



Who's version should we believe? Revising the story with Autodesk Vault PL1341

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Class summary

This class introduces you to the powerful tools that are available in Autodesk® Vault Workgroup and Autodesk® Vault Professional for revision management, approval workflows, and engineering change orders (ECO).

Learn how categories are used to control the flow of your data and versions and revisions are intertwined. We also cover how to apply different revision schemes and how to initiate and track change via a change order.

Key learning objectives

At the end of this class, you will be able to:

- Identify and describe the differences between versions and revisions
- Apply Vault categories and file lifecycles to manage change
- Use ECOs to track revisions
- Explain the differences between file revision management and item revision management



About Me

- Live just outside Saskatoon, SK Canada
- My 3rd AU, 2nd Teaching
- CAD/CAM Engineering Technologist (1998)
- Application Specialist for an Autodesk Reseller (1998 – 2010)
- Technical Services Manager for Prairie Machine & Parts (2010+)
- Married to the most beautiful woman who has blessed me with four wonderful daughters



Versions & Revisions

Vault vs. Vault vs. Vault

Autodesk Vault Basic provides **Version** control but no tools to manage and track change.

Vault Workgroup and Vault Professional move from a simple data management tool that just tracks versions to a system managing the change of your files, from creation to retirement

Engineering drawing (the activity) produces engineering drawings (the documents). More than just the drawing of pictures, it is also a language—a graphical language that communicates ideas and information from one mind to another. Most especially, it communicates all needed information from the engineer who designed a part to the workers who will make it.

From Wikipedia “*Engineering drawing*” - http://en.wikipedia.org/wiki/Engineering_drawing

Vault vs. Vault vs. Vault

Looking at the three versions of Vault we have:

- **Vault** (Basic) = Version Management
- **Vault Workgroup** = Vault + “*Project lifecycles*”: tools to manage change on files
- **Vault Professional** = Vault Workgroup + Items and tools for managing changes to items

Webster’s dictionary describes a **revision** as “*the act of revising, which is to make a new, amended, improved, or up-to-date **version.***”

Version vs. Revision

Why do we care about the difference between a **version** and a **revision**?

What is a Version?

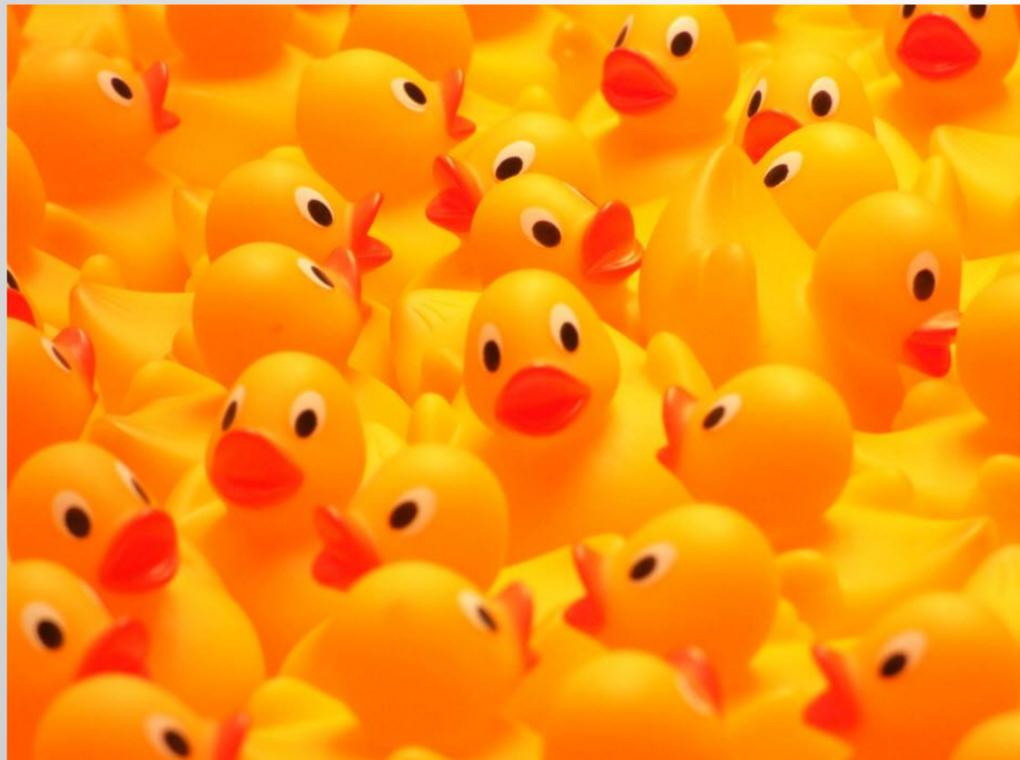
A Version is an iteration of a document, like having multiple copies

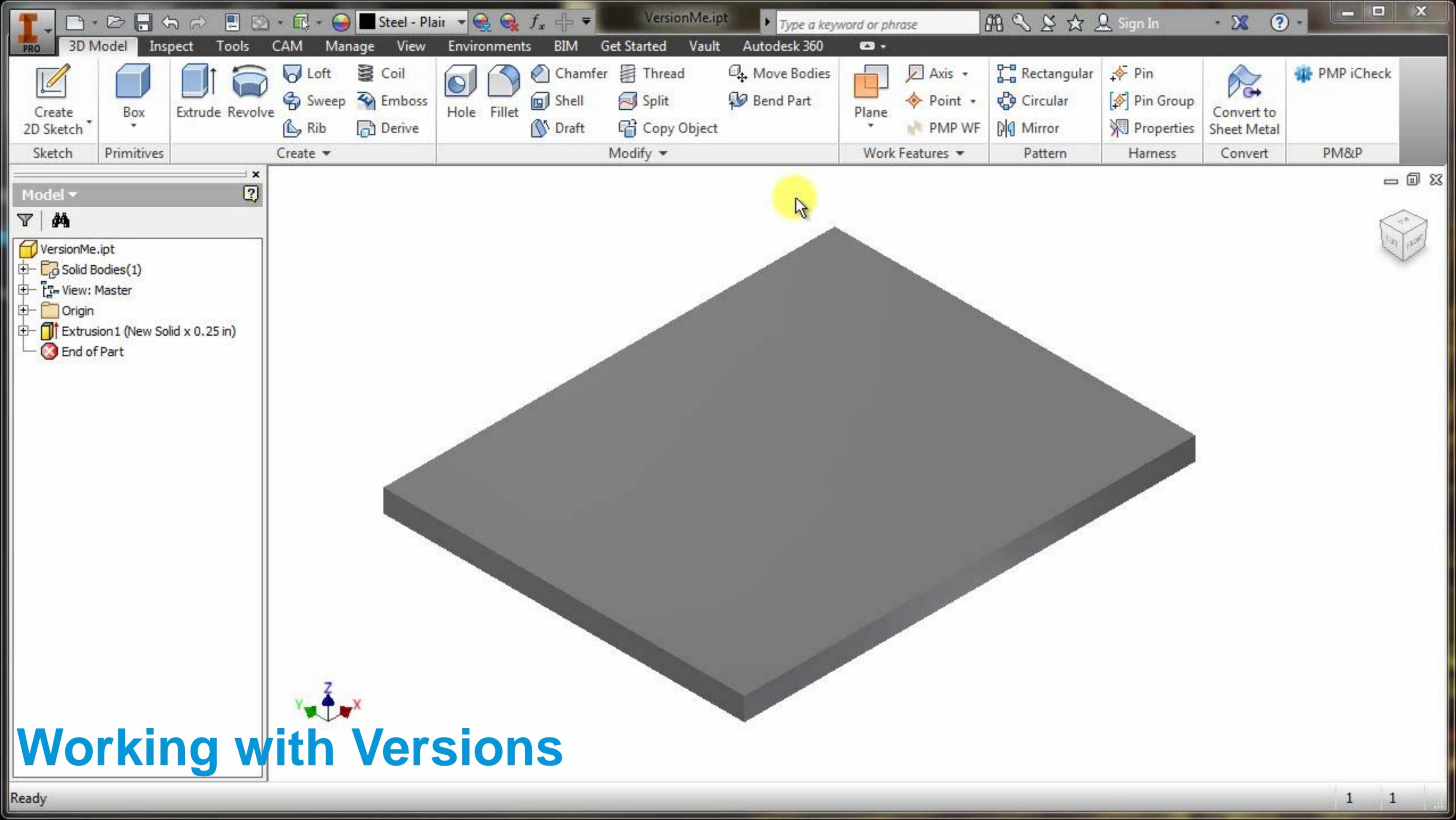
- Vault automatically creates and maintains versions of files as they are checked-in.
- Previous versions can be restored at any time

All versions have the same “worth” and are usually very important during the design (WIP) phase, to keep track of the design changes and be able to go back if a misstep occurs.

What is a Version?

The number of versions can build up very quickly and as each version is a copy of the file this also builds up the filestore very quickly meaning using the Vault admin puts a limit on the number of versions.... Aka by themselves there are no permanent versions





Working with Versions

What is a Revision?

A Revision is a milestone, the act of making a change and completing the work required.

- Revisions are made up of multiple versions... the versions are the steps to get to the final revision
- Revisions are the permanent version (for example Revision B might represent Version 14 of the file)



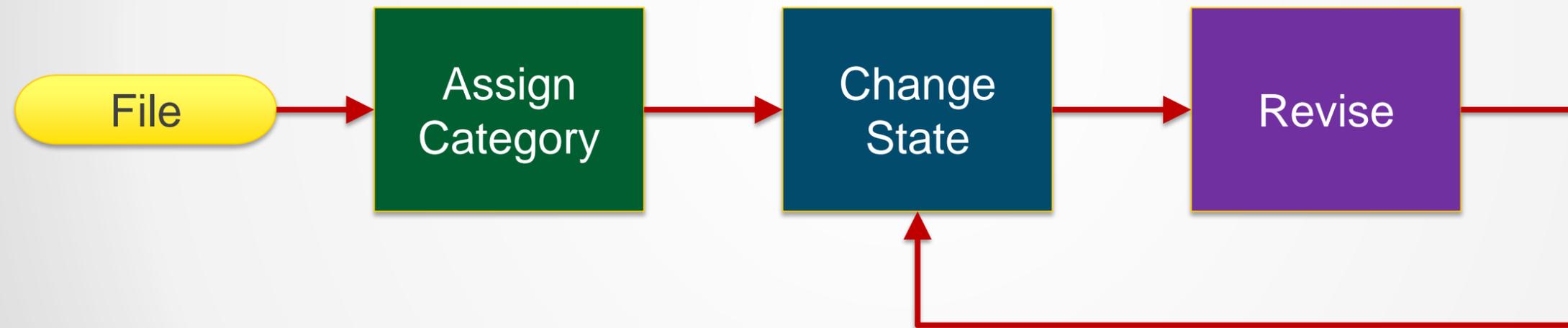


Lifecycles

What are Lifecycles

The Autodesk Wiki describes Lifecycles as

- *A lifecycle definition is an engine that can be configured to automatically assign security, behaviors, and properties to Vault objects based on where the object is in the life of the design process.*



You must be at Document Manager Level 1 or Level 2 to access File Lifecycles

What are Lifecycles

Autodesk Vault Professional 2014

File Edit View Go Tools Actions Help

New Report... Plot... Check In... Find... Change Category... Change State... Revise...

Project Explorer

- PMP1998
- PMP1999
- PMP2000
- PMP2005
- PMP2010
- PMP2011
- PURCHASED PARTS
- WORKING - MIKE THOMAS
- Electrical
- My Search Folders

My Shortcuts

Add new group

Home

Project Explorer

Contacts

Item Master

Change Order List

WORKING - MIKE THOMAS (D:_Vault Working Folder\Designs\WORKING - MIKE THOMAS)

Name	Description
Folder	
ACM - LIFECYCLE	
HSM	
PADLOCK BOM	
File	
2014.dwg	
VC_TEST01.dwg	
VC_TEST01.iam	
VC_TEST02.dwg	
VC_TEST02.iam	
VersionMe.ipt	

History Uses Where Used Change Order Preview

Number of versions: 5 (Local = Version #5)

Number of revisions: 1 Show all versions

Thumbnail	File Name	Revision	State (Historical)	Created By	Checked In	Comment
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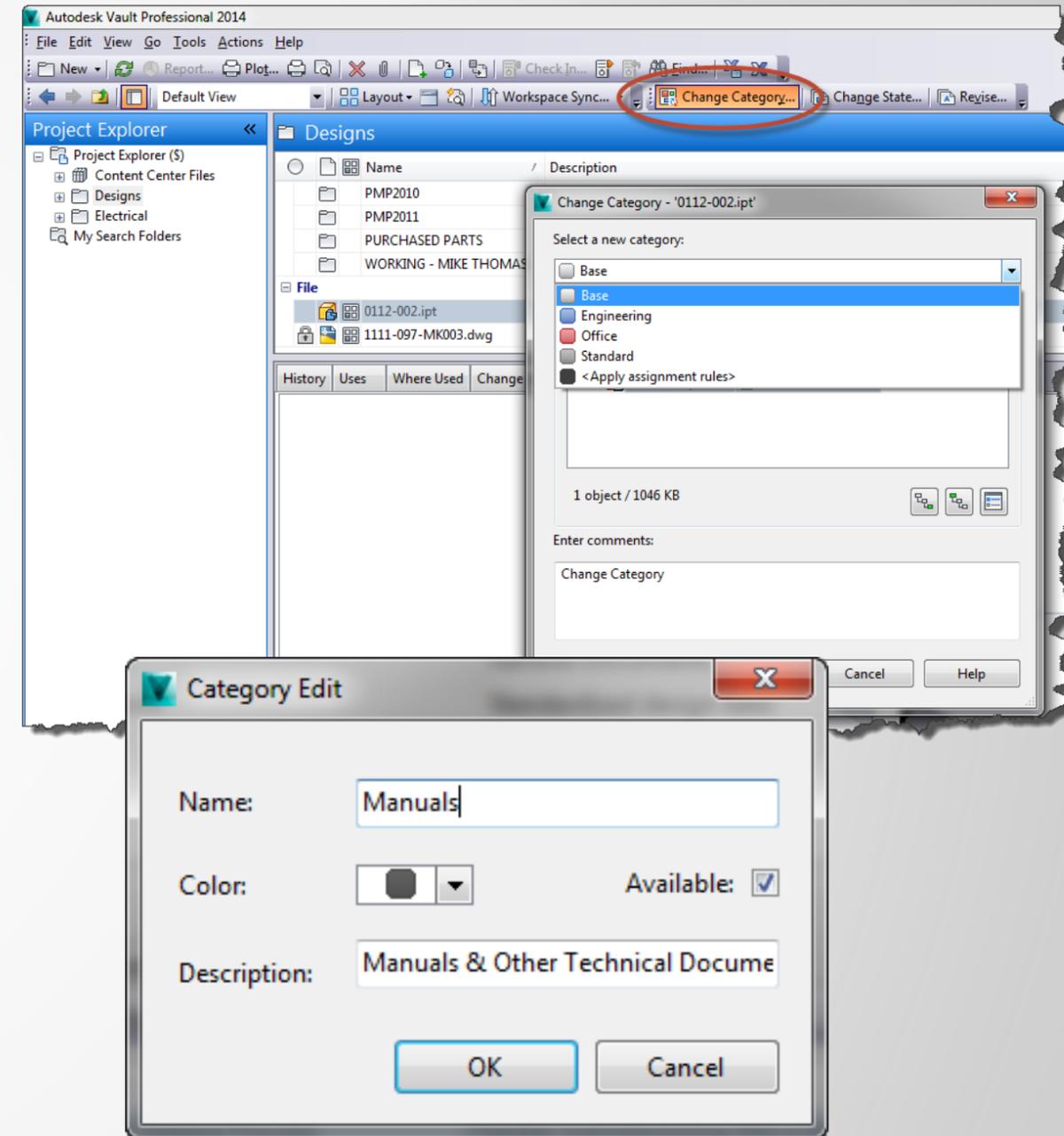
9 Object(s) (1 selected) pmpw2k8v1 sandbox mthomas

What are Categories?

- A label you can apply to files, folders, custom objects, or items to provide a grouping method
- Assists with identification, tracking, and organization

Key Aspect of Lifecycles

- Assigns User-defined Properties
- Assigns the lifecycle definitions available on the file
- Assigns the revision schemes available on the file



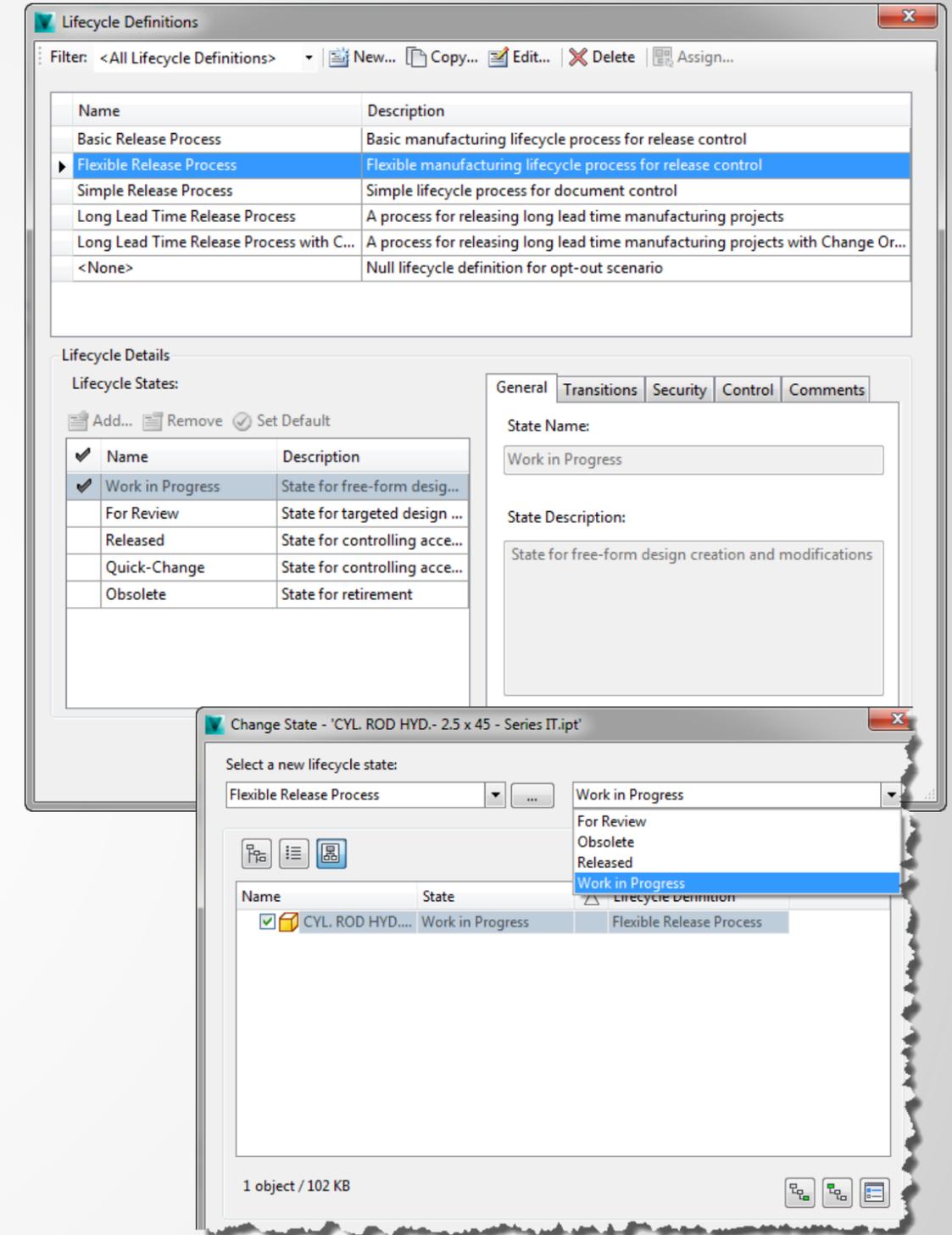
Lifecycle Definitions

Autodesk's help describes Lifecycle Definitions as:

“A lifecycle definition is an engine that can be configured to automatically assign security, behaviors, and properties to Vault objects based on where the object is in the life of the design process. This functionality allows you to streamline your work environment by removing the overhead involved in managing groups of files, custom objects, or an entire project.”

Vault Lifecycle **States** identify the current status within the lifecycle.

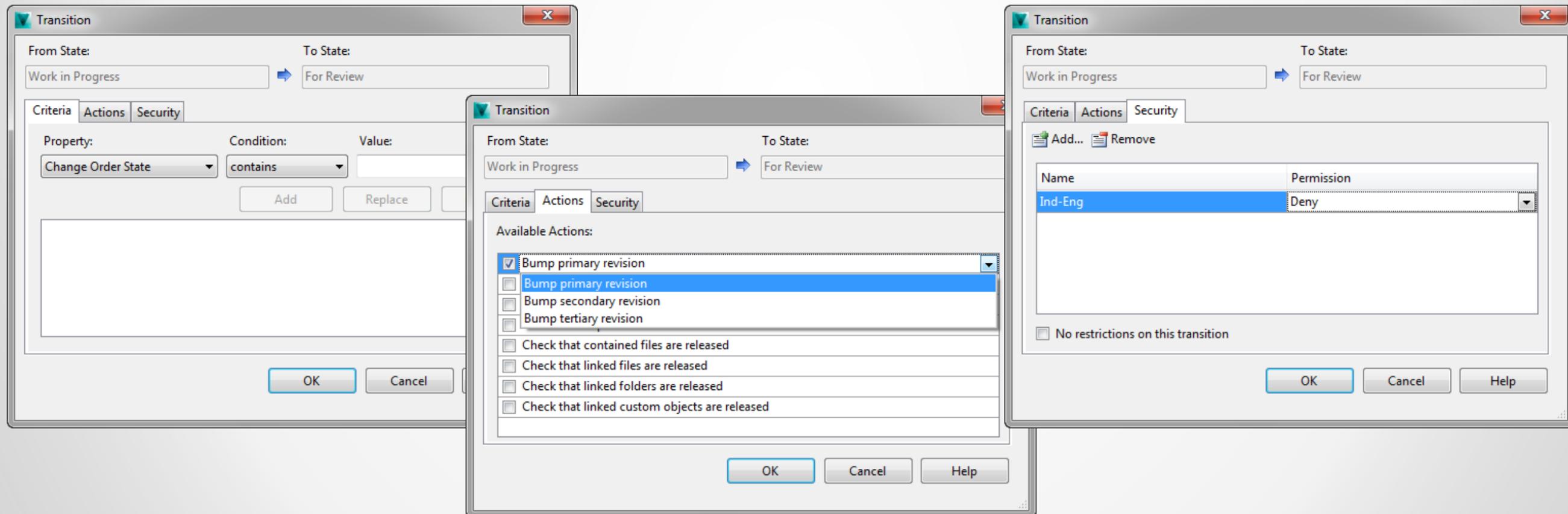
- The number and type of states is based on the Lifecycle Definition Transition Rules.
- The transition can occur manually or automatically.



Lifecycle Definitions

The Transition of a State determines

- the property **Criteria** requirements (Compliance) that must be in place before the state change can occur
- the **Actions** that happen during the state change (like revision bump)
- the **Security**, as in who can make the specific state change



Lifecycles at a glance...

The screenshot displays the Autodesk Vault Professional 2014 interface. The main window shows a project named "WORKING - MIKE THOMAS" with a file list containing folders like "ACM - LIFECYCLE", "HSM", and "PADLOCK BOM", and files such as "2014.dwg", "VC_TEST01.dwg", "VC_TEST01.iam", "VC_TEST02.dwg", "VC_TEST02.iam", and "VersionMe.ipt". The "VersionMe.ipt" file is selected. Below the file list, a "History" tab is active, showing a table with columns for "Thumbnail", "File Name", "Revision", "State (Historical)", "Created By", "Checked In", and "Comment". The table displays the number of versions (11) and revisions (5) for the selected file. The interface also includes a "Project Explorer" on the left, a "My Shortcuts" section, and a "Properties" pane on the right.

Thumbnail	File Name	Revision	State (Historical)	Created By	Checked In	Comment
Number of versions: 11 (Local = Version #5)						
Number of revisions: 5						

9 Object(s) (1 selected) pmpw2k8v1 sandbox mthomas

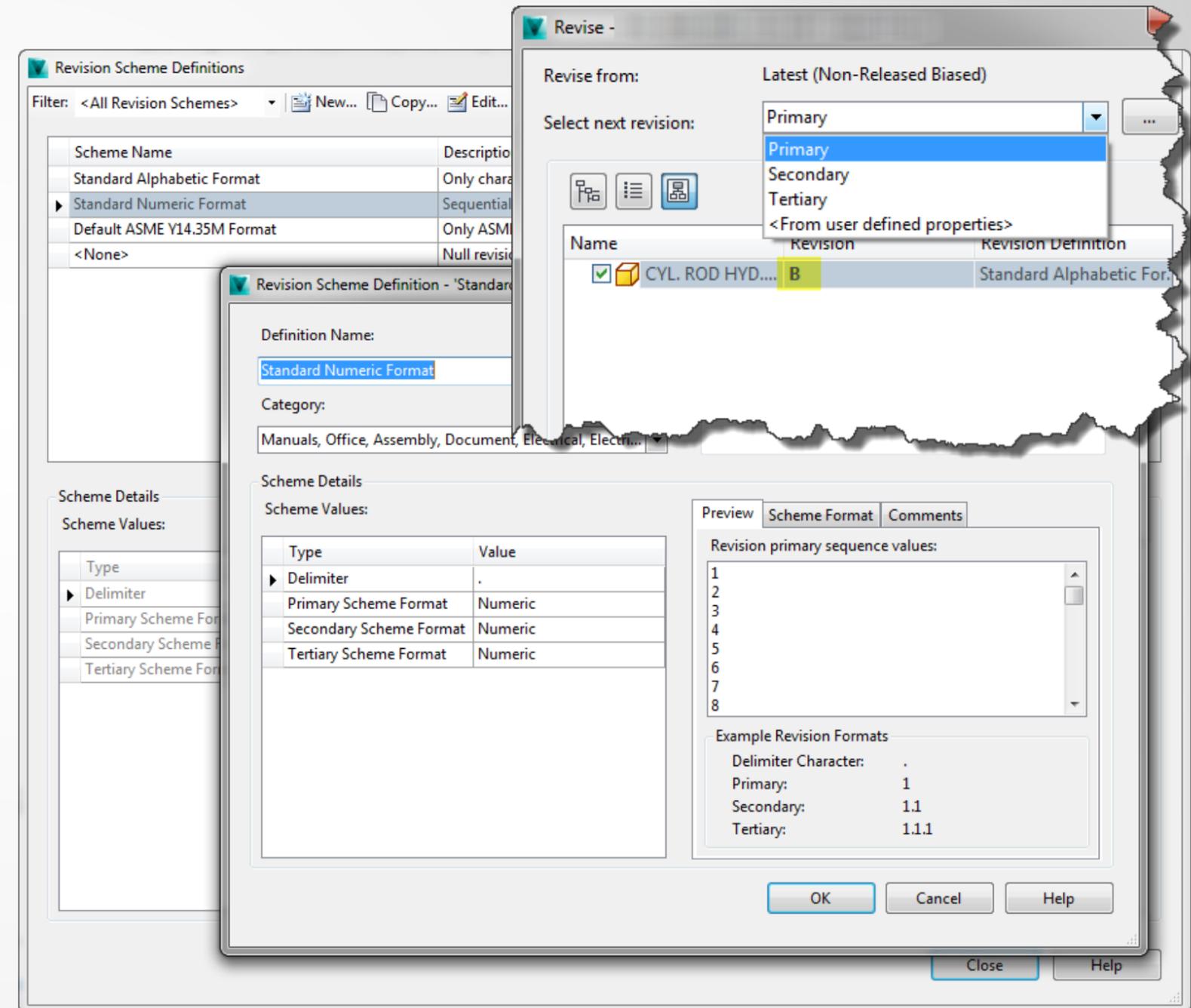
Making Revisions

Revisions

Revision Schemes define the sequence and format of the Revision Value applied to your file

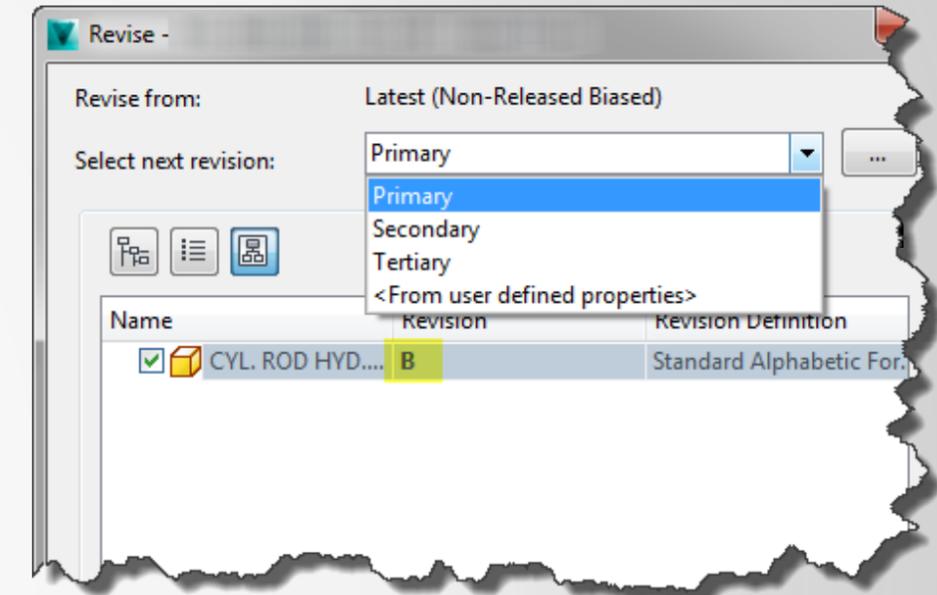
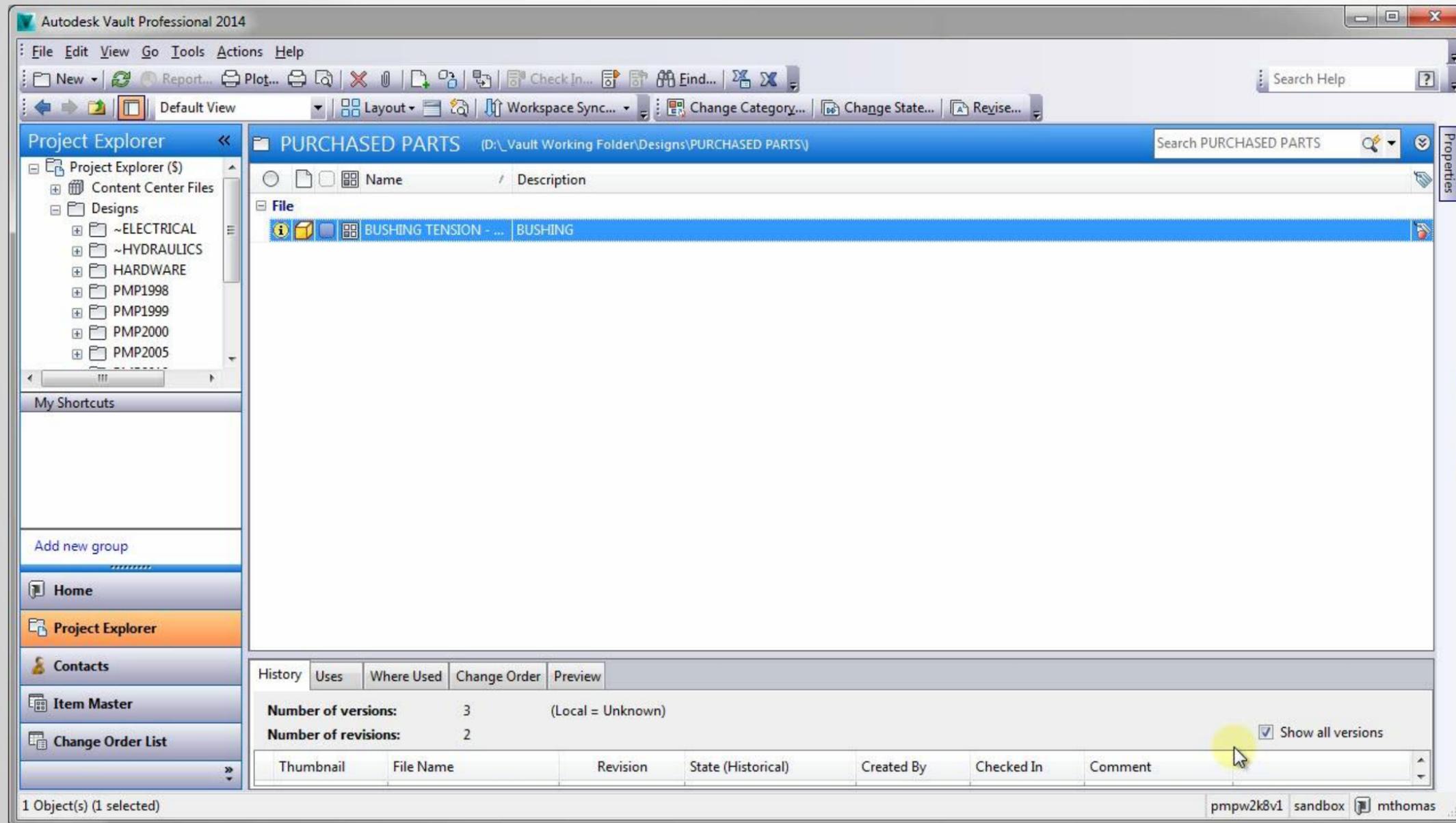
The “Out-of-the-box” Schemes

- Standard Alphabetic (A, B, B.1, B.1.1 to ZZ)
- Default Alphabetic (same as standard but starts at rev “-“)
- Standard Numeric (1, 2, 2.1, 2.1.1 to 99)
- Default Numeric (same as standard but starts at rev “-“)
- Default ASME Y14.35M (-, A, B, A.1, A.1.1 | no I, O, Q, S, X, Y)



Revision Bump

To “bump” the revision to the next available value in the current revision scheme select the file(s) and click the **Revise** button



Revision Schemes

Revision Schemes define the sequence and format of the Revision Value applied to your file

Type	Value
Delimiter	
Primary Scheme Format	Alphabetic
Secondary Scheme Format	Default Numeric
Tertiary Scheme Format	Alphabetic

Revision primary sequence values:
A
B
C
D
E
F
G
H

To get started access the Vault Settings dialog (Tools > Administration > Vault Options) and navigate to the **Behaviors** tab, “**Edit and Manage Lifecycles and Revisions**” section, and click the **Revisions...** button

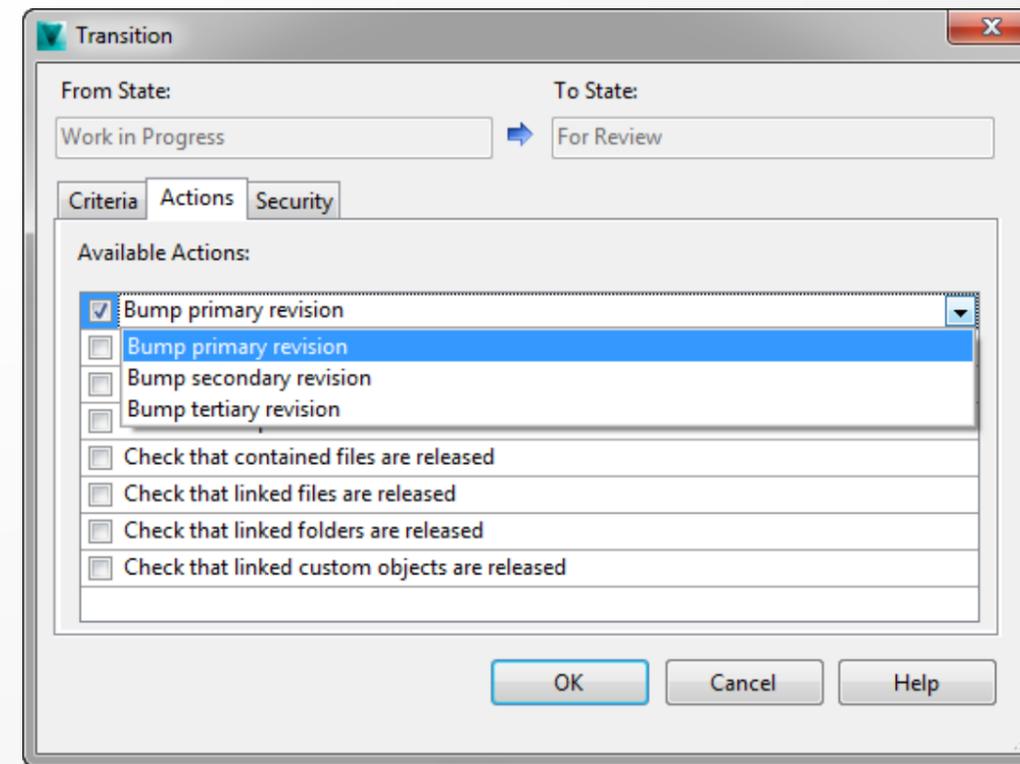
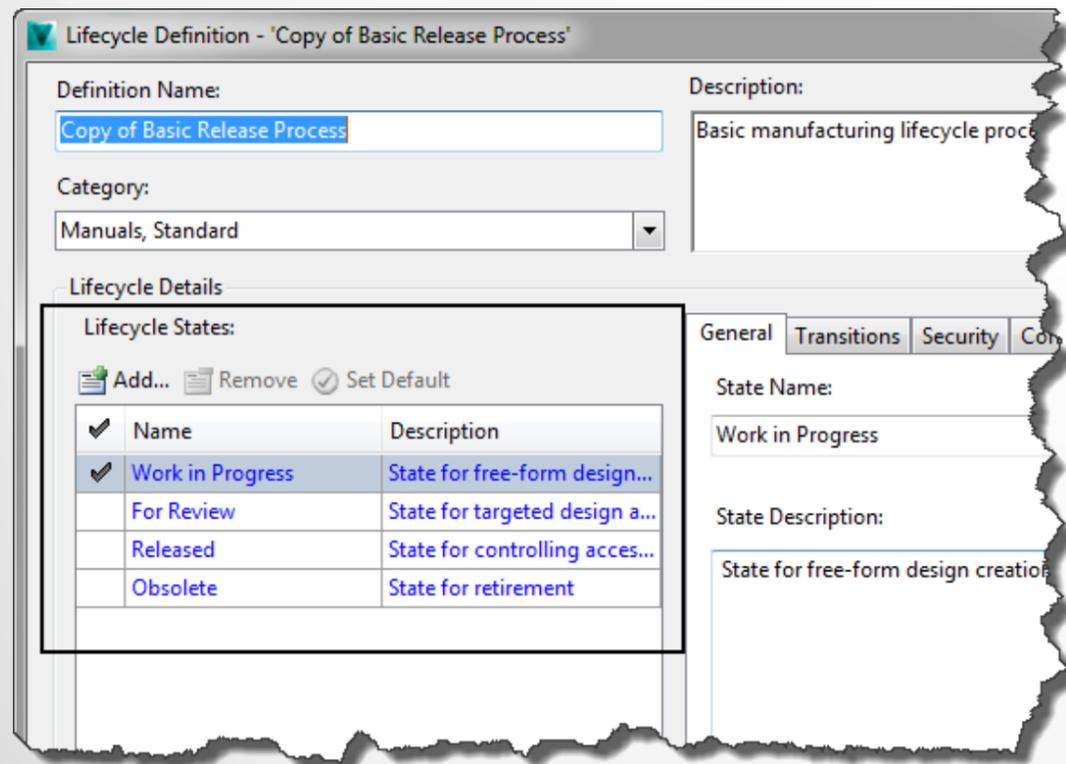
1. Name the new Revision Definition and enter a description
2. Select the Categories in which you want the new scheme to be available. This can include files and items.
3. Assign the three(3) Scheme Formats (Primary, Secondary, and Tertiary) and the Delimiter
4. If desired Scheme Format is not available, create a new Scheme Format

Revision by Using File Properties

- Any property of the selected file can be used to populate the Revision value IF the current property value fits within the Scheme Definition.
- For example I couldn't use the description if my current scheme is A, B, C.

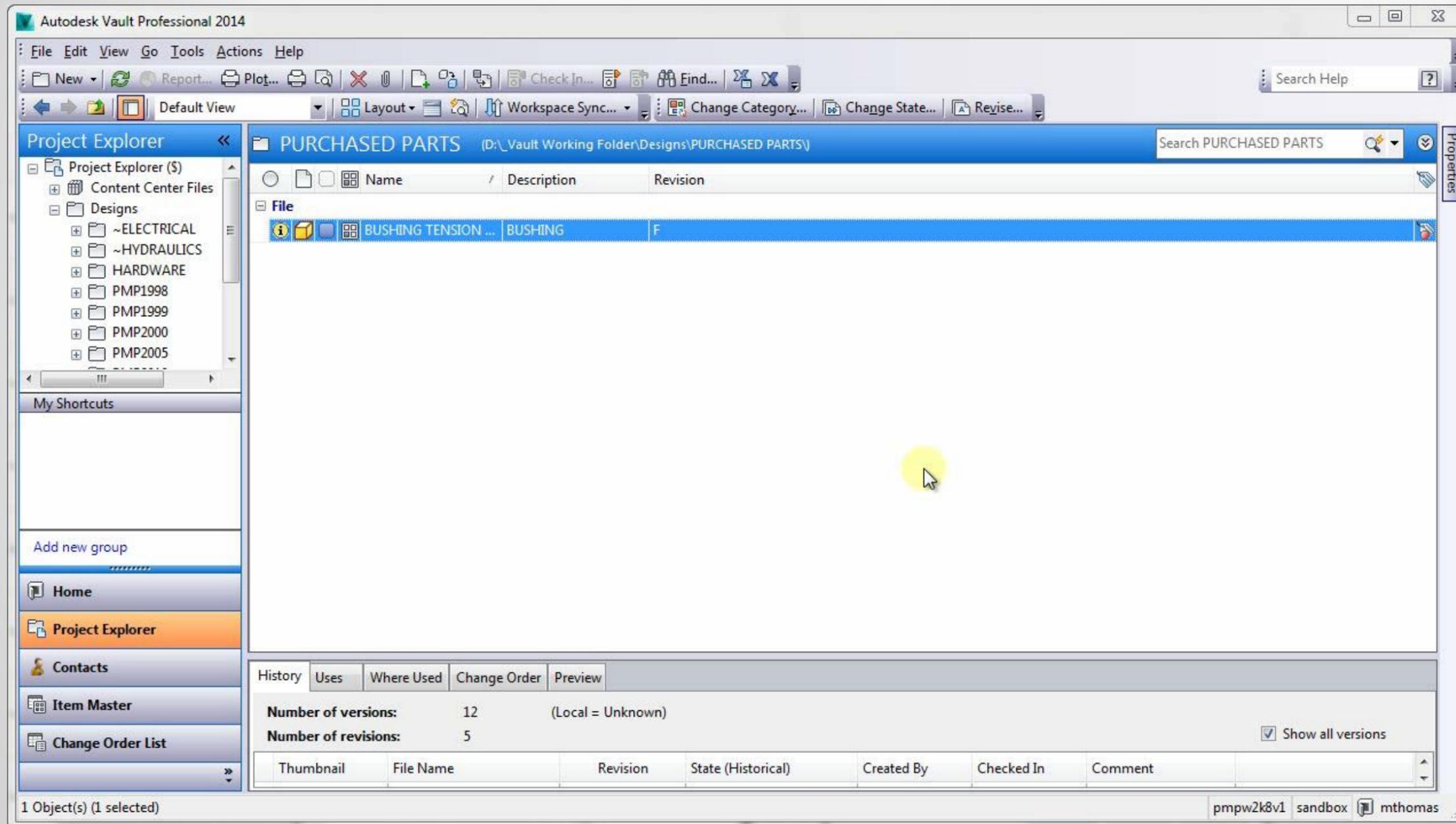
Automatic Revision Bumping

- Lifecycle **States** identify the current status of your file within the Lifecycle Definition. The **Transition** of a State determines the **Actions** that happen during the state change (like revision bump), and the **Security**, as in who can make the specific state change



Automatic Revision Bumping

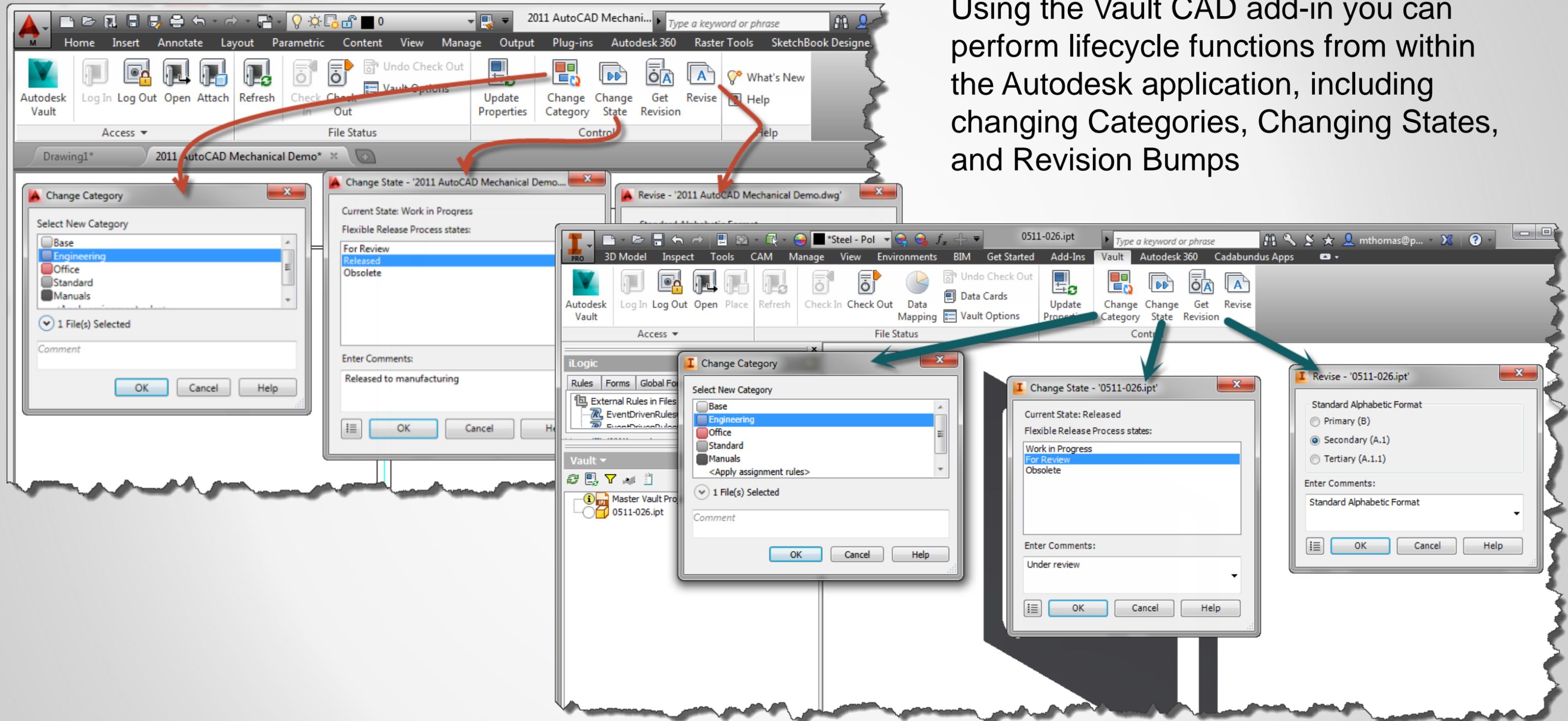
- The **Transition** of a State determines the **Actions** that happen during the state change (like revision bump)



CAD & Revisions

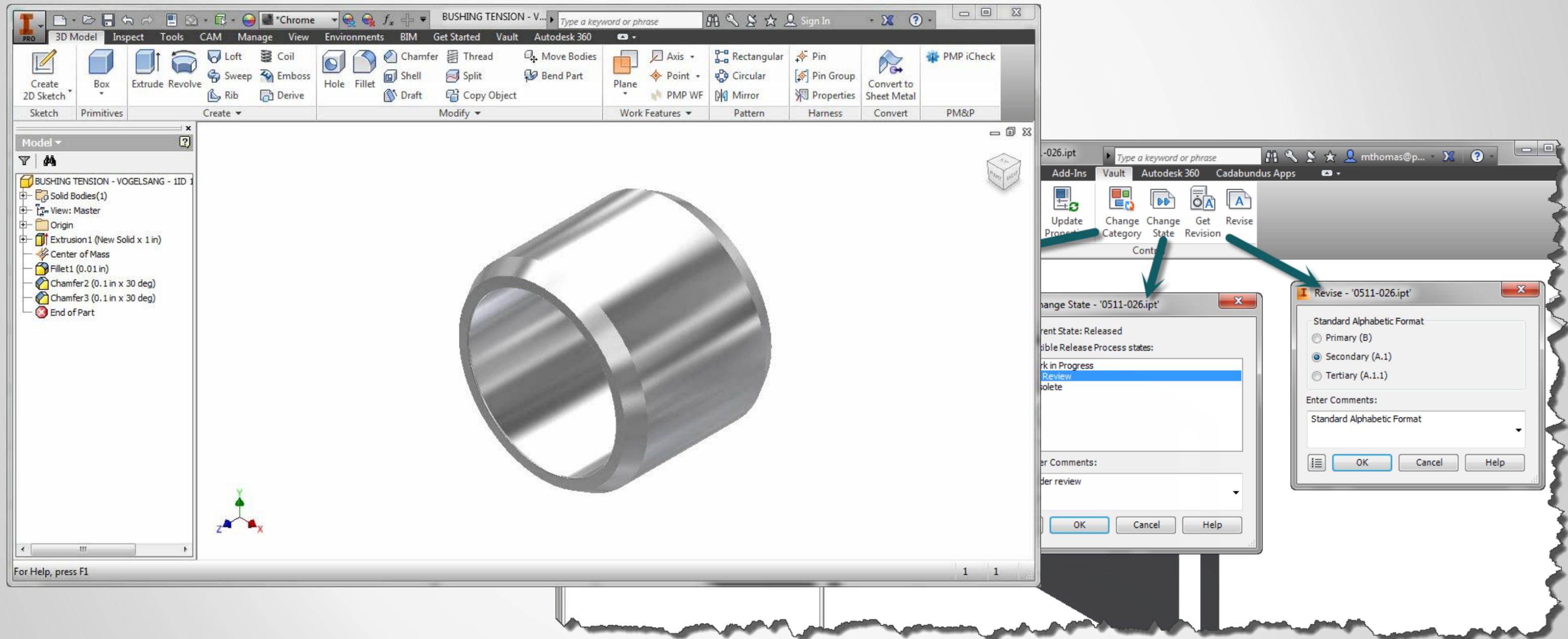
CAD & Lifecycles

Using the Vault CAD add-in you can perform lifecycle functions from within the Autodesk application, including changing Categories, Changing States, and Revision Bumps

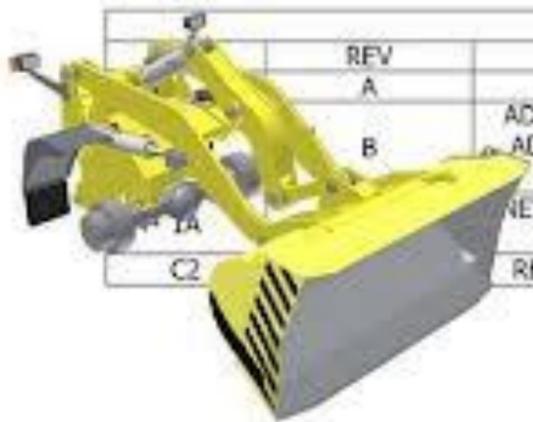


CAD & Lifecycles

Using the Vault CAD add-in you can perform lifecycle functions from within the Autodesk application, including changing Categories, Changing States, and Revision Bumps



Revision Tables



REVISION HISTORY				
REV	DESCRIPTION	DATE	APPROVED	
A	INITIAL RELEASE	05/06/2012	Allan	
B	ADDITIONAL COMPONENTS ADDED / BOM MODIFIED - LINES 2, 12, 16	07/07/2012	Jeremy	
C1	NEW SHAFT DESIGN AS PER CD100345	07/16/2012	Allan	
C2	RESIZED HYDRAULIC UNIT	11/05/2012	Allan	

Revision Tables can be configured to extract the revision information from Vault

Item

What are Items?

Like how a recipe or business card represents information and provides a method for organization and quickly locating, items represent things within our business. Items represent the components that the company manage, assemble, sell and manufacture.

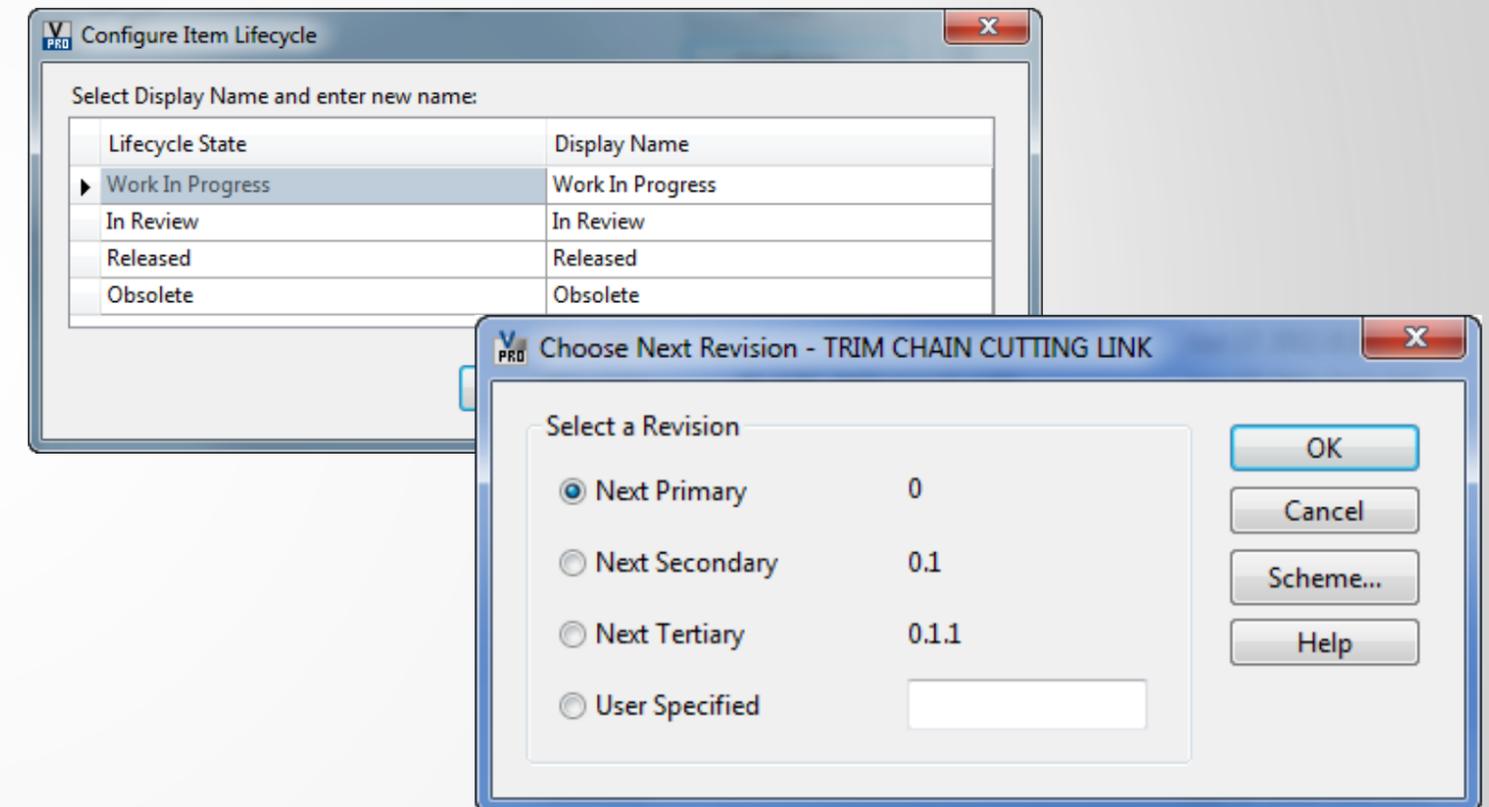
Each item is identified by its own unique item number (or sometimes referred to as part number). Items can represent a variety of things including parts and assemblies, instructional guides, consumable goods (fluids, lubricants, etc), and any related Bill of Material. Some items might be purchased, while others are manufactured internally.

Within Vault Professional, items are records stored within an item master. The item master is a master list of everything within the engineering system. Each item is assigned an unique item number (identifier) which is used to locate, edit, update, and track changes to an item.

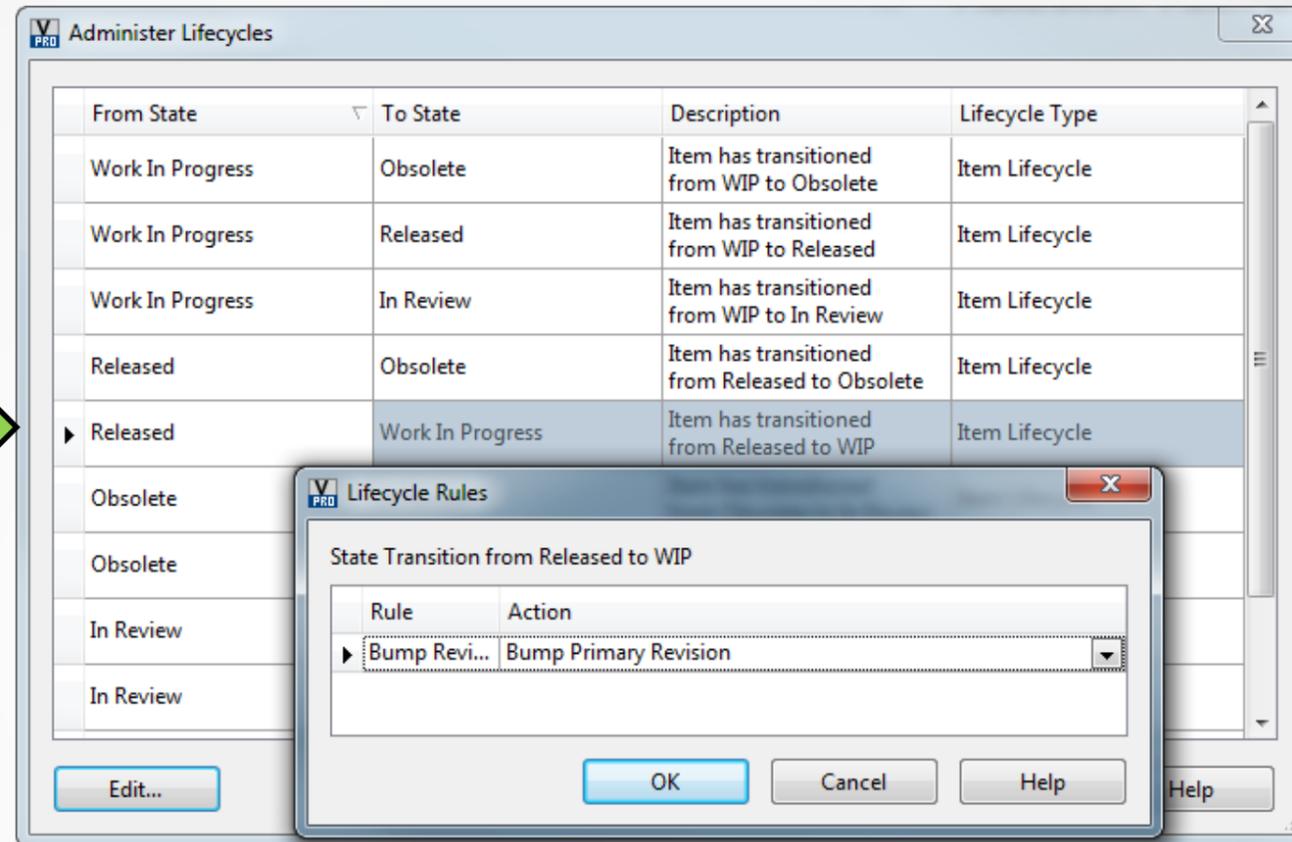
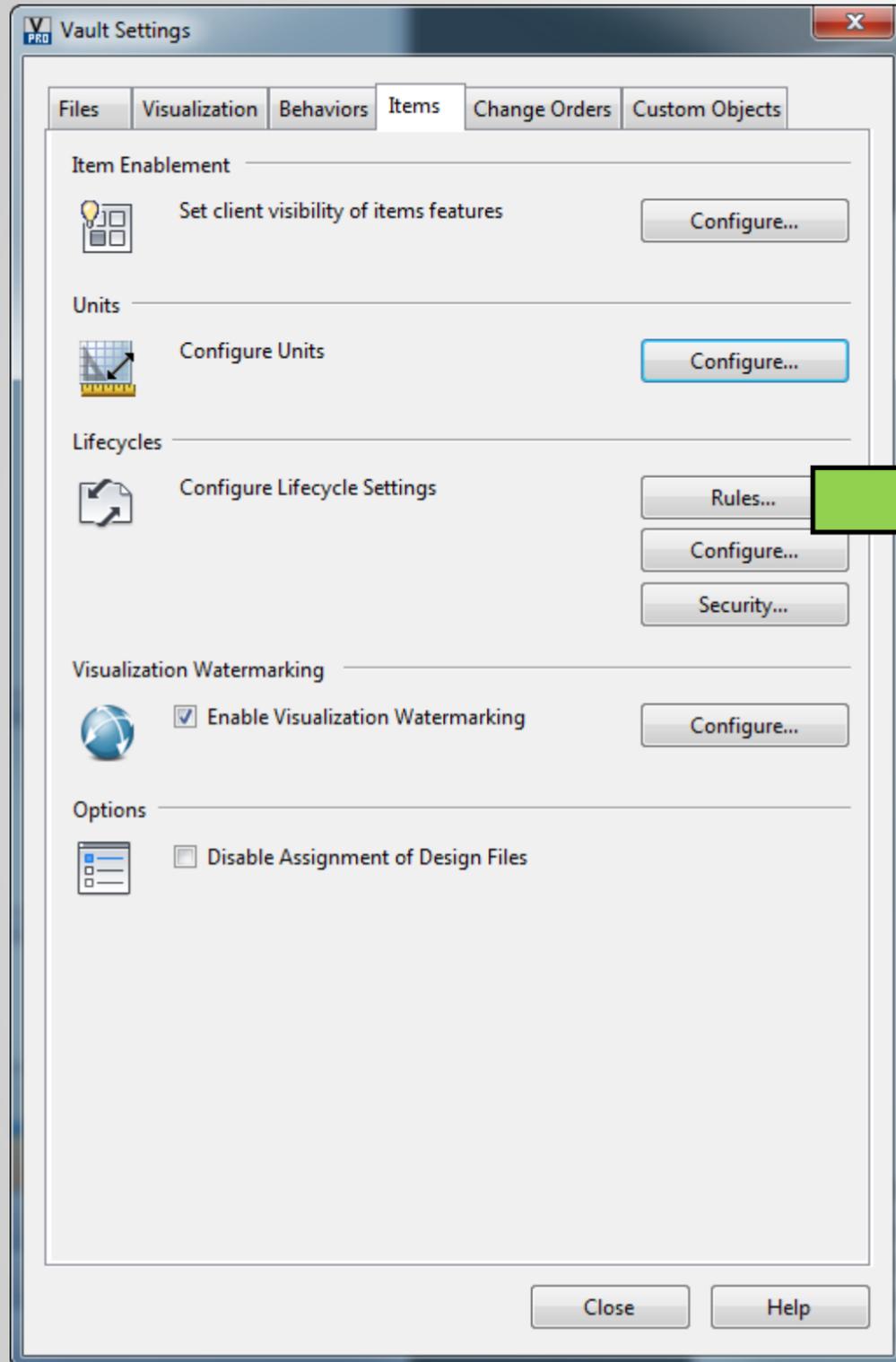
Item States & Rules

The *Item Lifecycle Rules* are used to control when the revision value of the item is automatically “bumped” and what revision level it is bumped to. Bumped simply refers to the action of automatically increasing the revision level.

Revisions are used to track the history of changes applied to an item. To adjust the revision of the item select it, right-click, and select **Change Revision...**



Vault Settings - Items

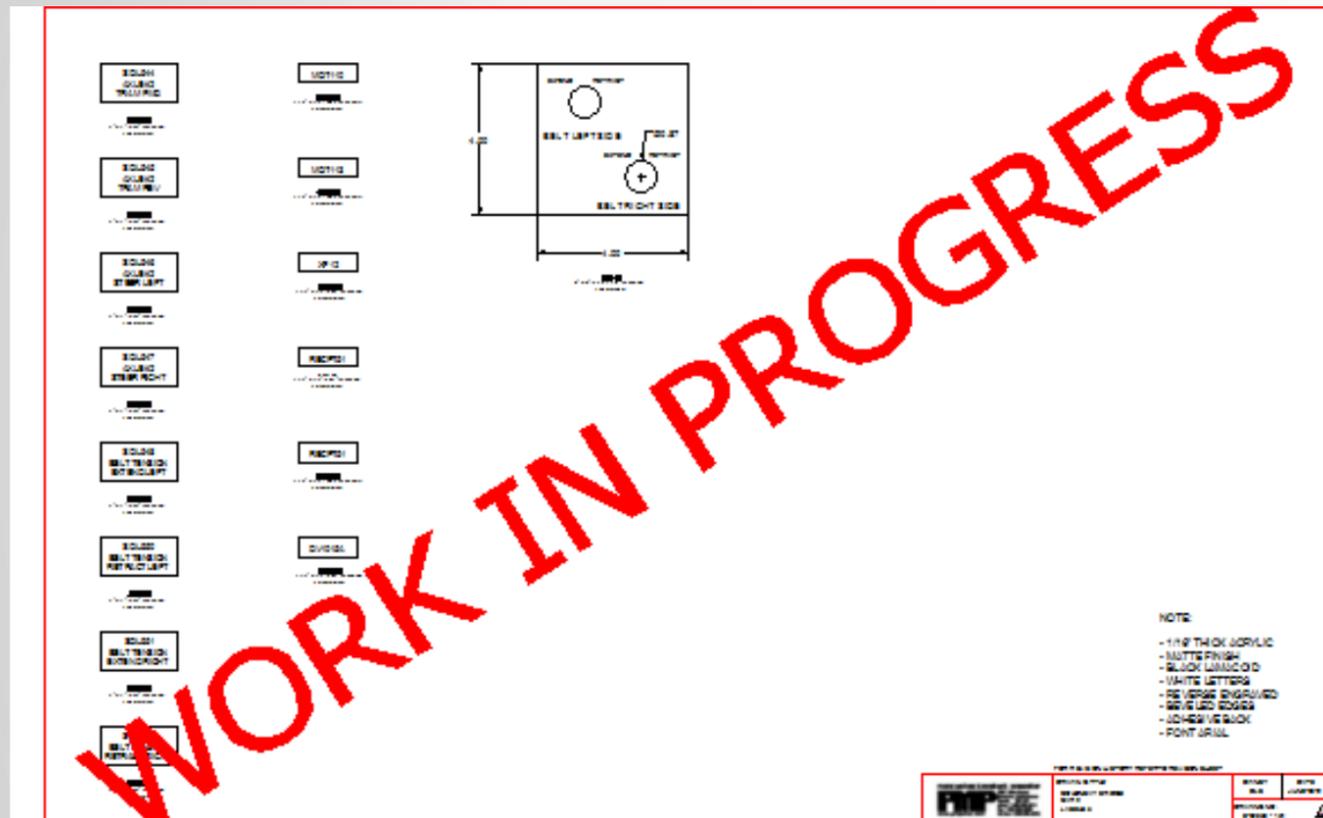


Item Lifecycle Rules

- Control when the revision value of the item is automatically “bumped” and what level is bumped.

Watermarks

When viewing the files associated to the Item Vault can be configured to display a watermark on the associated DWF(x) Visualization





Files vs. Items

Should I use Items? Ask yourself these questions....

1. Do I need to deliver data to a downstream application, like MRP, ERP, PLM, etc, etc?
2. Do non-engineering or non-cad people need access to data about my parts and assemblies? Possibly manipulate Bill Of Material data?
3. Do I want a method to manage revisions? And control what downstream users see of my data?
4. Do I want to manage CAD AND non-CAD things?
5. Do I want to release data locking it from access?
6. Do I want to use Change Orders to control and track revisions?

Lifecycles – Files vs. Items

Autodesk Wiki...

- *“A lifecycle definition is an engine that can be configured to automatically assign security, behaviors, and properties to Vault contents based on where the content is in the life of the design process. “*
- *“A lifecycle definition uses states to identify the content's status in the lifecycle. Changing the lifecycle state of a file enforces certain lifecycle behaviors configured by the Vault administrator”*

File lifecycles and Item lifecycles do NOT mix

You want to use one or the other but not both...

- If you release the item it will automatically lock the file
- If you release the file this will NOT release the item. If you subsequently release the item when you put it back into WIP it will NOT WIP the file.

- File revisions and Item revisions are NOT tied together

Lifecycles – Files vs. Items

Item's are Released

- Files remain in the Base category and their state never changes
- Item Lifecycles are used which will lock the file preventing changes
- The revision is controlled by the Item
- Change Orders are completed on the Item NOT the file

File's are Released

- Items are never released, remain in the WIP state
- Files categories are used and their state controls the lifecycle
- The revision is controlled by the file
- Change Orders are completed on the files NOT the item
- The item master is used solely for the creation of items and their BOM for export

“To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science.”

- Albert Einstein

Questions?

Choosing the right lifestyle with Autodesk Vault Lifecycles PL1714

Mike Thomas

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