

# Choosing the right lifestyle with Autodesk Vault Lifecycles PL1714

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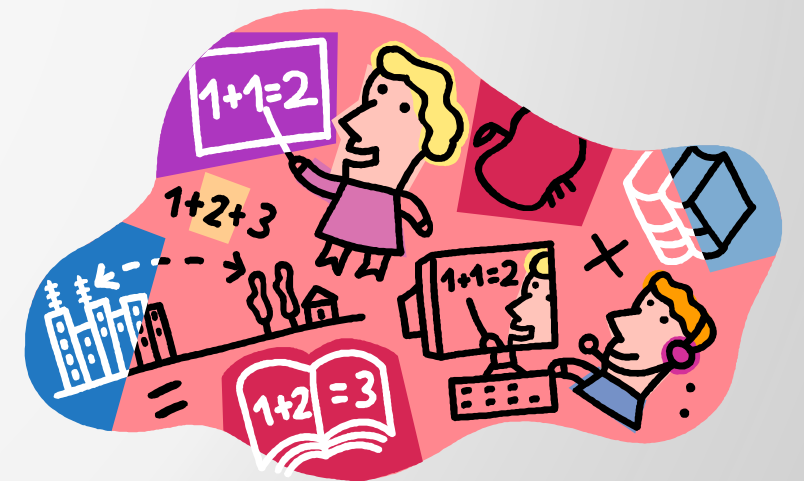
# Class summary

To move past the basics of Autodesk Vault software into the area of drawing revisions, approvals, security, and advanced property management, you need to deal with lifecycles. In this class, we look at Vault lifecycles from both a file side and an item side and help you decide which the best course of action is. We configure Vault lifecycles and discuss how they are used in the revision process and how they set the rules for state changes.

# Key learning objectives

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

- Configure lifecycle definitions
- Apply state changes
- Manage revisions
- Apply security settings and downstream usage Learning Objective



# About Me

- Live just outside Saskatoon, SK Canada
- My 3<sup>rd</sup> AU, 2<sup>nd</sup> 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

An aerial perspective of a city skyline featuring a large stadium, several skyscrapers, and a bridge crossing a river. A park with trees and a blue pond is visible in the foreground. A semi-transparent white banner is overlaid across the middle of the image.

# Autodesk Vault Lifecycles

# 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

# Vault vs. Vault vs. Vault

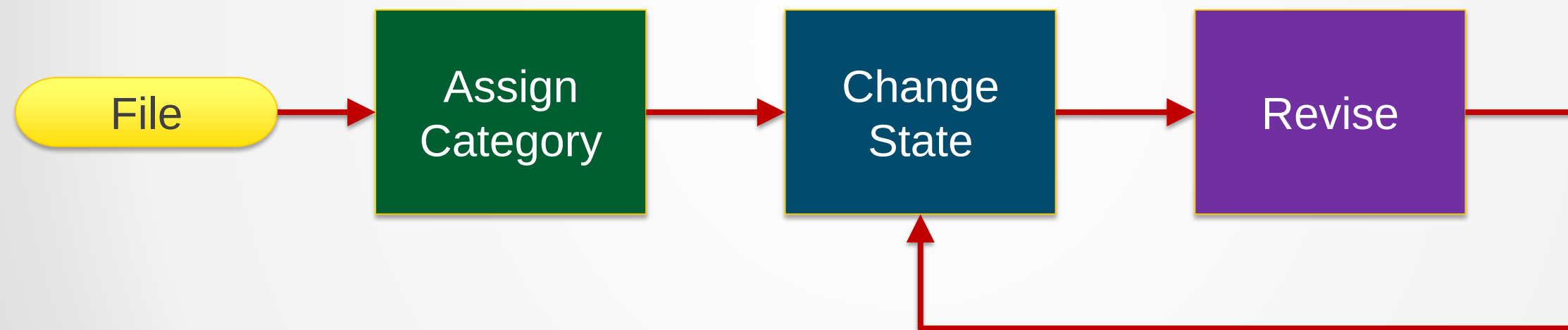
Looking at the three versions of Vault we have:

- **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

# 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.*



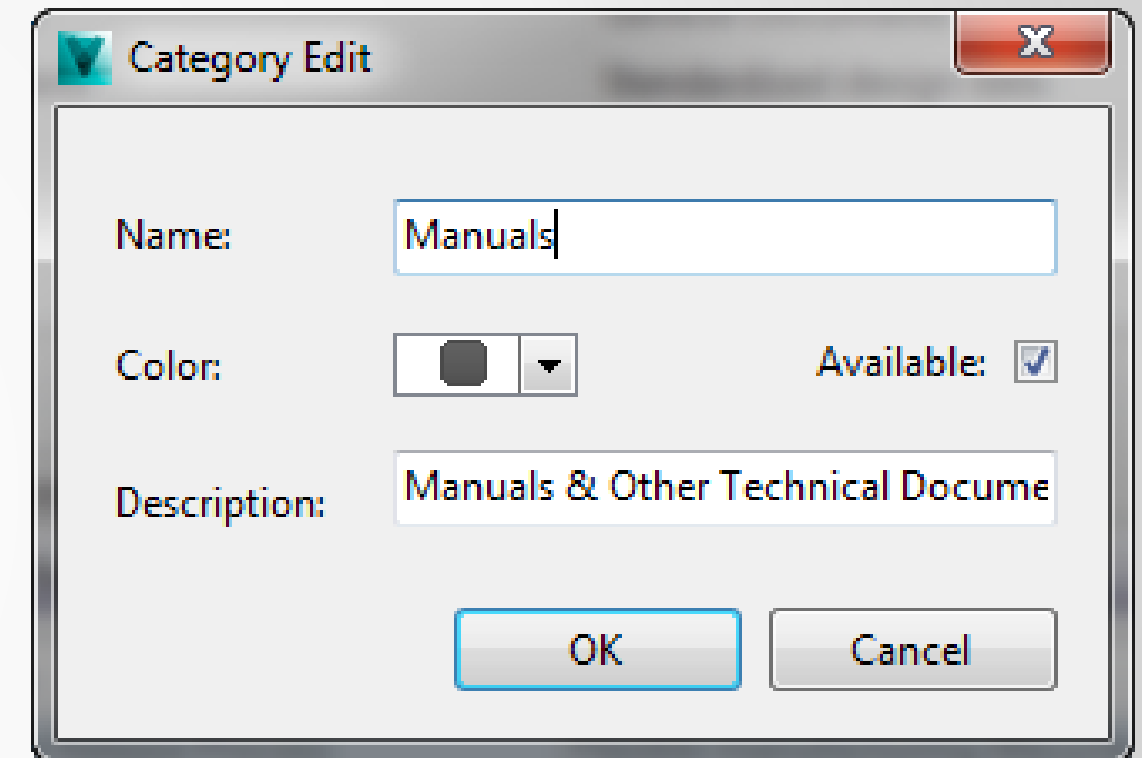
You must be at Document Manager Level 1 or Level 2 to access File Lifecycles

# What are Categories?

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

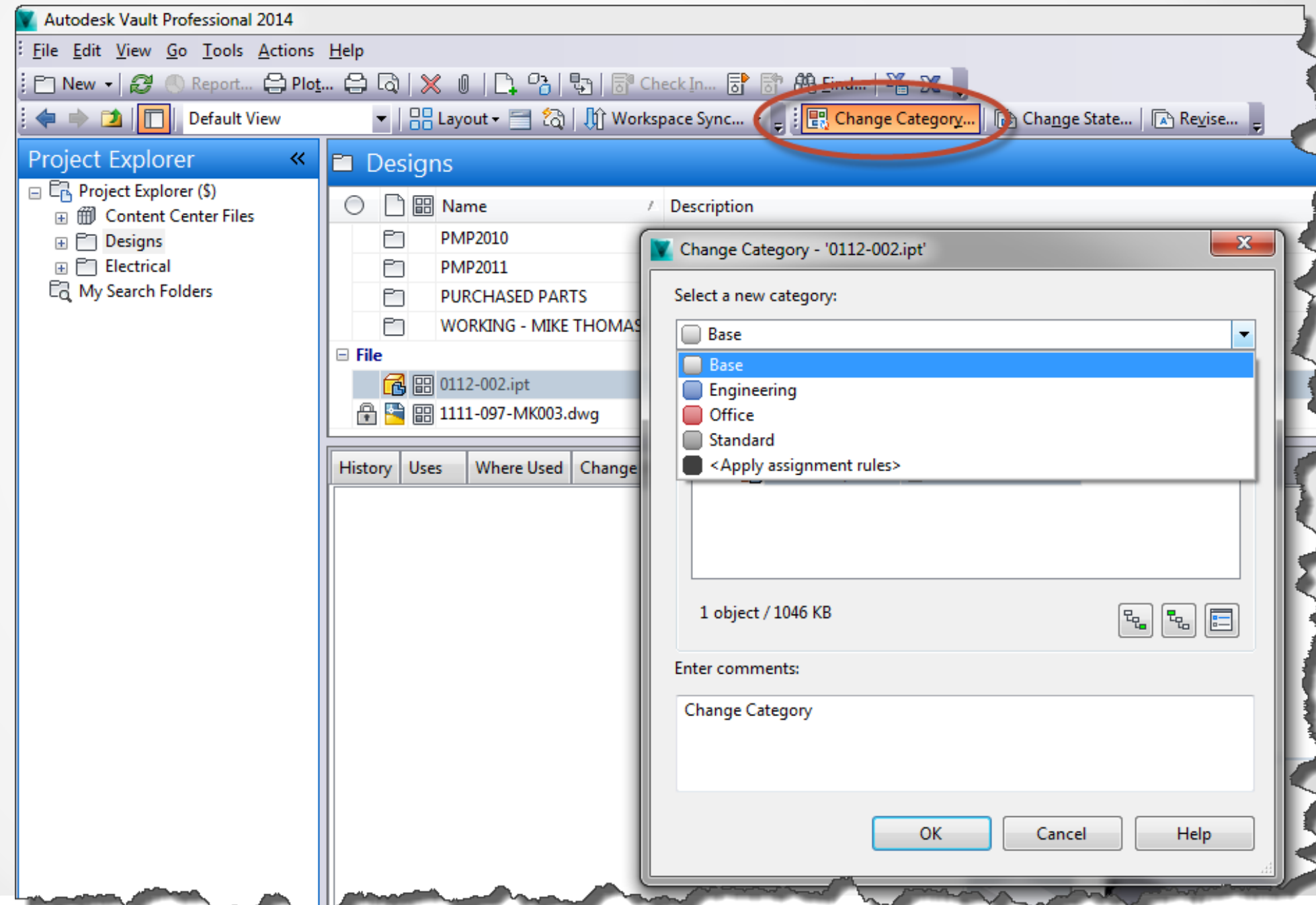
## Key Aspect of Lifecycles

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



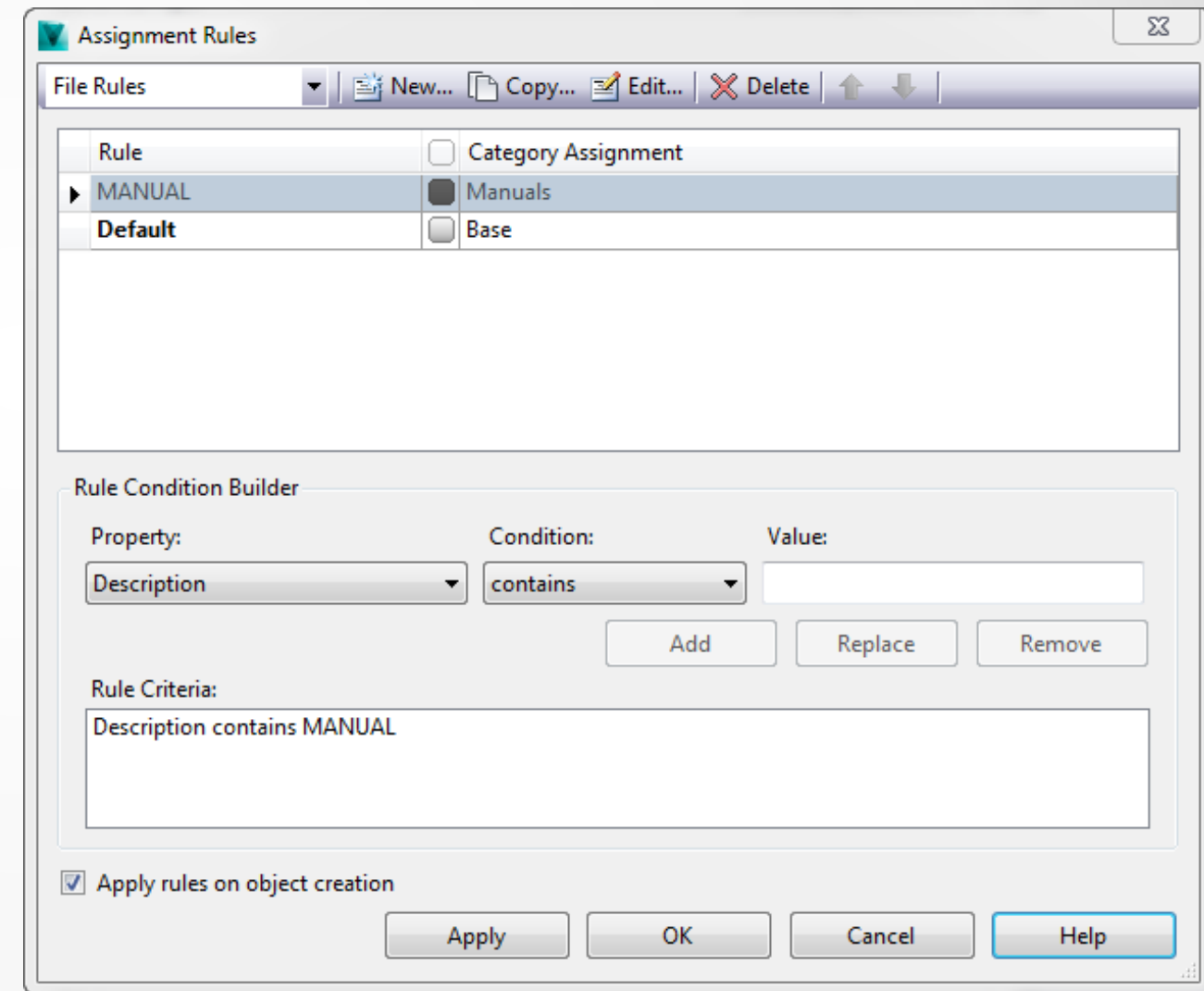
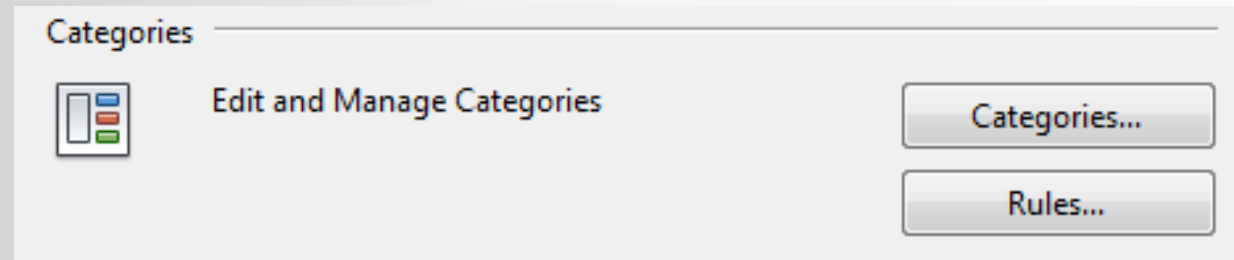
# How do I change the Category?

- select the object(s) and click the Change Category button.



# Category Rules

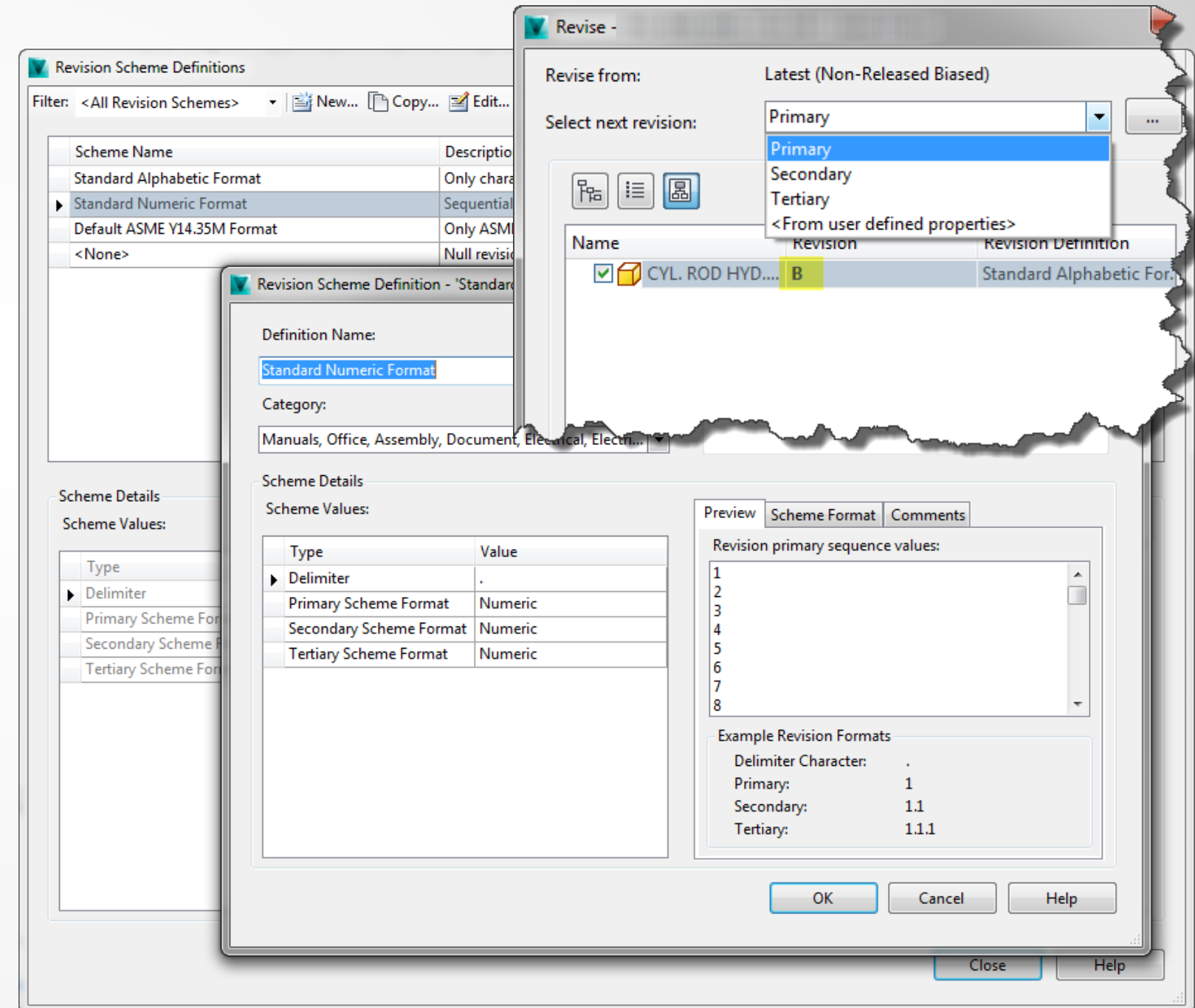
**Assignment Rules** allow you to define conditions where objects are automatically assigned to the appropriate category based on the objects properties



# Revisions

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

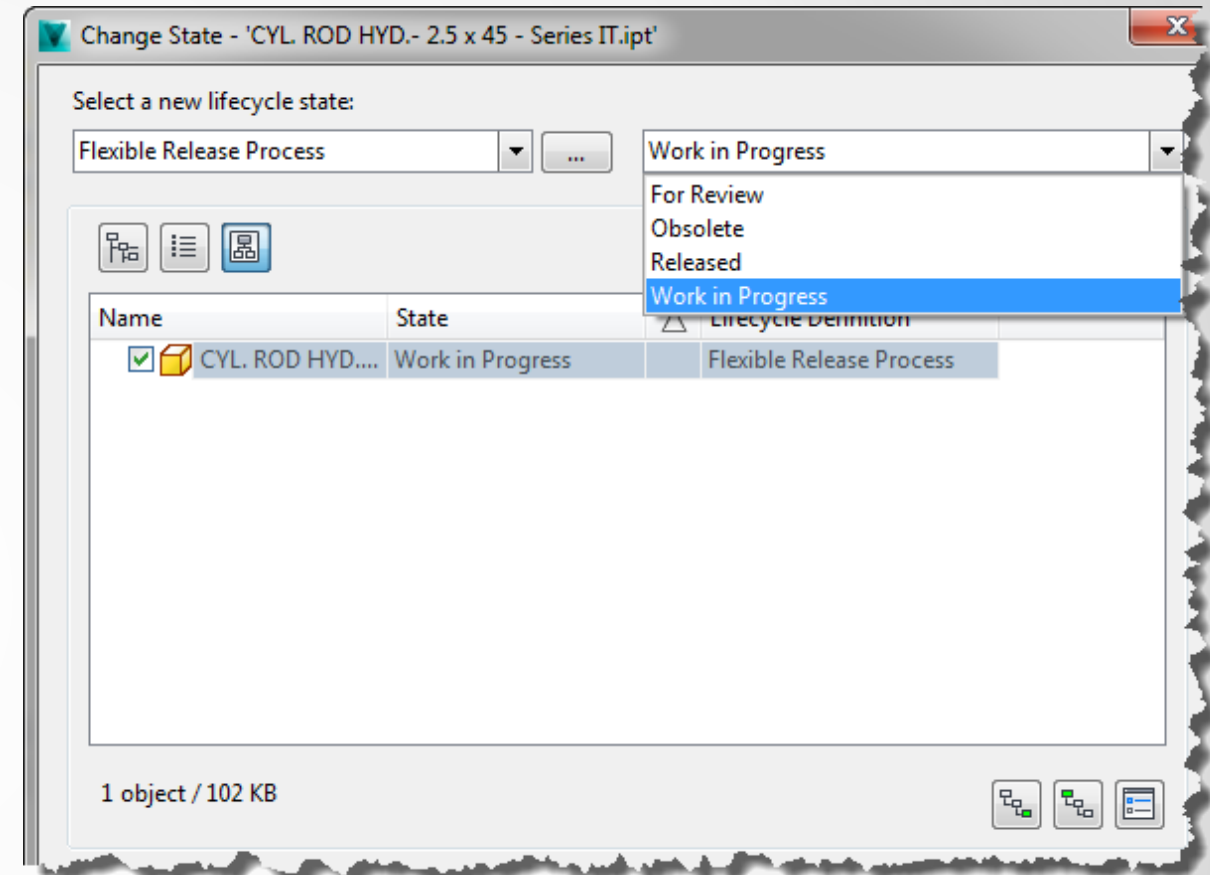
“**Revise**” your file to BUMP the revision



# States

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.

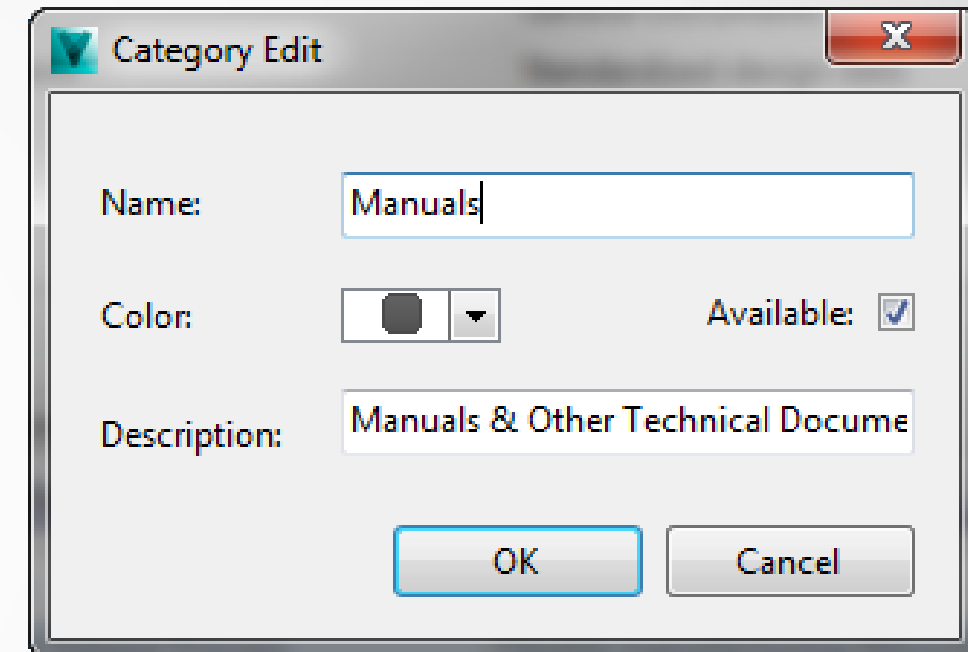
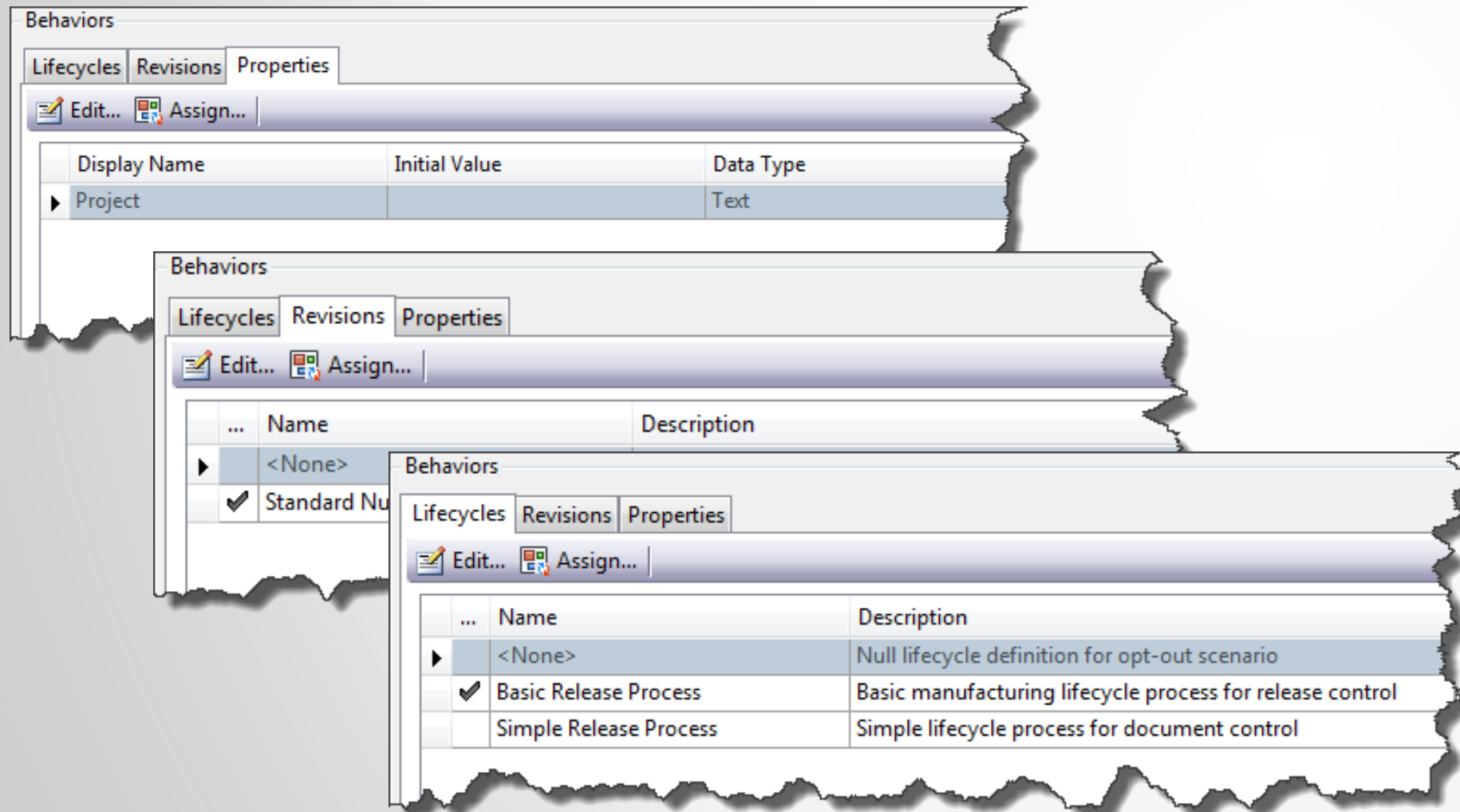




# Configuring Lifecycles

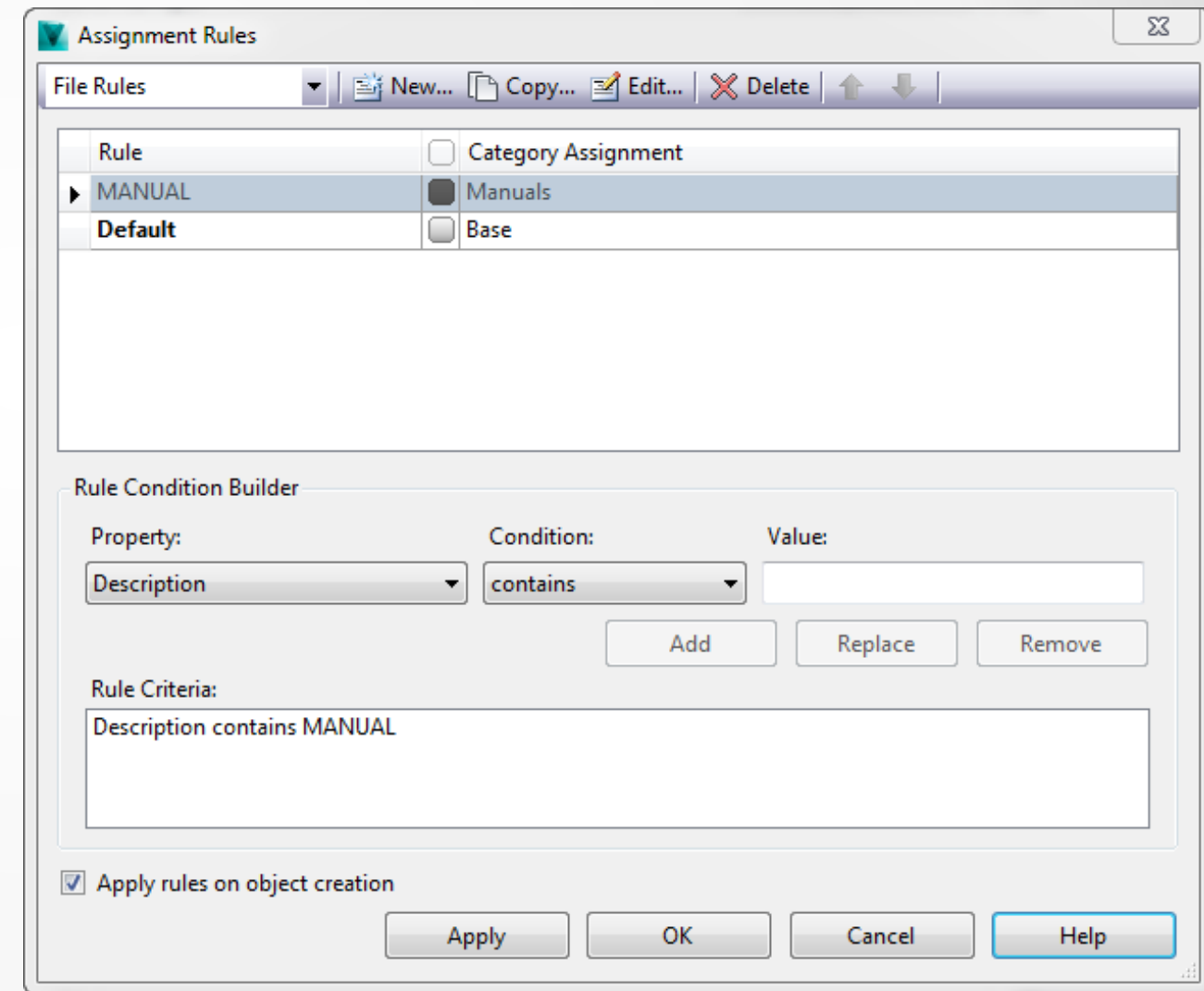
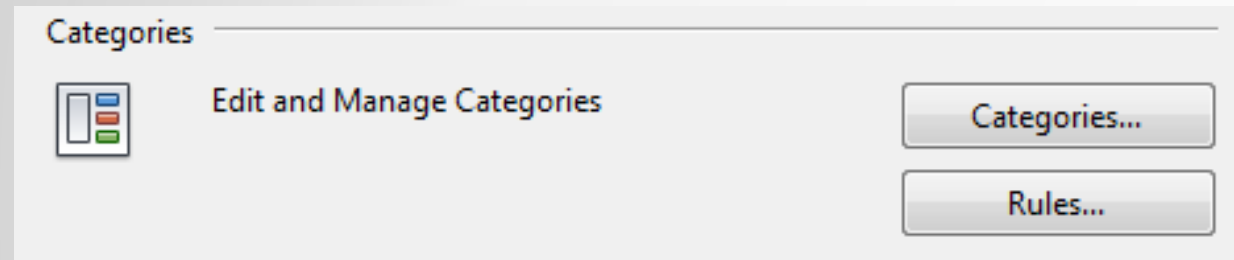
# Creating & Editing Categories

1. Assign the Name, Colour, and Description
2. Assign the Properties
3. Assign the Revision Schemes
4. Assign the Lifecycle States



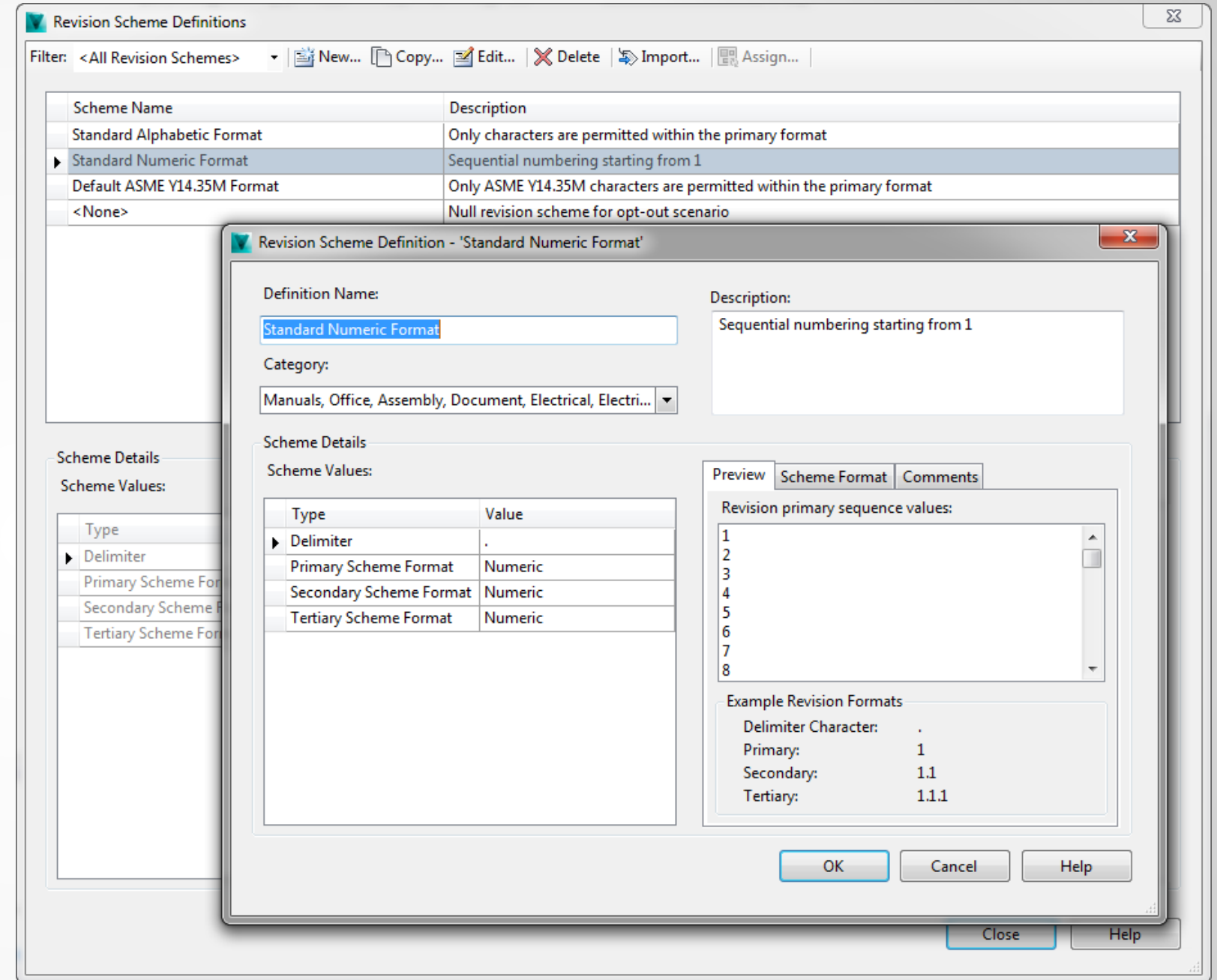
# Category Rules

**Assignment Rules** allow you to define conditions where objects are automatically assigned to the appropriate category based on the objects properties



# Revisions

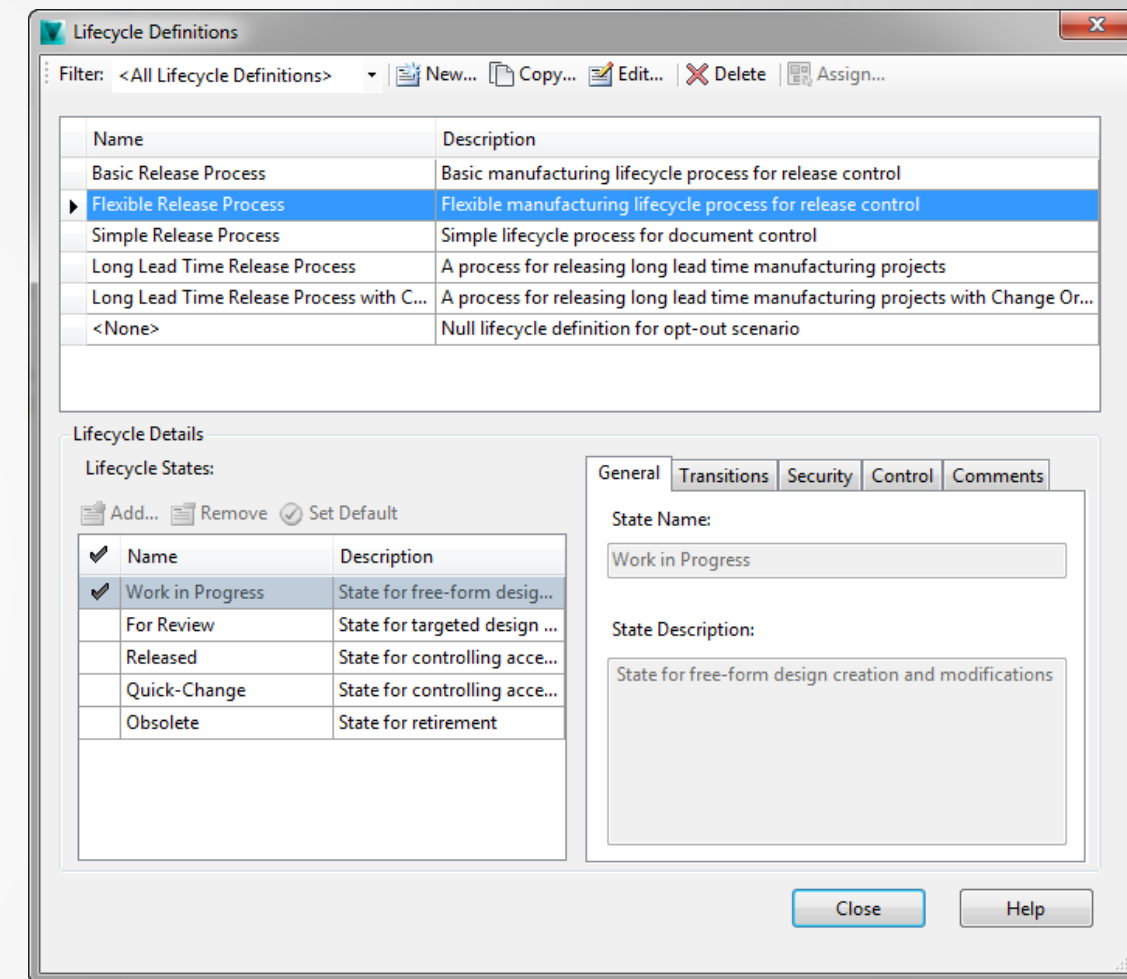
**Revision Schemes** define the sequence and format of the Revision Value applied to your file



# Lifecycle Definitions

## Autodesk's help describes Lifecycle Definitions as:

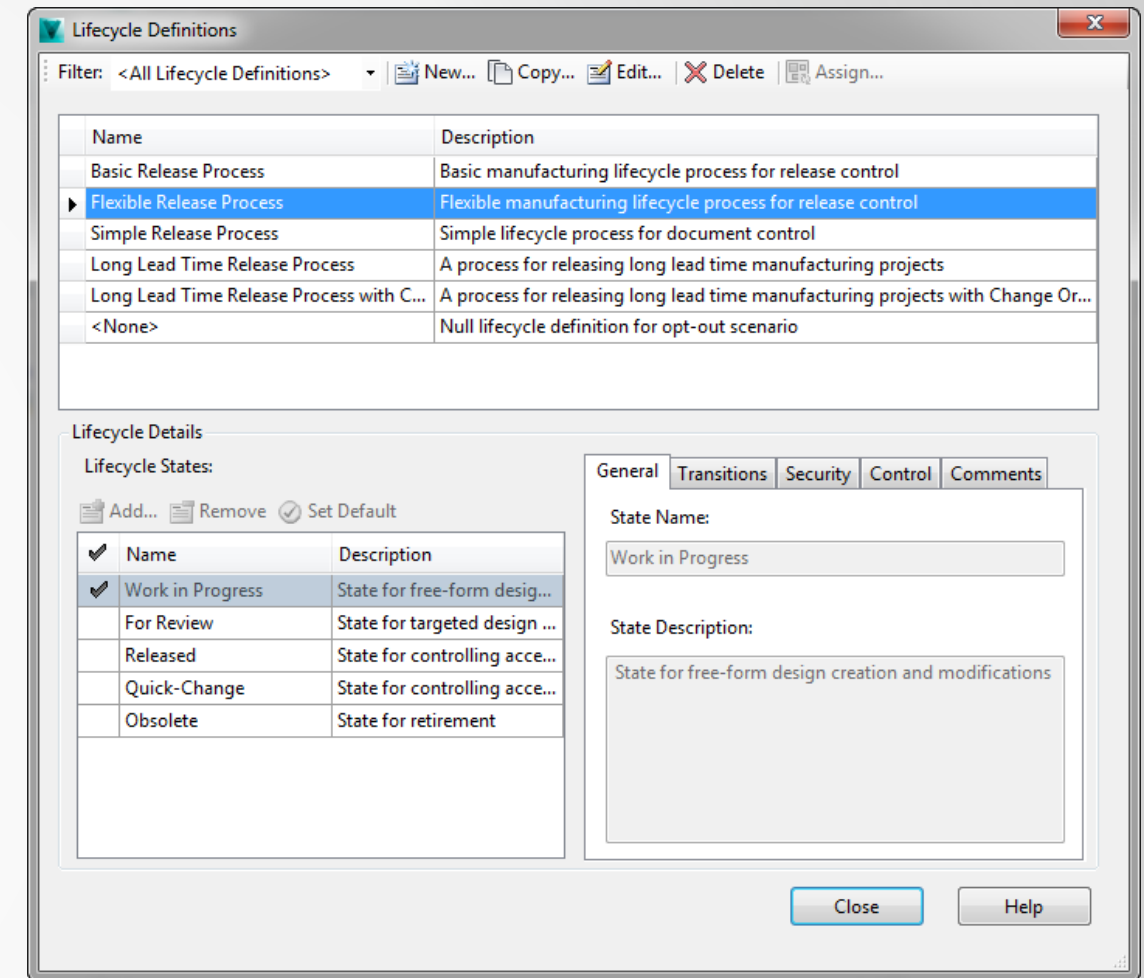
*“A lifecycle definition is an engine that can be configured to automatically assign security, behaviors, and properties to Vault objects based on where the object is in the life of the design process. This functionality allows you to streamline your work environment by removing the overhead involved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



# Lifecycle Definitions

## Defining States

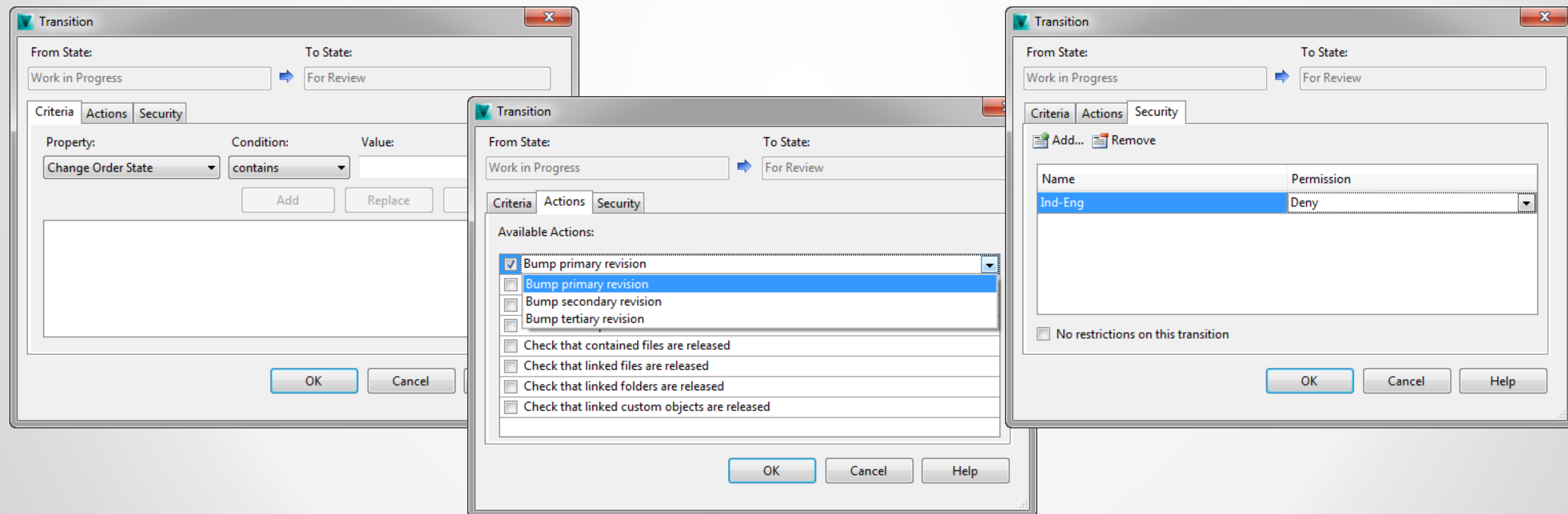
- Lifecycle states identify the current status of your file
- A good plan of action is to whiteboard your drawing / design release process and identify the key “stops” or “milestones”



# 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



# Using Lifecycles

## Files

- Check the Category and adjust as necessary Adjust the Revision level, especially when moving legacy data into Vault
- Change the State when ready to move to the next step

## Folders & Custom Objects

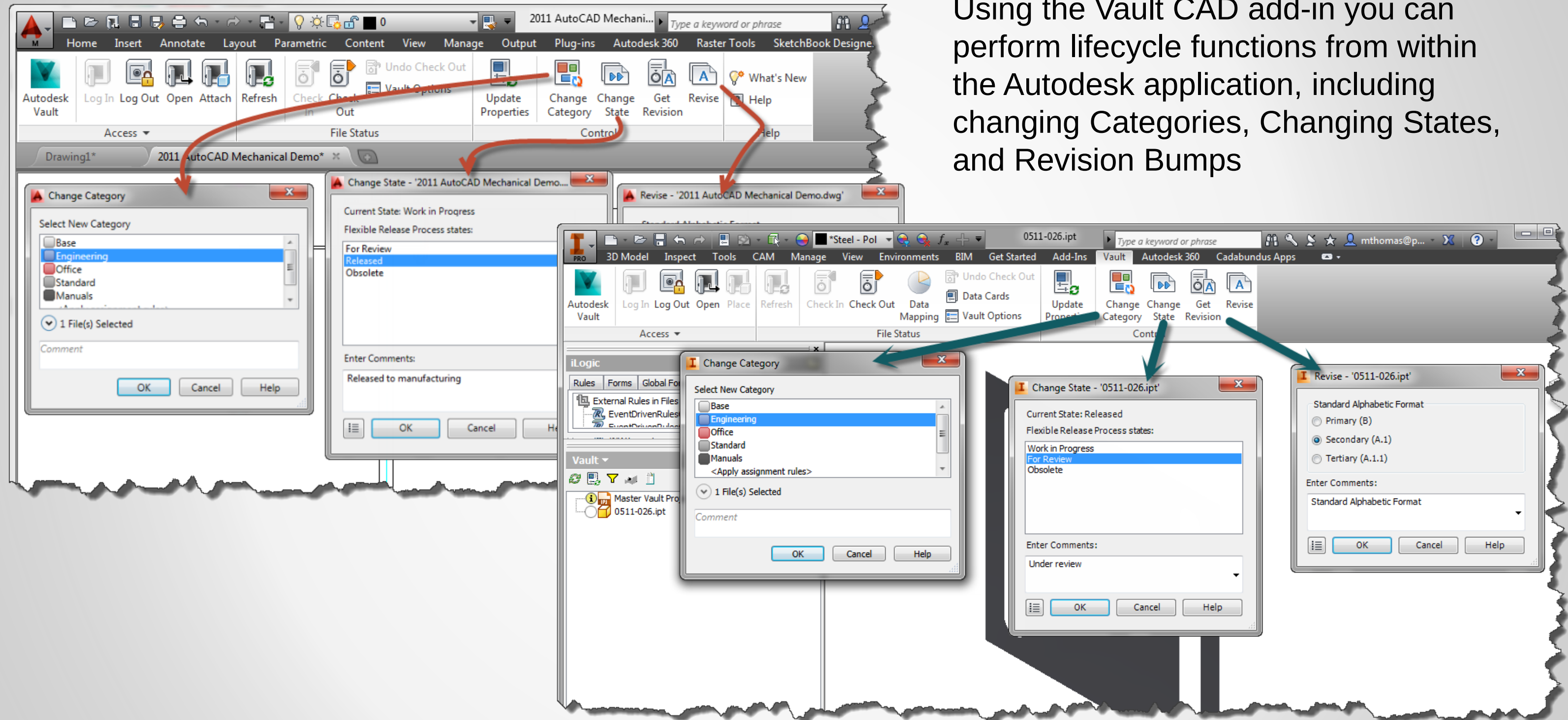
- Folders & Custom Objects are similar to Files except you cannot set the revision.
- After applying the correct Category you can adjust the state of the folder.
- The state change on a folder may force you to perform a state change on the files contained within the folder

# CAD & Lifecycles

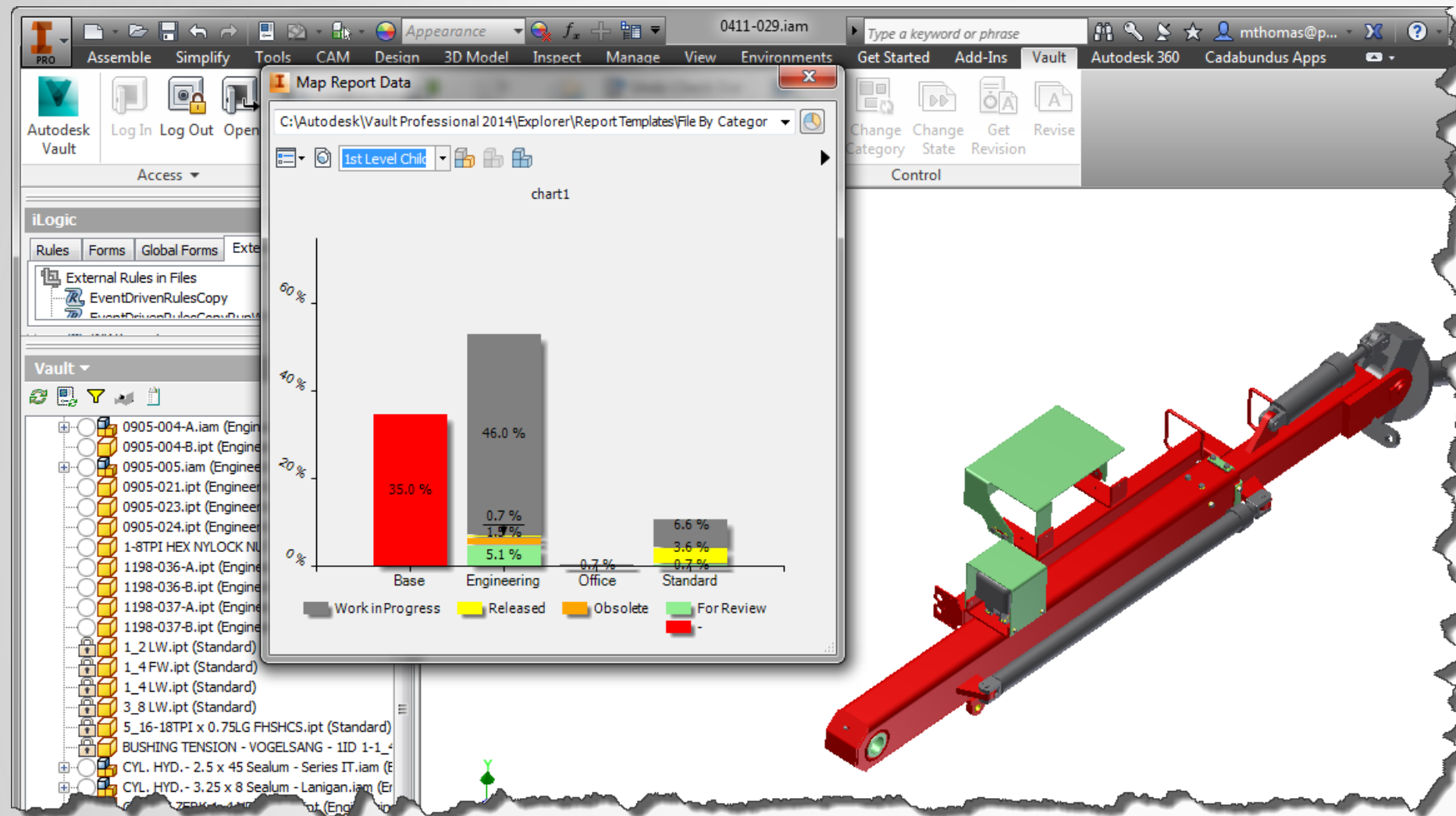
| PARTS LIST |     |                                          |                                      |
|------------|-----|------------------------------------------|--------------------------------------|
| ITEM       | QTY | PART NUMBER                              | DESCRIPTION                          |
| 4          | 1   | Wheel Holder - Lowr Guide                | Wheels                               |
| 9          | 2   | Side Wheel                               |                                      |
| 11         | 2   | Wheel                                    |                                      |
| 18         | 2   | SideWheel Bolts                          |                                      |
| 18.1       | 1   | Unbrako - 1 1/2 x 10                     | Hexagon Socket Head Cap Screw        |
| 18.2       | 2   | ANSI B18.22.1 - 1 1/2 - Regular - Type B | Plain Washer (Inch )Type A and B     |
| 18.3       | 1   | ANSI B18.2.2 - 1 1/2 - 6                 | Hex Nuts (Inch Series) Hex Thick Nut |
| 19         | 1   | Frame - V2                               |                                      |
| 19.1       | 1   | Frame, Section                           |                                      |
| 19.2       | 1   | Base - Wheels                            |                                      |
| 19.3       | 1   | Base - Bolts                             |                                      |
|            |     |                                          | Head Cap Screw                       |
|            |     |                                          | Washer                               |
|            |     |                                          | Nut                                  |

# 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

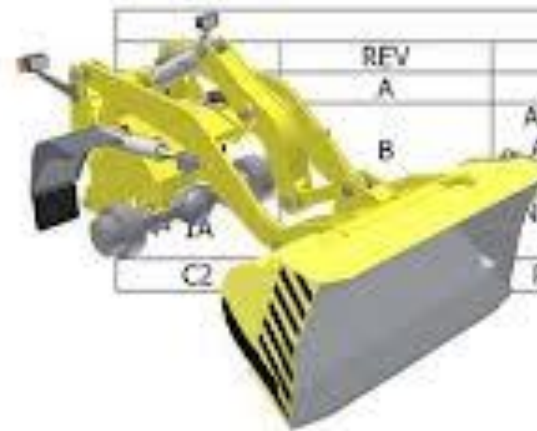


# Inventor Data Reporting



Inventor **Data Reporting** reports information on the component categories and state

# 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

The background of the slide is a detailed, close-up photograph of mechanical watch movements. It features several interlocking gears of different sizes, some with teeth and others with smooth surfaces. The components are made of metal, likely brass or steel, and are arranged in a complex, circular pattern. The lighting is soft, highlighting the textures and metallic sheen of the parts.

# Item Lifecycles

# 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 Categories

**Categories** provide a mechanism to classify items to make it easier to identify what the component belongs too.

Items Categories help manage

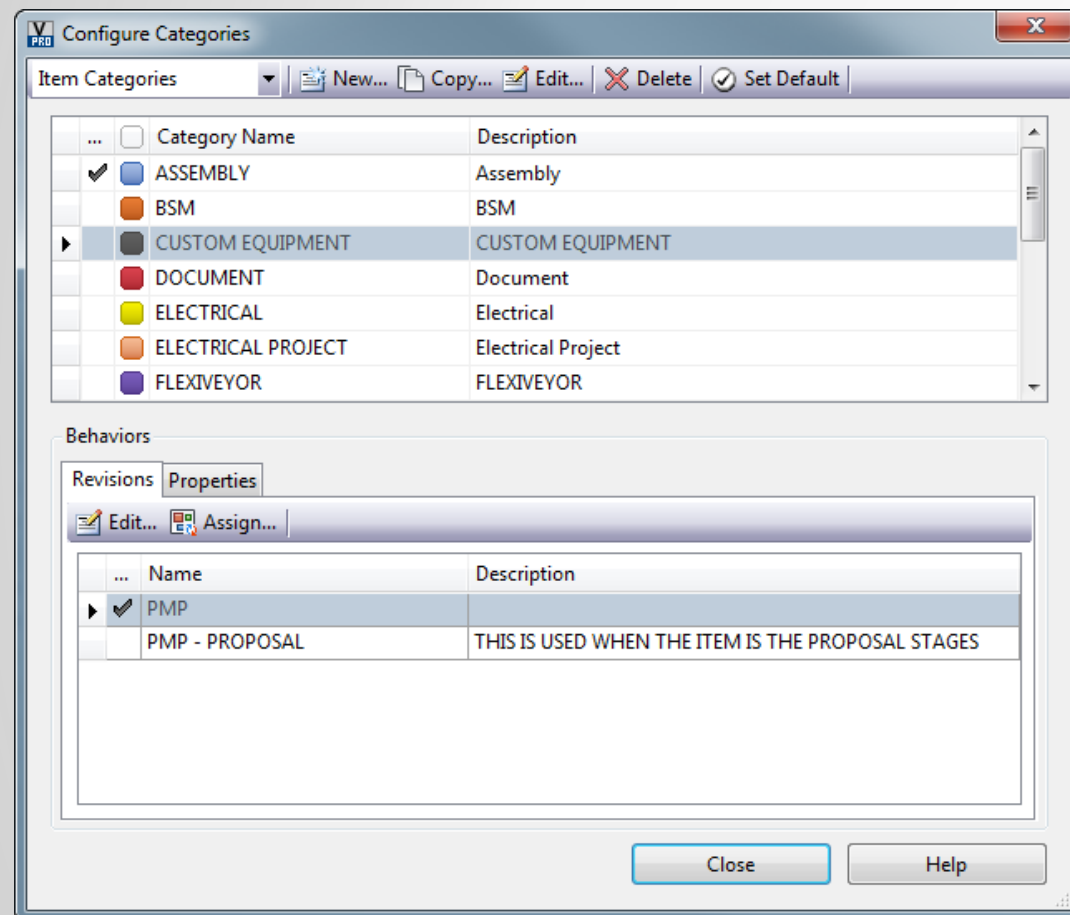
- Revisions
- User Defined Properties



**Categories do NOT control lifecycle behaviour.... that is a file-level only option**

# Item Category Configuration

**Categories** provide a mechanism to classify items to make it easier to identify what the component belongs too.



In the Vault Settings dialog box the **Behaviors** tab provides category management options

- Use the **New** button to define a new category and specify the name and colour of the category icon.
- You assign Revision Schemes to the Category making these revision schemes the only available options to items assigned to that category.

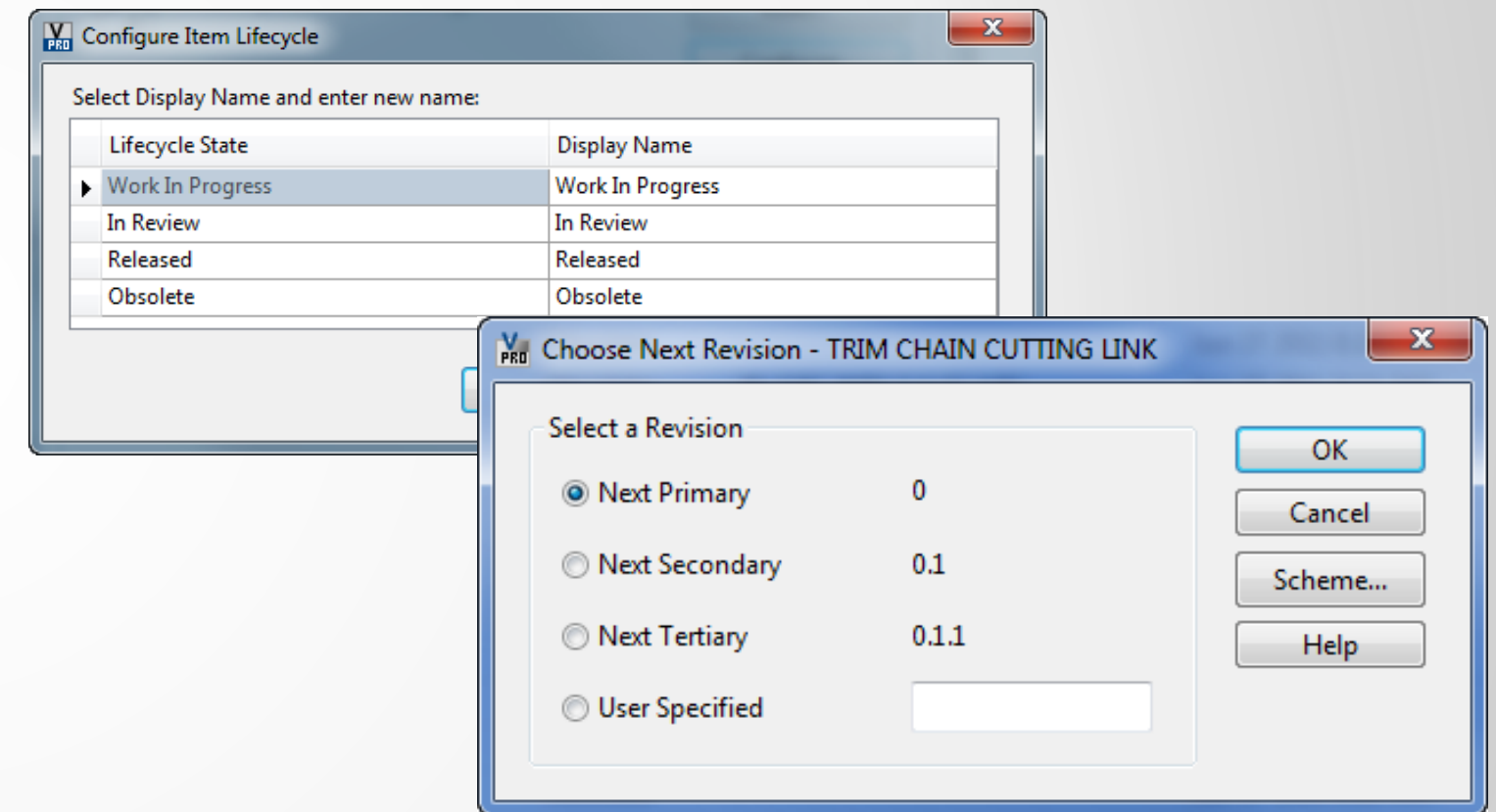
# Item Lifecycles

- The lifecycle state of an item tracks the state of the item through the manufacturing process. This shows the state from the item creation (inception) to when the item is no longer required (retirement)
  - **Work In Progress** (WIP) shows that the design is not ready for manufacturing; the attached files are still editable and the item can be updated. “Downstream” users may not have access to the item.
  - When an item is set to **In Review** it is basically waiting for the next step. Any file attached to the item can not be edited and the item can not be updated.
  - **Released** items are then available for manufacturing allowing anyone with access to the Vault to see the item.
  - You will want to set an item to **Obsolete** when it is no longer required in production. An item set to obsolete can not be updated

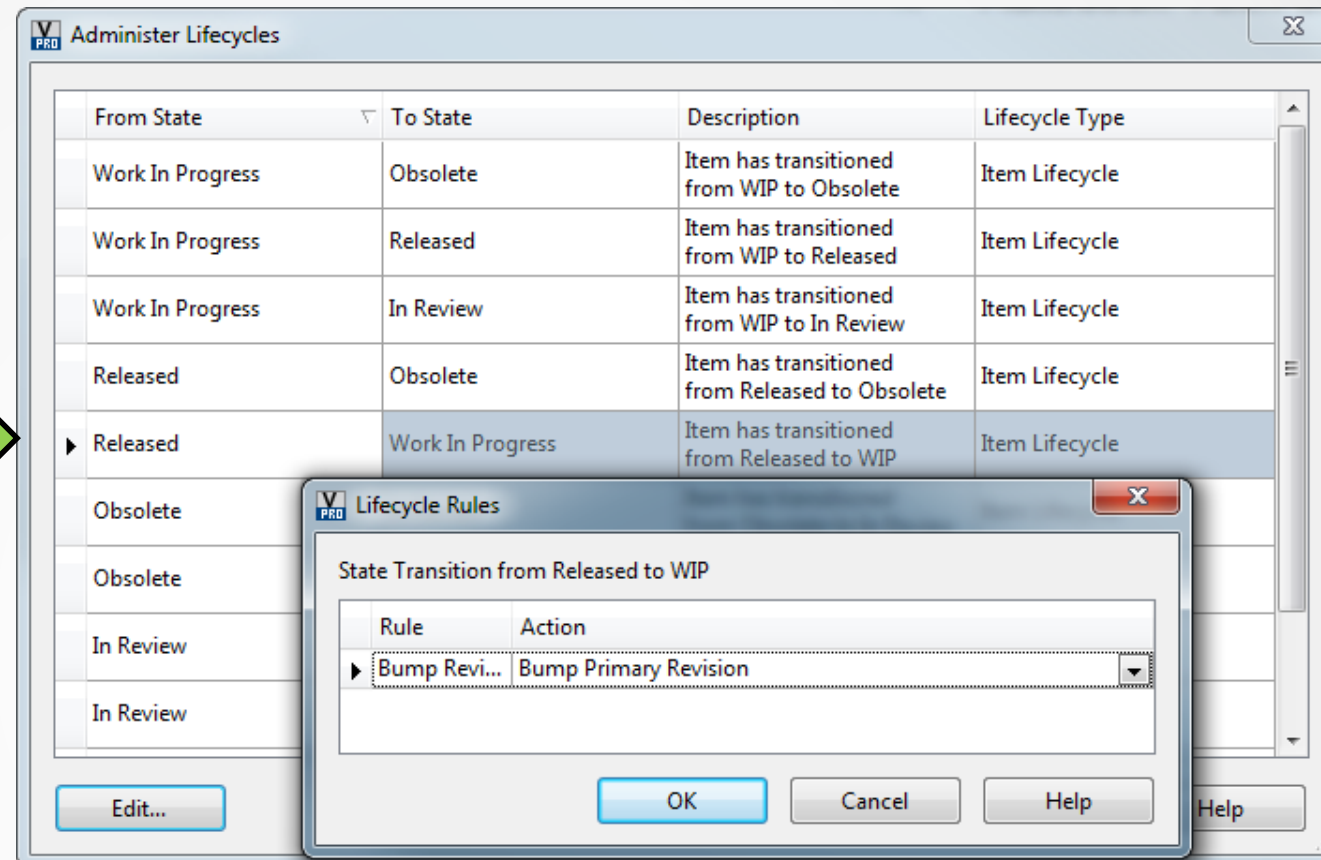
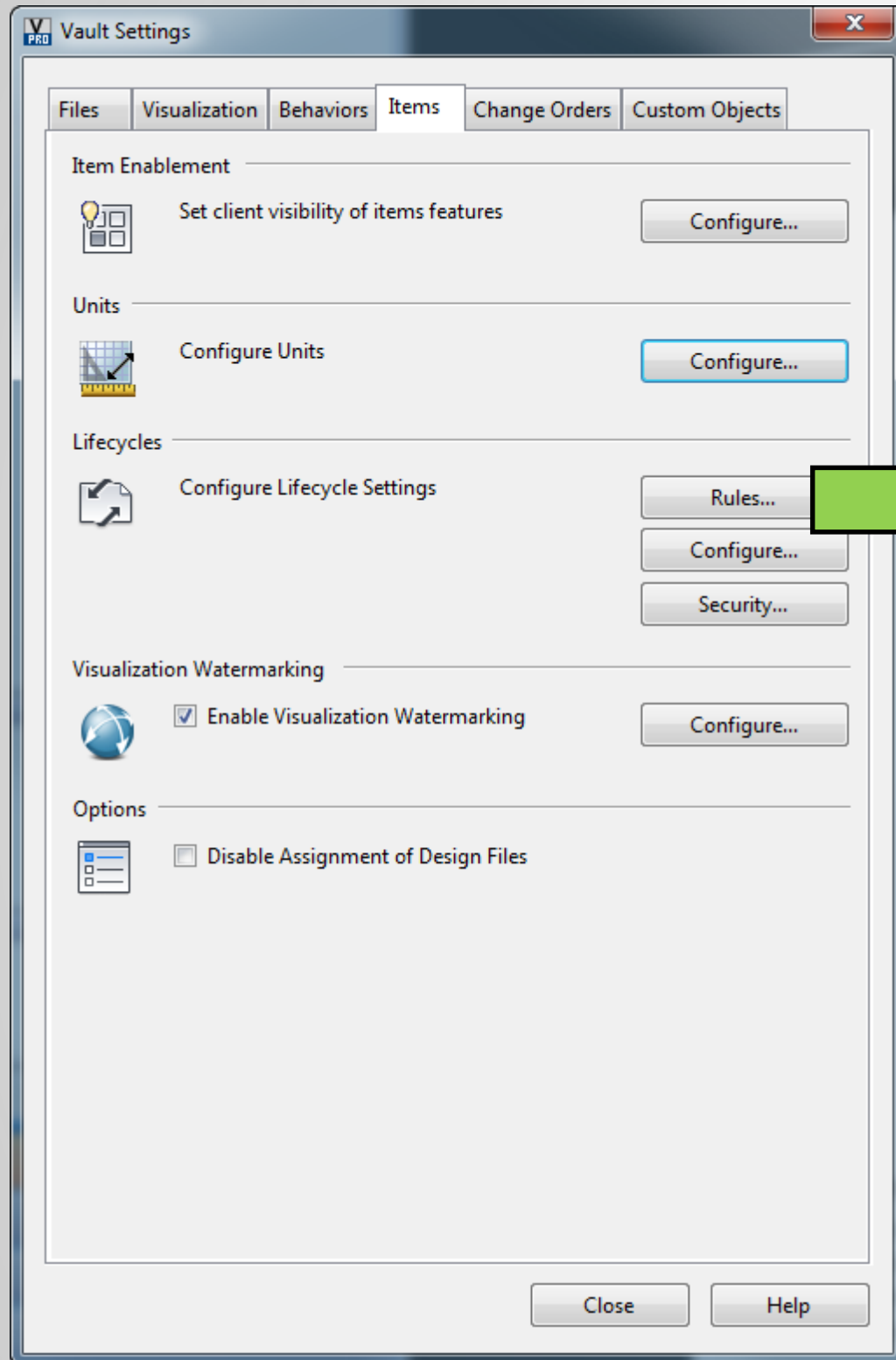
# Item States & Rules

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...**



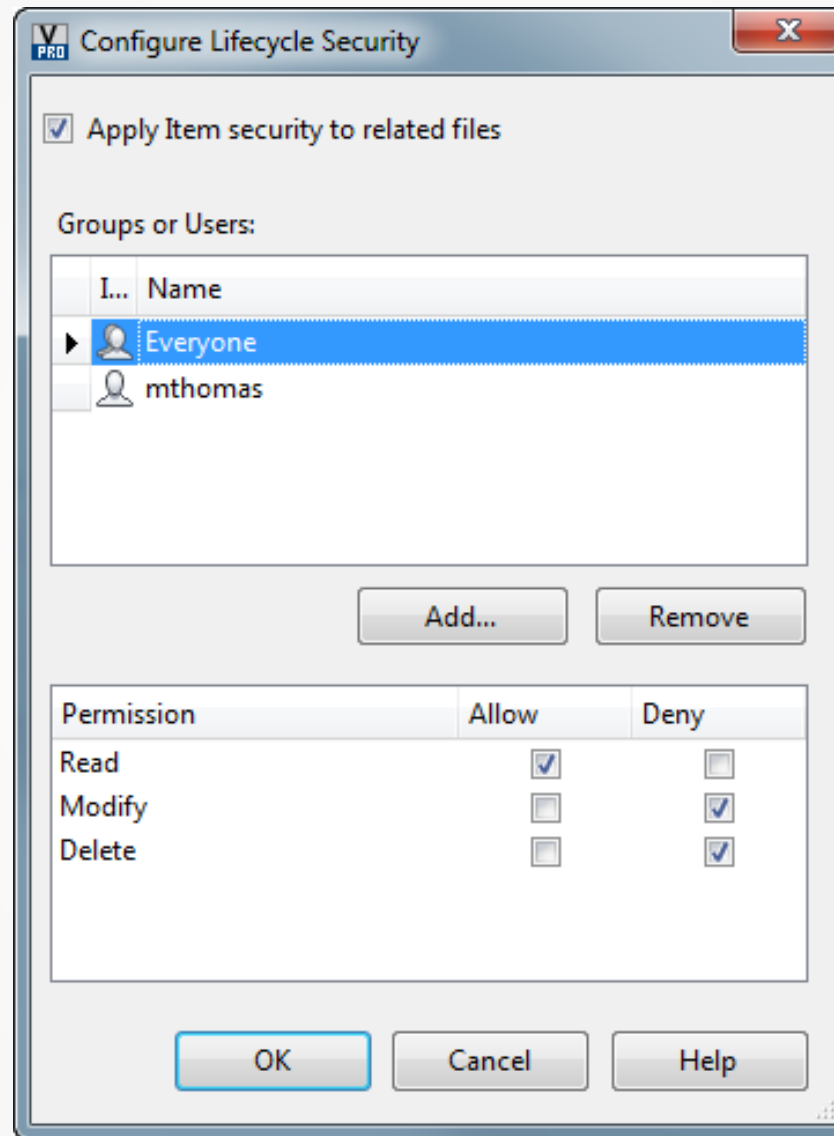
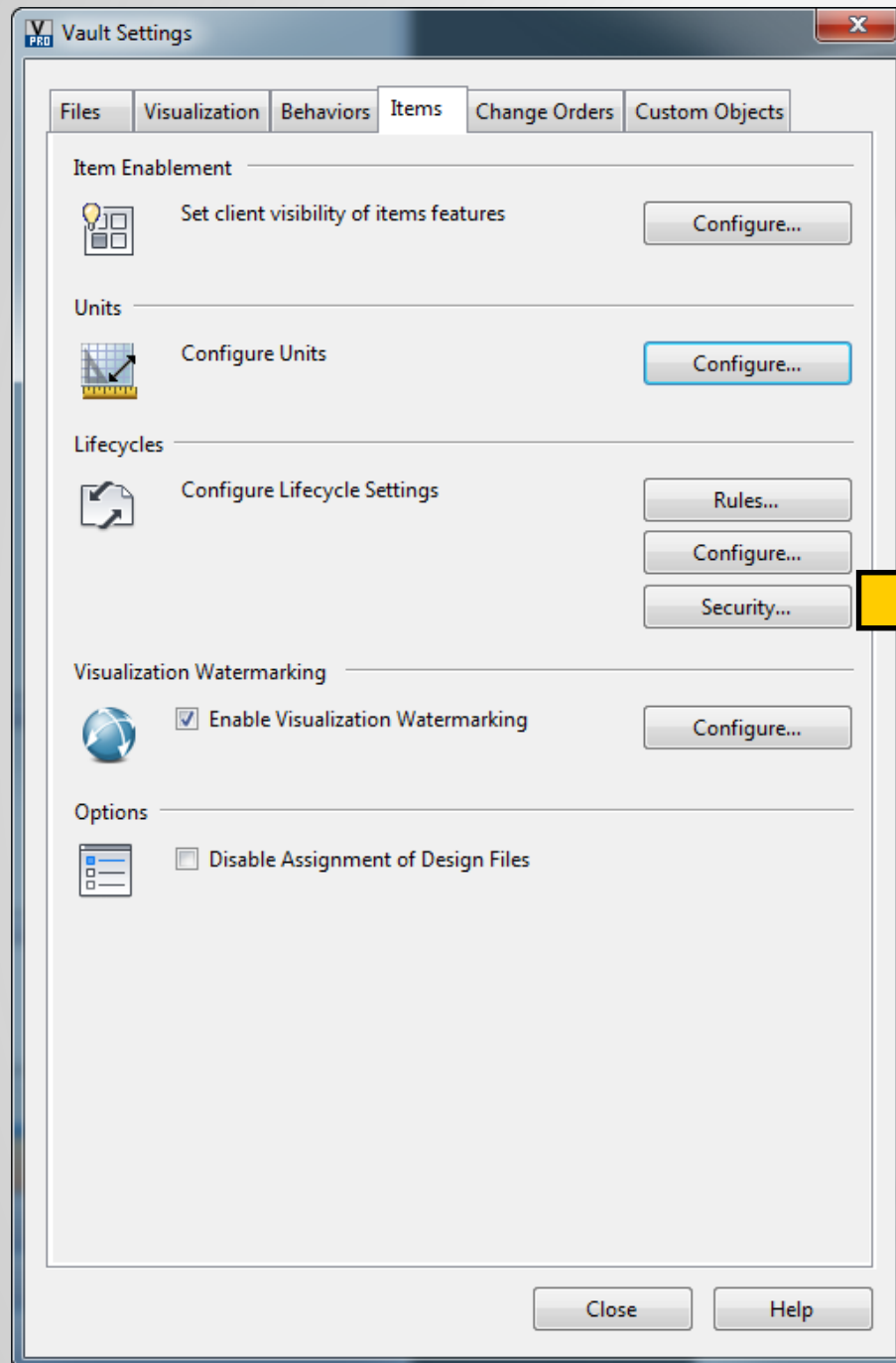
# Vault Settings - Items



## Item Lifecycle Rules

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

# Item State File Control

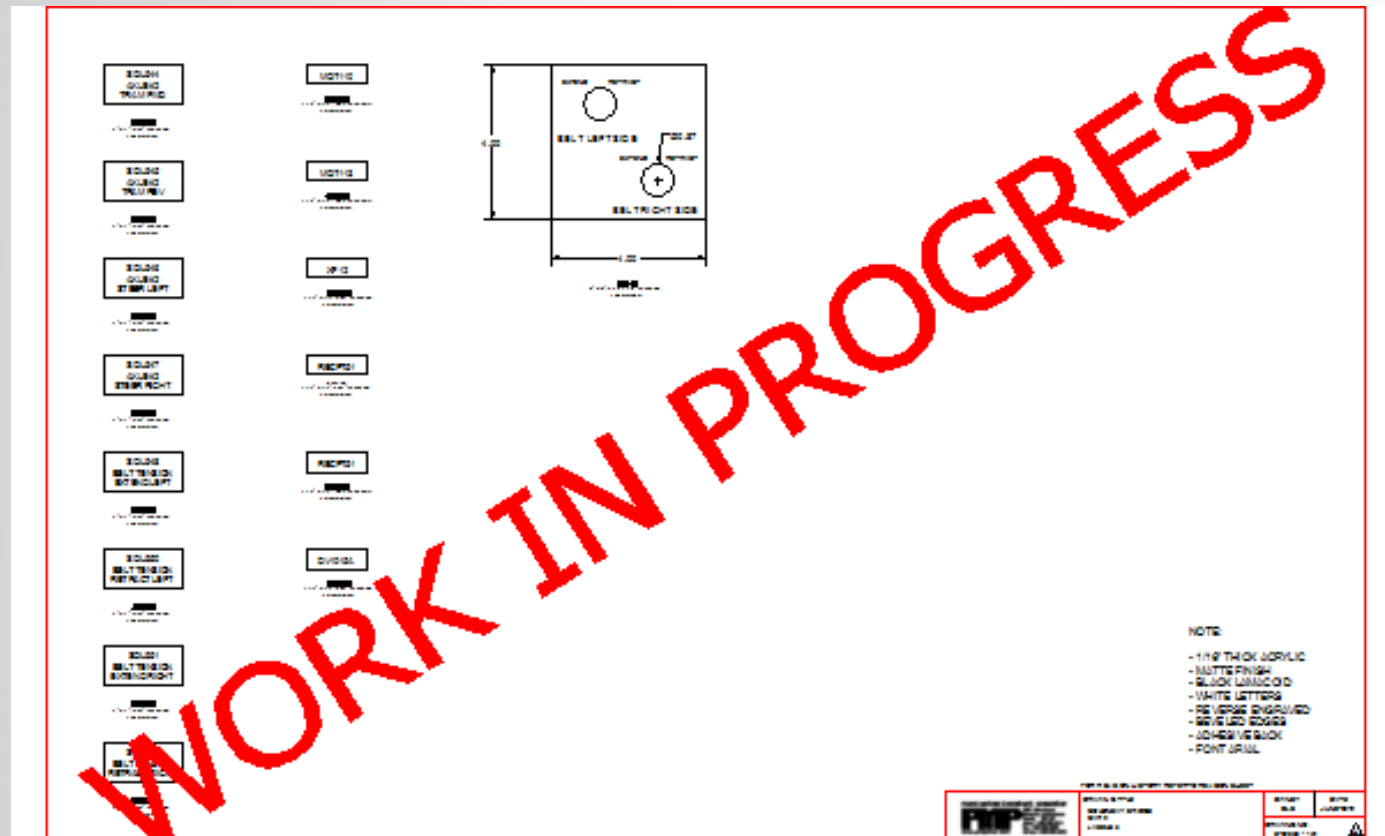


## Item Security

- By default when an Item is released the files associated with the item are locked.
- By adjusting the security specific users can be granted the ability to modify files and / or delete them even when the item is released / locked

# Watermarks

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





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# 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

# Change Orders

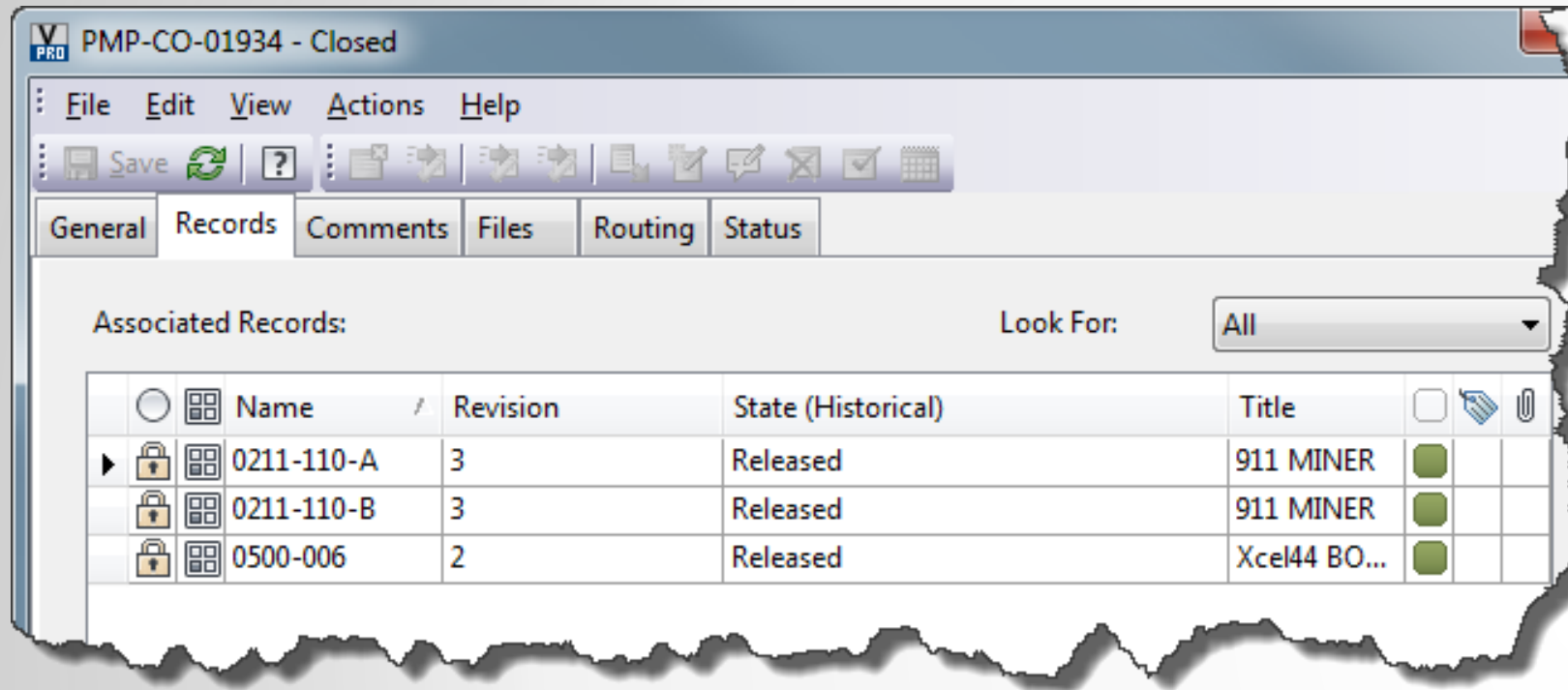
# CHANGE

# Change Orders

When a design requires a change or modification you want to put controls in place to help manage the change. A record of the changes provides a history “trail” of what was changed, why it was changed and when the change occurred.

Vault provides **Change Orders** to capture the changes and manage the change as the modifications are completed, reviewed, and released to be manufactured. The change order is the historical “paper trail” of the why, how, when, who, and what of the design modifications

# Change Orders - Records



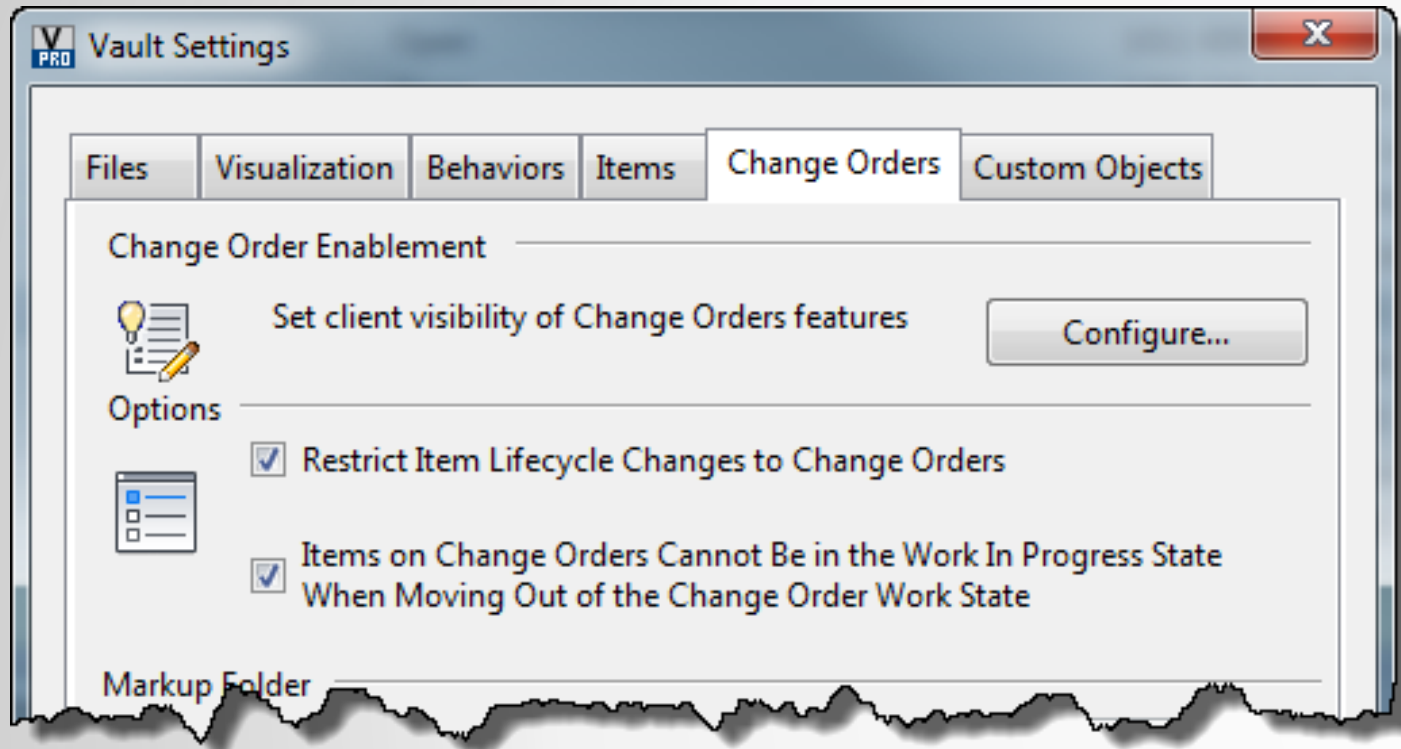
The **Records** tab lists all the items requiring changes.

Additional items that are not directly related / tied to the active item can be added to the Change Order using the **Add** button. This can include other assemblies or components requiring changes

To add the related component items right-click on the item in the change order and select **Add Related...**

- Use Auto Add at the bottom of the dialog to automatically add all Work In Progress items. This is important as you want to insure that all items related to the items changing are released by the change order.
- Select the items that require changes. This can be repeated at a later date if you find you missed adding required items.

# Item Change Orders – *For the administrator*



- 1. Restrict Item Lifecycle Changes to Change Orders....** Other than the administrator the only way to change the item lifecycle (ex. WIP to Release) is via the Change Order, this forces the electronic paper trail of the change
- 2. Items on Change Orders Cannot Be in the WIP State When...** When attempting to respond to the change order moving it from Work to Review this prevents items being in WIP, forces the user to update and put into Review

Just when you think you  
have all the answers...

I

change the questions.

- Rowdy Roddy Piper

Questions?



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