, CV DORS, CVMAC, CVNC, CVToolmaker, Create Collaborate Control Communicate, EDACompare, EDAConduit, DataDoctor, DesignSuite, DIMENSION III, Distributed Services Manager, DIVISION, e/ENGINEER, eNC Explorer, Expert Framework, Expert MoldBase, Expert Toolmaker, FlexPDM, FlexPLM, Harmony, InterComm Expert, InterComm EDACompare, InterComm EDAConduit, individual innovation, collective creativity, ISSM, KDiP, Knowledge Discipline in Practice, Knowledge System Driver, ModelCHECK, MoldShop, NC Builder, PDS Workbench, POLYCAPP, ProductPoint, Pro/ANIMATE, Pro/ASSEMBLY, Pro/CABLING, Pro/CASTING, Pro/CDT, Pro/CMM, Pro/COLLABORATE, Pro/COMPOSITE, Pro/CONCEPT, Pro/CONVERT, Pro/DATA for PDGS, Pro/DESIGNER, Pro/DETAIL, Pro/DIAGRAM, Pro/DIEFACE, Pro/DRAW, Pro/ECAD, Pro/ENGINE, Pro/FEATURE, Pro/FEM POST, Pro/FICIENCY, Pro/FLY THROUGH, Pro/HARNESS, Pro/INTERFACE, Pro/LANGUAGE, Pro/LEGACY, Pro/LIBRARYACCESS, Pro/MESH, Pro/Model.View, Pro/MOLDESIGN, Pro/NC ADVANCED, Pro/NC CHECK, Pro/NC MILL, Pro/NC POST, Pro/NC SHEETMETAL, Pro/NC TURN, Pro/NC WEDM, Pro/NC Wire EDM, Pro/NETWORK ANIMATOR, Pro/NOTEBOOK, Pro/PDM, Pro/PHOTORENDER, Pro/PIPING, Pro/PLASTIC ADVISOR, Pro/PLOT, Pro/POWER DESIGN, Pro/PROCESS, Pro/REPORT, Pro/REVIEW, Pro/SCAN TOOLS, Pro/SHEETMETAL, Pro/SURFACE, Pro/TOOLMAKER, Pro/VERIFY, Pro/Web.Link, Pro/Web.Publish, Pro/WELDING, ProductView, PTC Precision, PTC DesignQuest, Routed Systems Designer, Shrinkwrap, Validation Manager, Warp, Windchill MPMLink, Windchill ProjectLink, and Windchill SupplyLink.

Patents of Parametric Technology Corporation or a Subsidiary

Registration numbers and issue dates follow. Additionally, equivalent patents may be issued or pending outside of the United States. Contact PTC for further information. 5,771,392/23-June-1998; (EP)0240557/02-October-1986; 5,423,023/05-June-1990; 4,956,771/11-September-1990; 5,058,000/15-October-1991; 5,140,321/18-August-1992;

5,297,053/22-March-1994; 5,428,772/27-June-1995; 5,469,538/21-Nov-1995; 5,469,538/21-November-1995; 5,506,950/09-April-1996; 4,310,614/30-April-1996; 5,513,316/30-April-1996; 5,526,475/11-June-1996; 5,561,747/01-October-1996; 5,526,475/6-November-1996; 5,557,176/09-November-1996; 5,680,523/21-October-1997; 5,689,711/18-November-1997; 5,771,392/23-June-1998; 5,838,331/17-November-1998; 5,844,555/01-Dec-1998; 5,844,555/1-December-1998; 5,850,535/15-December-1998; 4,310,615/21-December-1998; 4,310,614/22-April-1999; 6,275,866/14-Aug-2001; 6,275,866/14-August-2001; 6,308,144/23-October-2001; 6,447,223B1/10-Sept-2002; 6,473,673B1/29-October-2002; PCT 03/05061/13-Feb-2003; 6,545,671B1/08-April-2003; GB2354683B/04-June-2003; GB2354683B/04-June-2003; 6,580,428B1/17-June-2003; GB2354685B/18-June-2003; GB2354684B/02-July-2003; 6,608,623B1/19-August-2003; 6,608,623B1/19-August-2003; 6,625,607B1/23-September-2003; GB2354924/24-September-2003; GB2384125/15-October-2003; GB2354686/15-October-2003; GB2353376/05-November-2003; GB2354096/12-November-2003; GB2353115/10-December-2003; 6,665,569B1/16-December-2003; (KO)415475/6-January-2004; GB2388003B/21-January-2004; GB2365567/10-March-2004; EU0812447/26-May-2004; GB2363208/25-August-2004; GB2366639B/13-October-2004; 7,006,956/28-February-2006; 7,013,246B1/14-March-2006; 7,013,468/14-March-2006; (JP)3,962,109/25-May-2007.

Third-Party Trademarks

Adobe, Acrobat, Adobe LiveCycle PDF Generator, Distiller, FrameMaker and the Acrobat logo are trademarks of Adobe Systems Incorporated. I Run and ISOGEN are registered trademarks of Alias Ltd. TeX is a trademark of the American Mathematical Society. Apple, Mac, Mac OS, Panther, and Tiger are trademarks or registered trademarks of Apple Computer, Inc. AutoCAD and Autodesk Inventor are registered trademarks of Autodesk, Inc. Baan is a registered trademark of Baan Company. BEA WebLogic Server and BEA WebLogic Platform are trademarks of BEA Systems, Inc. CATIA and CADAM are registered trademarks of Dassault Systemes, S.A. The Sigma Check icon, CETOL, CETOL 6 Sigma are trademarks of Sigmetrix, LLC. MEDUSA and STHENO are trademarks of CAD Schroer GmbH. Allegro, Cadence, and Concept are registered trademarks of Cadence Design Systems, Inc. Cognos is a registered trademark of Cognos Corporation. CYA, iArchive, HOTbackup, and Virtual StandBy are trademarks or registered trademarks of CYA Technologies, Inc. DataDirect Connect is a registered trademark of DataDirect Technologies. Documentum is a registered trademark of EMC Corporation. FileNET is a registered trademark of FileNET Corporation. Panagon is a trademark of FileNET Corporation. PDGS is a registered trademark of Ford Motor Company. JAWS is a registered trademark of Freedom Scientific BLV Group, LLC in the United States and other countries. Geomagic is a registered trademark of Geomagic, Inc. HP, Hewlett-Packard, and HP-UX are registered trademarks of Hewlett-Packard Company. IBM, DB2, AIX, and WebSphere are registered trademarks of IBM Corporation. Advanced ClusterProven, ClusterProven, the ClusterProven design, Rational Rose, and Rational ClearCase are trademarks or registered trademarks of International Business Machines in the United States and other countries and are used under license. IBM Corporation does not warrant and is not responsible for the operation of this software product. Intel is a registered trademark of Intel Corporation. OrbixWeb is a registered trademark of IONA Technologies PLC. Interleaf is a trademark of Interleaf, Inc. IslandDraw and IslandPaint are trademarks of Island Graphics Corporation. Feature-Following Anti-Aliasing is a trademark of LightWork Design. Linux is a registered trademark of Linus Torvalds. 3Dconnexion is a registered trademark of Logitech International S.A. MainWin and Mainsoft are trademarks of Mainsoft Corporation. MatrixOne is a trademark of MatrixOne, Inc. Mentor Graphics and Board Station are registered trademarks and 3D Design, AMPLE, and Design Manager are trademarks of Mentor Graphics Corporation. Helix is a trademark of Microcadam, Inc. Microsoft, ActiveX, Excel, JScript, Vista, Windows, Windows NT, Windows 2000, Windows 2000 Server, Windows XP, Windows Server 2003, the Windows logo, Visual Basic, the Visual Basic logo, and Active Accessibility are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Moldflow is a registered trademark of Moldflow Corporation. Mozilla and Firefox are registered trademarks of the Mozilla Foundation. FLEXnet, InstallShield, and InstallAnywhere are trademarks or registered trademarks of Macrovision Corporation. Netscape, Netscape Navigator, Netscape Communicator, and the Netscape N and Ship's Wheel logos are registered trademarks or service marks of Netscape Communications Corporation in the U.S. and other countries. OSF/Motif and Motif are trademarks of the Open Software Foundation, Inc. Oracle and InterMedia are registered trademarks of Oracle Corporation. Palm Computing, Palm OS, Graffiti, HotSync, and Palm Modem are registered trademarks, and Palm III, Palm IIIe, Palm IIIx, Palm V, Palm Vx, Palm VII, Palm, More connected, Simply Palm, the Palm Computing platform logo, all Palm logos, and HotSync logo are trademarks of Palm, Inc. or its subsidiaries. PANTONE is a registered trademark and PANTONE CALIBRATED is a trademark of Pantone, Inc. Proximity and Linguibase are registered trademarks of Proximity Technology, Inc. Elan License Manager and Softlock are trademarks of Rainbow Technologies, Inc. RAND is a trademark of RAND Worldwide. RosettaNet is a trademark and Partner Interface Process and PIP are registered trademarks of RosettaNet, a nonprofit organization. SAP and R/3 are registered trademarks of SAP AG Germany. IRIX is a registered trademark of Silicon Graphics, Inc. S1000D is a registered trademark of Saab AB Joint Stock Company. SolidWorks is a registered trademark of SolidWorks Corporation. SPARC is a registered trademark and SPARCStation is a trademark of SPARC International, Inc. (Products bearing the SPARC trademarks are based on an architecture developed by Sun Microsystems, Inc.) All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the United States and in other countries. Sun, Sun Microsystems, the Sun logo, Solaris, UltraSPARC, Java and all Java based marks, and "The Network is the Computer" are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and in other countries. HOOPS is a trademark of Tech Soft America, Inc. DOORS is a registered trademark of Telelogic AB. UNIX is a registered trademark of The Open Group. TIBCO is a registered trademark and TIBCO ActiveEnterprise, TIBCO Designer, TIBCO Enterprise Message Service, TIBCO Rendezvous, TIBCO TurboXML, and TIBCO BusinessWorks are trademarks or registered trademarks of TIBCO Software Inc. in the United States and other countries. I-DEAS, Metaphase, Parasolid, SHERPA, Solid Edge, TeamCenter, UG NX, and Unigraphics are trademarks or registered trademarks of UGS Corp., a Siemens group company. Galaxy Application Environment is a licensed trademark of Visix Software, Inc. WebEx is a trademark of WebEx Communications, Inc. API Toolkit is a trademark of InterCAP Graphics Systems, Inc. BEA and WebLogic are registered trademarks of BEA Systems, Inc. X Window System is a trademark of X Consortium, Inc.

Third-Party Technology Information

Certain PTC software products contain licensed third-party technology: Adobe LiveCycle PDF Generator, Adobe Acrobat Reader and Adobe Distiller are copyrighted software of Adobe Systems Inc. and are subject to the Adobe End User License Agreement as provided by Adobe with those products. Web Help © 2004 and Macromedia RoboHelp are copyrighted software of Adobe Systems Incorporated. The Pro/ENGINEER Digital Rights Management module uses Adobe® LiveCycle® Rights Management ES.

CETOL is copyrighted software of Sigmetrix, LLC. Pro/ENGINEER Tolerance Analysis Extension - powered by CETOL Technology.

I Run and ISOGEN are copyrighted software of Alias Ltd.

Word, FrameMaker, and Interleaf filters. Copyright © 2000 Blueberry Software. All rights reserved.

CimPro, IGES/Pro, and PS/Pro software are provided by CAD/CAM-E, Inc.

The Arbortext Import/Export feature includes components that are licensed and copyrighted by CambridgeDocs LLC (© 2002-2007 CambridgeDocs LLC) - a division of Document Sciences. This functionality:

Includes software developed by the Apache Software Foundation (<http://www.apache.org>).

Redistributes JRE from Sun Microsystems. The Redistributable is complete and unmodified, and only bundled as part of the product. CambridgeDocs is not distributing additional software intended to supersede any component(s) of the Redistributable, nor has CambridgeDocs removed or altered any proprietary legends or notices contained in or on the Redistributable. CambridgeDocs is only distributing the Redistributable pursuant to a license agreement that protects Sun's interests consistent with the terms contained in the Agreement. CambridgeDocs agrees to defend and indemnify Sun and its licensors from and against any damages, costs, liabilities, settlement amounts and/or expenses (including attorney's fees) incurred in connection with any claim, lawsuit, or action by any third party that arises or results from the use or distribution of any and all Programs and/or Software. This product includes code licensed from RSA Security, Inc. ICU4J portions licensed from IBM (see terms at <http://www.icu-project.org/apiref/icu4j/>).

Redistributes the Saxon XSLT Processor from Michael Kay, more information, including source code is available at <http://saxon.sourceforge.net/>.

Uses cxImage, an open source image conversion library that follows the zlib license. cxImage further uses the following images libraries which also ship (statically linked) with cxLib: zLib, LibTIFF, LibPNG, LibJPEG, JBIG-Kit, JasPer, LibJ2K. See <http://www.xdp.it/cximage.htm>.

Includes software developed by Andy Clark, namely Neko DTD © Copyright Andy Clark. All rights reserved. For more information, visit <http://www.apache.org/~andyc/neko/doc/index.html>.

Includes code which was developed and copyright by Steven John Metsker, and shipped with Building Parsers with Java, from Addison Wesley.

Uses controls from Infragistics NetAdvantage 2004, Volume 3, © Copyright 2004 Infragistics.

VERICUT is copyrighted software and a registered trademark of CGTech.

File Filters © 1986-2002 Circle Systems, Inc.

Certain business intelligence reporting functionality is powered by Cognos.

DFORMD.DLL is copyrighted software from Compaq Computer Corporation and may not be distributed.

Hyphenation Copyright © 1986-1999, Computer Hyphenation Ltd. All rights reserved.

RetrievalWare is copyrighted software of Convera Corporation.

DataDirect Connect is copyrighted software of DataDirect Technologies.

PStill software is copyright © Dipl.-Ing. Frank Siebert, 1996-2005.

FAST InStream is copyright© of Fast Search & Transfer, Inc.

Portions of the Mathcad Solver © 1990-2002 by Frontline Systems, Inc.

Exceed and Exceed 3D are copyrighted software of Hummingbird Ltd., a division of Open Text Corporation.

Rational Rose and Rational ClearCase are copyrighted software of IBM Corp. IBM Corporation does not warrant and is not responsible for the operation of this software product.

G-POST is copyrighted software and a registered trademark of Intercim.

The CD-ROM Composer and CD-ROM Consumer are based on Vivace CD-Web Composer Integrator © 1996-1997

KnowledgeSet Corporation. All rights reserved.

Xdriver and 3dxsrv are copyrighted software of 3Dconnexion, Inc, a Logitech International S.A. company. FLEXnet Publisher is copyrighted software of Macrovision Corporation.

Larson CGM Engine 9.4, Copyright © 1992-2006 Larson Software Technology, Inc. All rights reserved.

LightWork Libraries are copyrighted by LightWork Design 1990-2001.

MainWin Dedicated Libraries are copyrighted software of Mainsoft Corporation.

Microsoft Jet, Microsoft XML, Technology "Powered by Groove", Microsoft SQL Server 2005, Visual Basic for Applications, Internet Explorer and Portions compiled from Microsoft Developer Network Redistributable Sample Code, including Microsoft DLL redistributables, are all copyrighted software of Microsoft Corporation.

Pro/PLASTIC ADVISOR is powered by Moldflow technology.

Fatigue Advisor nCode libraries from nCode International.

NuTCRACKER Server Operating Environment is copyrighted software of MKS Inc.

Oracle 8i run time, Oracle 9i run time, and Oracle 10g run time are Copyright 2002-2004 Oracle Corporation. Oracle programs provided herein are subject to a restricted use license and can only be used in conjunction with the PTC software they are provided with.

PDFlib software is copyright © 1997-2005 PDFlib GmbH. All rights reserved.

Proximity Linguistic Technology provides Spelling Check/Thesaurus portions of certain software products, including: The

Proximity/Bertelsmann Lexikon Verlag Database. Copyright © 1997 Bertelsmann Lexikon Verlag. Copyright © 1997,

All Rights Reserved, Proximity Technology, Inc.; The Proximity/C.A. Stromberg AB Database. Copyright © 1989 C.A.

Stromberg AB. Copyright © 1989, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Editions Fernand Nathan

Database. Copyright © 1984 Editions Fernand Nathan. Copyright © 1989, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Espasa-Calpe Database. Copyright © 1990 Espasa-Calpe. Copyright © 1990, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Dr. Lluís de Yzaguirre i Maura Database. Copyright © 1991 Dr. Lluís de Yzaguirre i Maura Copyright © 1991, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Franklin Electronic Publishers, Inc. Database. Copyright © 1994 Franklin Electronic Publishers, Inc. Copyright © 1994, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Hachette Database. Copyright © 1992 Hachette. Copyright © 1992, All Rights Reserved, Proximity Technology, Inc.; The Proximity/IDE a.s. Database. Copyright © 1989, 1990 IDE a.s. Copyright © 1989, 1990, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Merriam-Webster, Inc. Database. Copyright © 1984, 1990 Merriam-Webster, Inc. Copyright © 1984, 1990, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Merriam-Webster, Inc./Franklin Electronic Publishers, Inc. Database. Copyright © 1990 Merriam-Webster Inc. Copyright © 1994 Franklin Electronic Publishers, Inc. Copyright © 1994, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Munksgaard International Publishers Ltd. Database. Copyright © 1990 Munksgaard International Publishers Ltd. Copyright © 1990, All Rights Reserved, Proximity Technology, Inc.; The Proximity/S. Fischer Verlag Database. Copyright © 1983 S. Fischer Verlag. Copyright © 1997, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Van Dale Lexicografie by Database. Copyright © 1995, 1997 Van Dale Lexicografie by. Copyright © 1996, 1997, All Rights Reserved, Proximity Technology, Inc.; The Proximity/William Collins Sons & Co. Ltd. Database. Copyright © 1984, 1990 William Collins Sons & Co. Ltd. Copyright © 1988, 1990, All Rights Reserved, Proximity Technology, Inc.; The Proximity/Zanichelli Database. Copyright © 1989 Zanichelli. Copyright © 1989, All Rights Reserved, Proximity Technology, Inc. Certain license management is based on Elan License Manager © 1989-1999 Rainbow Technologies, Inc. All rights reserved. PDFIT © 1995-2002 Dr. Klaus Schittkowski.

MuPAD OEM kernel, version 3.2.1 (Mathsoft Kernel) © 2005 by SciFace Software GmbH & Co. KG.

TetMesh GHS3D provided by Simulog Technologies, a business unit of Simulog S.A.

HOOPS graphics system is a proprietary software product of, and is copyrighted by, Tech Soft America, Inc.

TECHNOMATIX is copyrighted software and contains proprietary information of Technomatix Technologies Ltd.

TIBCO ActiveEnterprise, TIBCO Designer, TIBCO Enterprise Message Service, TIBCO Rendezvous, TIBCO TurboXML, and TIBCO BusinessWorks are provided by TIBCO Software Inc.

Parasolid is copyrighted software of UGS Corp, a Siemens group company.

VisTools library is copyrighted software of Visual Kinematics, Inc. (VKI) containing confidential trade secret information belonging to VKI. Technology "Powered by WebEx" is provided by WebEx Communications, Inc.

Certain graphics-handling portions are based on the following technologies:

GIF: Copyright 1989, 1990 Kirk L. Johnson. The author disclaims all warranties with regard to this software, including all implied warranties of merchantability and fitness. In no event shall the author be liable for any special, indirect, or consequential damages or any damages whatsoever resulting from loss of use, data or profits, whether in an action of contract, negligence, or other tortious action, arising out of or in connection with the use or performance of this software.

JPEG: This software is based in part on the work of the Independent JPEG Group.

PNG: Copyright 2004-2006 Glenn Randers-Pehrson.

TIFF: Copyright 1988-1997 Sam Leffler. Copyright © 1991-1997 Silicon Graphics, Inc. The software is provided AS IS and without warranty of any kind, express, implied, or otherwise, including without limitation, any warranty of merchantability or fitness for a particular purpose. In no event shall Sam Leffler or Silicon Graphics be liable for any special, incidental, indirect, or consequential damages of any kind, or any damages whatsoever resulting from loss of use, data or profits, whether or not advised of the possibility of damage, or on any theory of liability, arising out of or in connection with the use or performance of this software.

XBM, Sun Raster, and Sun Icon: Copyright, 1987, Massachusetts Institute of Technology.

ZLIB: Copyright 1995-2004 Jean-loup Gailly and Mark Adler.

Sentry Spelling-Checker Engine copyright © 1994-2003 Wintertree Software, Inc.

Portions of software documentation are used with the permission of the World Wide Web Consortium. Copyright © 1994-2006 World Wide Web Consortium, (Massachusetts Institute of Technology, European Research Consortium for Informatics and Mathematics, Keio University). All Rights Reserved. <http://www.w3.org/Consortium/Legal>. Such portions are indicated at their points of use.

Copyright and ownership of certain software components is with YARD SOFTWARE SYSTEMS LIMITED, unauthorized use and copying of which is hereby prohibited. YARD SOFTWARE SYSTEMS LIMITED 1987. (Lic. #YSS:SC:9107001)

LAPACK libraries used are freely available at <http://www.netlib.org> (authors are Anderson, E. and Bai, Z. and Bischof, C. and Blackford, S. and Demmel, J. and Dongarra, J. and Du Croz, J. and Greenbaum, A. and Hammarling, S. and McKenney, A. and Sorensen, D.).

Certain software components licensed in connection with the Apache Software Foundation and/or pursuant to the Apache Software License Agreement (version 2.0 or earlier). All rights are reserved by the Licensor of such works, and use is subject to the terms and limitations (and license agreement) at <http://www.apache.org>. This software is provided by its Contributors AS IS, WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, and any expressed or implied warranties, including, but not limited to, the implied warranties of title non-infringement, merchantability and fitness for a particular purpose are disclaimed. In no event shall the Apache Software Foundation or its Contributors be liable for any direct, indirect, incidental, special, exemplary, or consequential damages (including, but not limited to, procurement of substitute goods or services; loss of use, data, or profits; or business interruption) however caused and on any theory of liability, whether in contract, strict liability, or tort (including negligence or otherwise) arising in any way out of the use of this software, even if advised of the possibility of such damage. Software includes:

Apache Server, Axis, Ant, Tomcat, Xalan, Xerces, Batik, Jakarta, Jakarta POI, Jakarta Regular Expression, Commons-FileUpload, and XML Beans
IBM XML Parser for Java Edition, the IBM SaxParser and the IBM Lotus XSL Edition
DITA-OT - Apache License Version
IzPack: Java-based Software Installers Generator (<http://www.izforge.com/izpack/start>)
Jakarta-ORO (as used with Jena Software)
NekoHTML and CyberNeko Pull Parser software developed by Andy Clark © Copyright, Andy Clark. All rights reserved.
Lucene (<http://lucene.apache.org>)
Quartz (scheduler) Copyright 2004-200x OpenSymphony (<http://www.opensymphony.com/quartz/>)
Jetty Copyright Mortbay.Org (<http://www.mortbay.com/mbindex.html>)
Google Web Toolkit Copyright 2007 Google
U3D Library Copyright 1999 - 2006 Intel Corporation
antlr-2.7.0.zip - ANTLR parser and lexer generator, version 2.7.0; Provided pursuant to: ANTLR 2 License <http://www.antlr.org/license.html>. The Boost Library - Misc. C++ software from <http://www.boost.org>; Provided pursuant to: Boost Software License http://www.boost.org/more/license_info.html and http://www.boost.org/LICENSE_1_0.txt.
PDFBOX - Free software provided pursuant to the BSD license at <http://www.pdfbox.org/index.html> - Features. Eclipse SWT is distributed under the Eclipse Public License (EPL) (<http://www.eclipse.org/org/documents/epl-v10.php>) and is provided AS IS by authors with no warranty therefrom and any provisions which differ from the EPL are offered by PTC. Upon request PTC will provide the source code for such software for a charge no more than the cost of performing this distribution.
The following software is incorporated pursuant to the "BSD License" (or a similar license):
iCal4j is Copyright © 2005, Ben Fortuna, All rights reserved.
Dojo - Copyright 2005, The Dojo Foundation, All rights reserved.
Jaxen (shipped as part of dom4j) Copyright 2003-2006 The Werken Company. All Rights Reserved.
XMP (eXtensible Metadata Platform) technology from Adobe - Copyright © 1999 - 2007, Adobe Systems Incorporated. All rights reserved.
Redistribution and use of the above in source and binary forms, with or without modification, are permitted provided that the following conditions are met: (i) Redistributions of source code must retain the above copyright notice, this list of conditions, and the following disclaimer; (ii) Redistributions in binary form must reproduce the above copyright notice, this list of conditions, and the following disclaimer in the documentation and/or other materials provided with the distribution; and (iii) Neither the name of the copyright holder nor the names of any other contributors may be used to endorse or promote products derived from this software without specific prior written permission. THE ABOVE SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS AS IS AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
The Java Getopt.jar file, copyright 1987 1997 Free Software Foundation, Inc.
#ZipLib GNU software is developed for the Free Software Foundation, Inc. 59 Temple Place, Suite 330, Boston, MA 02111-1307 USA, copyright © 1989, 1991. PTC hereby disclaims all copyright interest in the program #ZipLib written by Mike Krueger. #ZipLib licensed free of charge and there is no warranty for the program, to the extent permitted by applicable law. Except when otherwise stated in writing the copyright holders and/or other parties provide the program AS IS without warranty of any kind, either expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose. The entire risk as to the quality and performance of the program is with you. Should the program prove defective, you assume the cost of all necessary servicing, repair, or correction.
May contain script.aculo.us (built on "prototype.conio.net"). Copyright © 2005 Thomas Fuchs (<http://script.aculo.us>, <http://mir.aculo.us>). Software is used under the following permissions: Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, subject to the following conditions: The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
The Java™ Telnet Applet (StatusPeer.java, TelnetIO.java, TelnetWrapper.java, TimedOutException.java), Copyright © 1996, 97 Mattias L. Jügel, Marcus Meißner, is redistributed under the GNU General Public License. This license is from the original copyright holder and the Applet is provided WITHOUT WARRANTY OF ANY KIND. You may obtain a copy of the source code for the Applet at <http://www.mud.de/se/jta> (for a charge of no more than the cost of physically performing the source distribution), by sending e mail to leo@mud.de or marcus@mud.de—you are allowed to choose either distribution method. Said source code is likewise provided under the GNU General Public License.
The following software, which is provided with and called by certain PTC software products, is licensed under the GNU General Public License (<http://www.gnu.org/licenses/gpl.txt>) and is provided AS IS by the authors with no warranty therefrom without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE (see the GNU



GPL for more details). Upon request PTC will provide the source code for such software for a charge no more than the cost of performing this distribution:

Ghost Script (<http://www.cs.wisc.edu/~ghost>).

Launch4j: This program is free software licensed under the GPL license, the head subproject (the code which is attached to the wrapped jars) is licensed under the LGPL license. Launch4j may be used for wrapping closed source, commercial applications.

The PJA (Pure Java AWT) Toolkit library (<http://www.eteks.com/pja/en>).

The following unmodified libraries distributed under the GNU-GPL: libstdc and #ziplib (each are provided pursuant to an exception that permits use of the library in proprietary applications with no restrictions provided that the library is not modified).

The following software is distributed under GNU Lesser General Public License (LGPL) which is at <http://www.gnu.org/copyleft/lesser.html> and is provided AS IS by authors with no warranty therefrom without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE (see the GNU LGPL for more details). Upon request PTC will provide the source code for such software for a charge no more than the cost of performing this distribution:

eXist, an Open Source Native XML Database, is redistributed under the GNU LGPL. You may obtain a copy of the source code at <http://exist.sourceforge.net/index.html>. The source code is likewise provided under the GNU LGPL.

GTK+ - The GIMP Toolkit is licensed under the GNU Library General Public License (LGPL). You may obtain a copy of the source code at <http://www.gtk.org/>, which is likewise provided under the GNU LGPL.

Java Port copyright 1998 by Aaron M. Renn (arenn@urbanophile.com), is redistributed under the GNU LGPL. You may obtain a copy of the source code at <http://www.urbanophile.com/arenn/hacking/download.html>. The source code is likewise provided under the GNU LGPL.

JFreeChart is licensed under the GNU LGPL and can be found at <http://www.jfree.org>.

OmniORB is distributed under the terms and conditions of the GNU General Public License - The OmniORB Libraries are released under the GNU LGPL.

May include Jena Software © Copyright 2000, 2001, 2002, 2003, 2004, 2005 Hewlett-Packard Development Company, LP. THIS SOFTWARE IS PROVIDED BY THE AUTHOR "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. Jena includes:

Jakarta-ORO software developed by the Apache Software Foundation (described above).

ICU4J software Copyright © 1995-2003 International Business Machines Corporation and others All rights reserved.

Software is used under the following permissions: Permission is hereby granted, free of charge, to any person obtaining a copy of this software and associated documentation files (the "Software"), to deal in the Software without restriction, including without limitation the rights to use, copy, modify, merge, publish, distribute, and/or sell copies of the Software, and to permit persons to whom the Software is furnished to do so, provided that the above copyright notice(s) and this permission notice appear in all copies of the Software and in supporting documentation. THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR HOLDERS INCLUDED IN THIS NOTICE BE LIABLE FOR ANY CLAIM, OR ANY SPECIAL INDIRECT OR CONSEQUENTIAL DAMAGES, OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE. Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

CUP Parser Generator Copyright ©1996-1999 by Scott Hudson, Frank Flannery, C. Scott Ananian-used by permission.

The authors and their employers disclaim all warranties with regard to this software, including all implied warranties of merchantability and fitness. In no event shall the authors or their employers be liable for any special, indirect or consequential damages, or any damages whatsoever resulting from loss of use, data or profits, whether in an action of contract, negligence or other tortious action arising out of or in connection with the use or performance of this software.

ImageMagick software is Copyright © 1999-2005 ImageMagick Studio LLC, a nonprofit organization dedicated to making software imaging solutions freely available. ImageMagick is freely available without charge and provided pursuant to the following license agreement: <http://www.imagemagick.org/script/license.php>.

UnZip (© 1990 2001 Info ZIP, All Rights Reserved) is provided AS IS and WITHOUT WARRANTY OF ANY KIND. For the complete Info ZIP license see <http://www.info-zip.org/doc/LICENSE>. "Info-ZIP" is defined as the following set of individuals: Mark Adler, John Bush, Karl Davis, Harald Denker, Jean-Michel Dubois, Jean-loup Gailly, Hunter Goatley, Ian Gorman, Chris Herborth, Dirk Haase, Greg Hartwig, Robert Heath, Jonathan Hudson, Paul Kienitz, David Kirschbaum, Johnny Lee, Onno van der Linden, Igor Mandrichenko, Steve P. Miller, Sergio Monesi, Keith Owens, George Petrov, Greg Roelofs, Kai Uwe Rommel, Steve Salisbury, Dave Smith, Christian Spieler, Antoine Verheijen, Paul von Behren, Rich Wales, and Mike White. ICU Libraries (International Components for Unicode) Copyright 1995-2001 International Business Machines Corporation and others, All rights reserved. Libraries are provided pursuant to the ICU Project (notice is set forth above) at <http://www-306.ibm.com/software/globalization/icu/index.jsp>.

The Independent JPEG Group's JPEG software. This software is Copyright © 1991-1998, Thomas G. Lane. All Rights Reserved. This software is based in part on the work of the Independent JPEG Group.

iText Library - Copyright © 1999-2006 by Bruno Lowagie and Paulo Soares. All Rights Reserved – source code and further information available at <http://www.lowagie.com/iText>.

jpeg-6b.zip - JPEG image compression library, version 6.2. Used to create images for HTML output; Provided pursuant to: <http://www.faqs.org/faqs/jpeg-faq/part2>.

Pop up calendar components Copyright © 1998 Netscape Communications Corporation. All Rights Reserved.

METIS, developed by George Karypis and Vipin Kumar at the University of Minnesota, can be researched at <http://www.cs.umn.edu/~karypis/metis>.

Mozilla Japanese localization components are subject to the Netscape Public License Version 1.1 (at <http://www.mozilla.org/NPL>). Software distributed under the Netscape Public License (NPL) is distributed on an AS IS basis, WITHOUT WARRANTY OF ANY KIND, either expressed or implied (see the NPL for the rights and limitations that are governing different languages). The Original Code is Mozilla Communicator client code, released March 31, 1998 and the Initial Developer of the Original Code is Netscape Communications Corporation. Portions created by Netscape are Copyright © 1998 Netscape Communications Corporation. All Rights Reserved. Contributors: Kazu Yamamoto (kazu@mozilla.gr.jp), Ryoichi Furukawa (furu@mozilla.gr.jp), Tsukasa Maruyama (mal@mozilla.gr.jp), Teiji Matsuba (matsuba@dream.com).

The following components are subject to the Mozilla Public License Version 1.0 or 1.1 at <http://www.mozilla.org/MPL> (the MPL): Gecko and Mozilla components, Spidermonkey and Charset Detector. Software distributed under the MPL is distributed on an AS IS basis, WITHOUT WARRANTY OF ANY KIND, either expressed or implied and all warranty, support, indemnity or liability obligations under PTC's software license agreements are provided by PTC alone (see the MPL for the specific language governing rights and limitations). The source code and modifications thereto are available under the MPL and are available upon request.

Rhino JavaScript engine, distributed with a form of the Mozilla Public License (MPL).

tiff-v3.4-tar.gz - Libtiff File IO Library version 3.4: (see also <http://www.libtiff.org> <ftp://ftp.sgi.com/graphics/tiff>) Used by the image EFI library; Provided pursuant to: <http://www.libtiff.org/misc.html>.

The DITA standards, including DITA DTDs, DITA Schemas, and portions of the DITA specification used in online help; copyright © 2006 OASIS Open. All rights reserved.

Software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (<http://www.openssl.org/>): Copyright © 1998 2003 The OpenSSL Project. All rights reserved. This product may include cryptographic software written by Eric Young (ey@cryptsoft.com).

pcre-4.3-2-src.zip - Perl Compatible Regular Expression Library version 4.3. <http://www.pcre.org>; Provided pursuant to: PCRE License. <http://www.jg.org>; Provided pursuant to: <http://www.libpng.org/pub/png/src/libpng-LICENSE.txt>.

libpng, Copyright © 2004 Glenn Randers-Pehrson, which is distributed according to the disclaimer and license (as well as the list of Contributing Authors) at <http://www.libpng.org/pub/png/src/libpng-LICENSE.txt>.

METIS is © 1997 Regents of the University of Minnesota.

Curl software, Copyright ©1996 - 2005, Daniel Stenberg, (daniel@haxx.se) All rights reserved. Software is used under the following permissions: Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies. THE SOFTWARE IS PROVIDED AS IS, WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY/FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE. Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use, or other dealings.

Java Advanced Imaging (JAI) is provided pursuant to the Sun Java Distribution License (JDL) at <http://www.jai.dev.java.net>. The terms of the JDL shall supersede any other licensing terms for PTC software with respect to JAI components.

Regular expression support is provided by the PCRE library package, which is open source software, written by Philip Hazel, and copyright by the University of Cambridge, England. This software is based in part on the work of the Independent JPEG Group.

Regular Expressions support was derived from copyrighted software written by Henry Spencer, Copyright © 1986 by University of Toronto.

SGML parser: Copyright © 1994, 1995, 1996, 1997, 1998 James Clark, 1999 Matthias Clasen.

XML parser and XSLT processing was developed using Libxml and Libxslt by Daniel Veillard, Copyright © 2001.

libWWW (W3C's implementation of HTTP) can be found at: <http://www.w3.org/Library>; Copyright © 1994-2000 World Wide Web Consortium (Massachusetts Institute of Technology, Institut National de Recherche en Informatique et en Automatique, Keio University). All Rights Reserved. This program is distributed under the W3C's Software Intellectual Property License at: <http://www.w3.org/Consortium/Legal/2002/copyright-software-20021231>. This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See W3C License <http://www.w3.org/Consortium/Legal> for more details. Copyright © 1995 CERN.

"This product includes computer software created and made available by CERN. This acknowledgment shall be mentioned in full in any product which includes the CERN computer software included herein or parts thereof. "Perl support was developed with the aid of Perl Kit, Version 5.0. Copyright © 1989-2002, Larry Wall. All rights reserved.

The cad2eda program utilizes wxWidgets (formerly wxWindows) libraries for its cross-platform UI API, which is licensed under the wxWindows Library License at <http://www.wxwindows.org>.

zlib-1.2.1.tar.gz - Zip compression library version 1.2.1. <http://www.gzip.org/zlib>; Provided pursuant to: Zlib.h License.

ATLPort copyright 1999, 2000 Boris Fomitchev is provided by the copyright holder "as is" with absolutely no warranty expressed or implied. Permission to use or copy this software for any purpose is granted without fee, provided the foregoing notices are retained on all copies. Permission to modify the code and to distribute modified code is granted, provided the



above notices are retained and a notice that the code was modified is included with the above copyright notice. PTC reserves the right to modify this code and may do so with out further notice.

OpenCASCADE software is subject to the Open CASCADE Technology Public License Version 6.2 (the "License").

This software may only be used in compliance with the License. A copy of the License may be obtained at

<http://www.opencascade.org>. The Initial Developer of the Original Code is Open CASCADE S.A.S., with main offices at 15 bis, rue Ernest Renan 92136, Issy Les Moulineaux, France. The Original Code is copyright © Open CASCADE S.A.S., 2001. All rights reserved. "The Original Code" and all software distributed under the License are distributed by OpenCASCADE on an "AS IS" basis, without warranty of any kind, and the Initial Developer hereby disclaims all such warranties, including without limitation, any warranties of merchantability, fitness for a particular purpose, or noninfringement (please see the License for the specific terms and conditions governing rights and limitations under the License). PTC product warranties are provided solely by PTC.

Certain Pro/TOOLMAKER functions/libraries are as follows:

CSubclassWnd version 2.0 - Misc. C++ software; Copyright © 2000 NEWare Software.

STLPort - C++ templates; ©1999,2000 Boris Fomitchev; Provided pursuant to: STLPort License

<http://stlport.sourceforge.net/License.shtml>.

ZLib - Compression library; Copyright © 1995-2005 Jean-loup Gailly and Mark Adler; Provided pursuant to: ZLib License.

http://www.gzip.org/zlib/zlib_license.html.

Zip32 - Compression library; Copyright © 1990-2007.

Info-ZIP; Provided pursuant to: Info-ZIP License <http://www.info-zip.org/pub/infozip/license.html>.

Inno Setup - Installer package; Copyright © 1997-2007 Jordan Russell; Provided pursuant to Inno Setup License.

<http://www.jrsoftware.org/files/is/license.txt>.

7Zip - Compression package; Copyright © 1999-2007 Igor Pavlov; Provided pursuant to 7-Zip License

<http://www.7-zip.org/license.txt>.

UNITED STATES GOVERNMENT RESTRICTED RIGHTS LEGEND

This document and the software described herein are Commercial Computer Documentation and Software, pursuant to FAR 12.212(a)-(b) (OCT'95) or DFARS 227.7202-1(a) and 227.7202-3(a) (JUN'95), and are provided to the US Government under a limited commercial license only. For procurements predating the above clauses, use, duplication, or disclosure by the Government is subject to the restrictions set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software Clause at DFARS 252.227 7013 (OCT'88) or Commercial Computer Software-Restricted Rights at FAR 52.227 19(c)(1)-(2) (JUN'87), as applicable. 01012008

Parametric Technology Corporation, 140 Kendrick Street, Needham, MA 02494 USA

PRINTING HISTORY

Document No.	Date	Description
T2136-090-01	01/04/08	Initial Printing of Introduction to Windchill PDMLink 9.0

Order Number DT-2136-090-EN
Printed in the U.S.A