

# PL20989 - Best Practice Managing Inventor iPart/iAssemblies in Vault PDM

Markus Koechl

Solutions Engineer PDM|PLM  
Autodesk Central Europe

Peter van Avondt

Technical Specialist - Data Management  
Autodesk Northern Europe



# Class summary

Vault software products specifically support Inventor software's iPart/iAssembly factory and member file management. This class will have practical examples that will illustrate and unveil the secrets from basic file management tasks up to advanced workflows like partial revision of families. Experienced Inventor software users and product data management administrators will learn recommended setup and configurations to capitalize on the full capabilities and benefits managing and consuming component families. The class will discuss file structures, setup of family tables, and the implementation of file and item numbering schemes for family members. Follow considerations and implementation scenarios to drive CAD and item bill of materials. Another important aspect is to manage component families over larger periods of time. Get introduced to revision management and all file management tasks like rename, move, and copy. We will also cover Inventor file migration for vaulted families. This session features Vault Professional, Inventor Professional, and Vault Workgroup.

# Key learning objectives

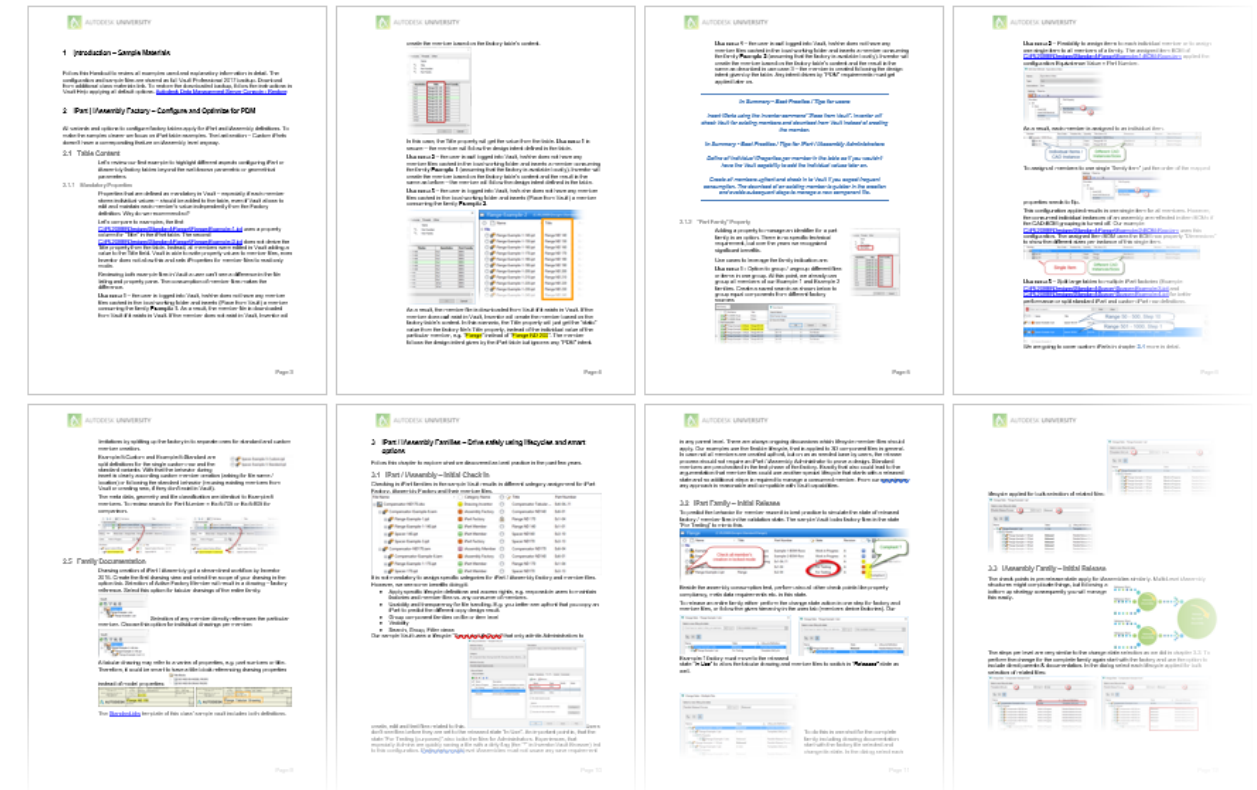
At the end of this class, you will be able to:

- Discover best practices defining robust and rich iPart/iAssembly factory definitions
- Learn how to optimize your Vault configuration to manage component families
- Learn about revision management of iPart/iAssembly factories and its member files
- Learn best practices to rename, move, copy, and migrate component families

# Agenda

- Make iPart / iAssemblies robust, compatible and smart for PDM workflows
- „iFamily“ lifecycles
  - From first release to family revisions
- „iFamily“ handling in Vault
  - Rename, Move, CopyDesign

# Sample Data & Handout



- Handout talking you through all examples

- Vault Professional 2017 Backup

- All sample files
- Fully configured



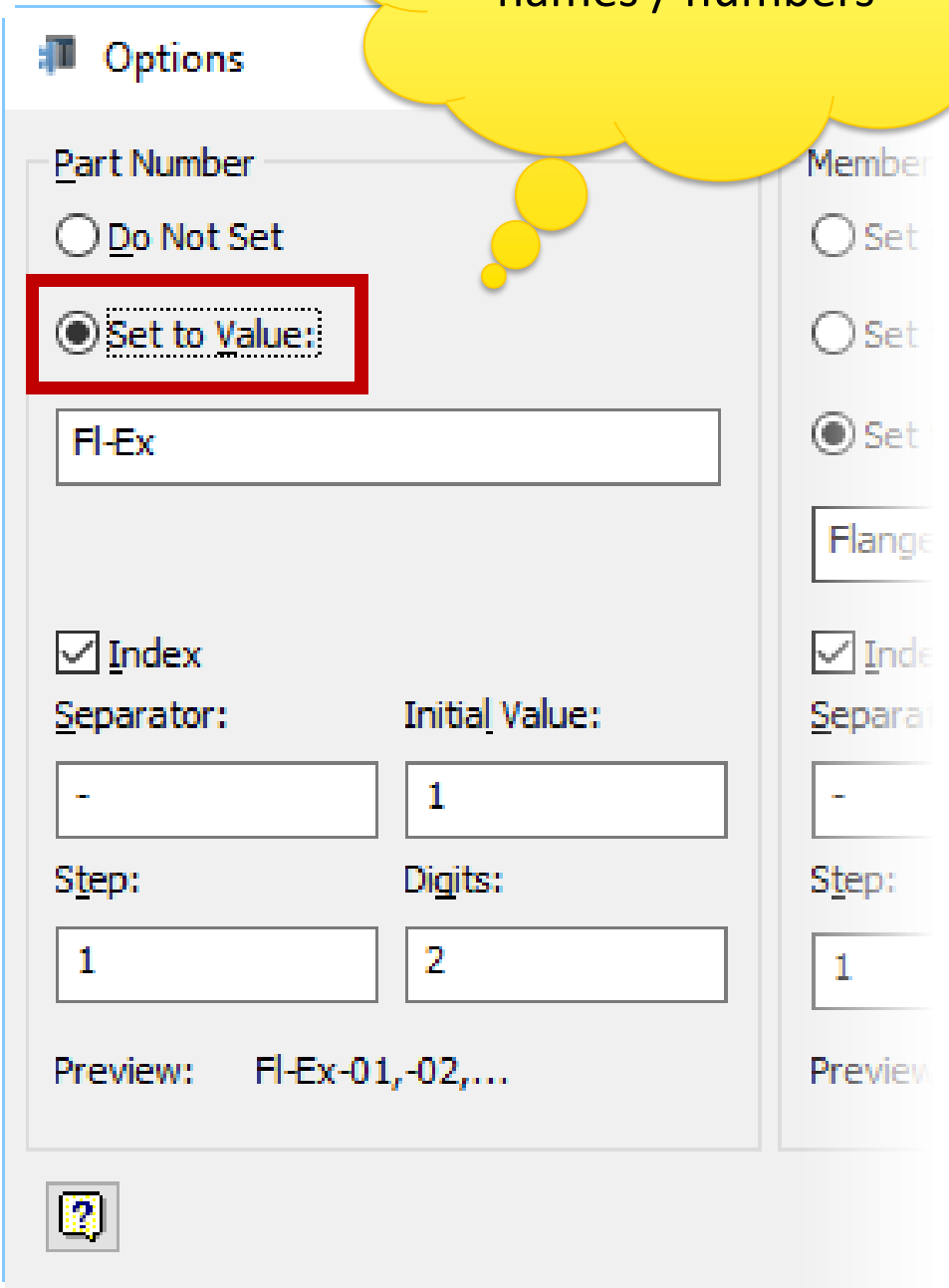
# iPart Factory | iAssembly Factory

Configure and Optimize for PDM

# Configure Family – Must Have | Options

Set options **according** use case

- Part Number = Set to Value
  - Any incremental value allowed
  - Increment of file name allowed



I'd like descriptive names / numbers

Options

Part Number

☐ Do Not Set

☒ Set to Value:

Fl-Ex

☒ Index

Separator: Initial Value:

- 1

Step: Digits:

1 2

Preview: Fl-Ex-01,-02,...

# Configure Family – Must Have | Options

Part Number = Set to Value

⇒ Yes! Apply the option leaving the options window

Options

Part Number

☐ Do Not Set

☒ Set to Value

Fl-Ex

☒ Index

Separator: - Initial Value: 1

Step: 1 Digits: 2

Preview: Fl-Ex-01,-02,...

Autodesk Inventor Professional 2017

?

Apply Part Numbering scheme to all members?

Yes No

# Configure Family – Must Have | Options

## Example #1

iPart Author

Parameters Properties Suppression iFeatures iMates Work Features Threads Other

Flange-Example-1.ipt

- Extrusion1
  - x = DiaEx [DiaIn + 55 mm]
  - x = DiaIn [170 mm]
  - x = Thickn [12.5 mm]
  - x = d3 [0.0 deg]
- Hole1
- Circular Pattern1
- Other

Name

- DiaEx
- 1 DiaIn
- Thickn
- NumHoles

	Member	Part Number	DiaEx	DiaIn	Thickn	NumHoles	Title	Description	Part Family
1	Nominal-Diam-140	Fl-Ex-01	DiaIn + 55 mm	140 mm	12.5 mm	6 ul	Flange	195x140x12.5	0001
2	Nominal-Diam-150	Fl-Ex-02	DiaIn + 55 mm	150 mm	12.5 mm	6 ul	Flange	205x150x12.5	0001
3	Nominal-Diam-160	Fl-Ex-03	DiaIn + 55 mm	160 mm	12.5 mm	6 ul	Flange	215x160x12.5	0001
4	Nominal-Diam-170	Fl-Ex-04	DiaIn + 55 mm	170 mm	12.5 mm	6 ul	Flange	225x170x12.5	0001
5	Nominal-Diam-180	Fl-Ex-05	DiaIn + 55 mm	180 mm	12.5 mm	6 ul	Flange	235x180x12.5	0001
6	Nominal-Diam-190	Fl-Ex-06	DiaIn + 55 mm	190 mm	12.5 mm	8 ul	Flange	245x190x12.5	0001
7	Nominal-Diam-200	Fl-Ex-07	DiaIn + 55 mm	200 mm	14 mm	8 ul	Flange	255x200x14	0001
8	Nominal-Diam-210	Fl-Ex-08	DiaIn + 55 mm	210 mm	14 mm	8 ul	Flange	265x210x14	0001
9	Nominal-Diam-220	Fl-Ex-09	DiaIn + 55 mm	220 mm	14 mm	8 ul	Flange	275x220x14	0001
10	Nominal-Diam-230	Fl-Ex-10	DiaIn + 55 mm	230 mm	14 mm	10 ul	Flange	285x230x14	0001
11	Nominal-Diam-240	Fl-Ex-11	DiaIn + 55 mm	240 mm	14 mm	10 ul	Flange	295x240x14	0001

Options... Verify OK Cancel

Options

Part Number

☐ Do Not Set

☒ Set to Value:

Fl-Ex

☒ Index

Separator: Initial Value:

- 1

Step: Digits:

1 2

Preview: Fl-Ex-01,-02,...

Member

☐ Set

☐ Set

☒ Set

Flange

☒ Index

Separator:

-

Step:

1

Preview:

I'd like descriptive names / numbers

# Configure Family – Must Have | Options

Set options **according** use case

- Part Number = Do not Set
  - Specific number required

⇒ Provide number for each row

Options

Part Number

☒ Do Not Set

☐ Set to Value:

Index ☒

Separator: - Initial Value: 1

Step: 1 Digits: 2

Preview:

Our ERP system determines numbers

# Configure Family – Must Have | Options Demo

**Reserve Numbers...**

**Number Scheme** File-Item-Scheme

02 - ####

**Range to Reserve** 11

**Generated Numbers**

02-0042  
02-0043  
02-0044  
02-0045  
02-0046  
02-0047  
02-0048  
02-0049  
02-0050

Run Close

**How to use this tool?**

Select Numbering Scheme.

Set the quantity of numbers required.

Execute.

All numbers pushed to automatic there with

	A	B	C	D
1	Member<defaultRow>4</defaultR	Part Number [Project]	DiaEx	DiaIn<key
2	Flange-Example-3-140	02-0042	DiaIn + 55 mm	140 mm
3	Flange-Example-3-150	02-0043	DiaIn + 55 mm	150 mm
4	Flange-Example-3-160	02-0044	DiaIn + 55 mm	160 mm
5	Flange-Example-3-170	02-0045	DiaIn + 55 mm	170 mm
6	Flange-Example-3-180	02-0046	DiaIn + 55 mm	180 mm
7	Flange-Example-3-190	02-0047	DiaIn + 55 mm	190 mm
8	Flange-Example-3-200	02-0048	DiaIn + 55 mm	200 mm
9	Flange-Example-3-210	02-0049	DiaIn + 55 mm	210 mm
10	Flange-Example-3-220	02-0050	DiaIn + 55 mm	220 mm
11	Flange-Example-3-230	02-0051	DiaIn + 55 mm	230 mm
12	Flange-Example-3-240	02-0052	DiaIn + 55 mm	240 mm

# Configure Family Tables | Options

- Variant Name
  - Use any of the available options
  - No specific relevance for PDM

Member Name

☐ Set to Member Part Number ✓

☒ Set to Factory File Name ✓

☐ Set to Value: ✓

Nominal-Diam

☒ Index

Separator: Initial Value:

- 140

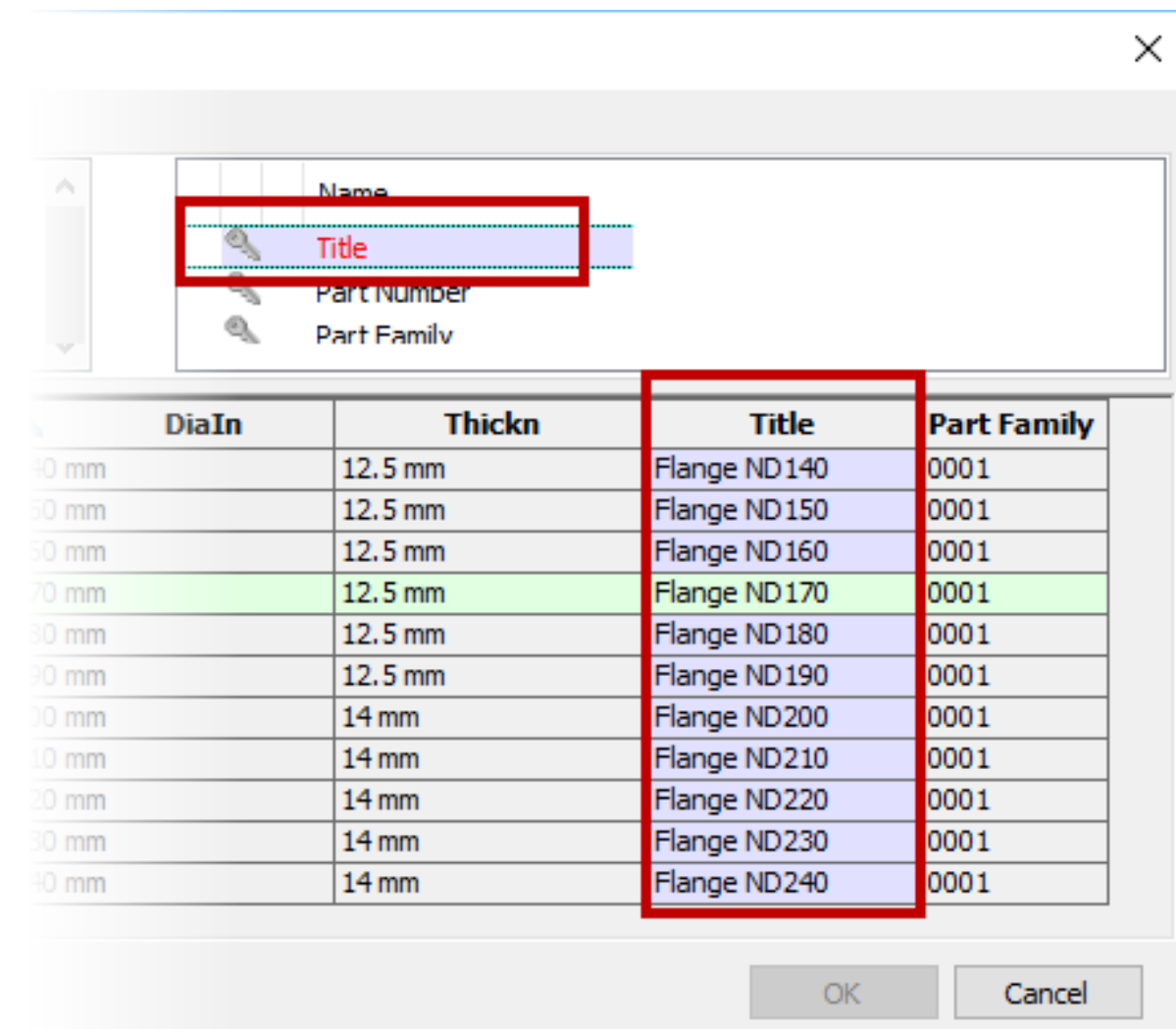
Step: Digits:

10 3

Preview: Flange-Example-1-140,-15...

# Configure Family Tables | PDM Meta Data

- Component parameters and keys
- Add iProperties
  - Mandatory properties
  - Part family for flexibility



# Configure Family Tables | PDM Meta Data

## Example #1

- Title => table column
- Title read by Vault

NumHoles	Title	Part Family
6 ul	Flange ND 140	0001
6 ul	Flange ND 150	0001
6 ul	Flange ND 160	0001
6 ul	Flange ND 170	0001
6 ul	Flange ND 180	0001
8 ul	Flange ND 190	0001
8 ul	Flange ND 200	0001
8 ul	Flange ND 210	0001
8 ul	Flange ND 220	0001
10 ul	Flange ND 230	0001
10 ul	Flange ND 240	0001

## Example #2

- Title => no table column
- Title value added by Vault

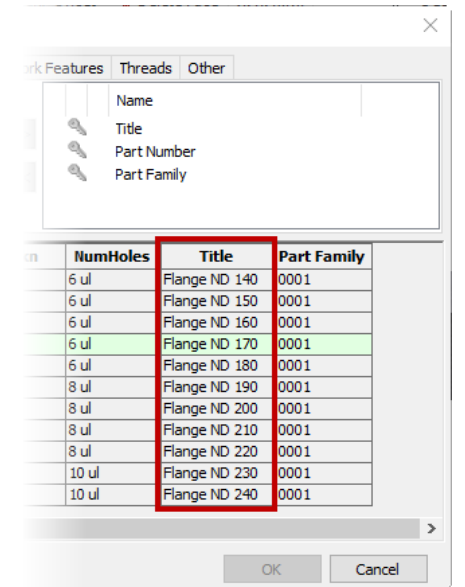
Thickn	NumHoles	Part Family
12.5 mm	6 ul	0001
12.5 mm	6 ul	0001
12.5 mm	6 ul	0001
12.5 mm	6 ul	0001
12.5 mm	6 ul	0001
12.5 mm	8 ul	0001
14 mm	8 ul	0001
14 mm	8 ul	0001
14 mm	8 ul	0001
14 mm	10 ul	0001
14 mm	10 ul	0001

Name	Title	Part
Flange-Example-1-140.ipt	Flange ND 140	Ex1-
Flange-Example-1-150.ipt	Flange ND 150	Ex1-
Flange-Example-1-160.ipt	Flange ND 160	Ex1-
Flange-Example-1-170.ipt	Flange ND 170	Ex1-
Flange-Example-1-180.ipt	Flange ND 180	Ex1-
Flange-Example-1-190.ipt	Flange ND 190	Ex1-
Flange-Example-1-200.ipt	Flange ND 200	Ex1-
Flange-Example-1-210.ipt	Flange ND 210	Ex1-
Flange-Example-1-220.ipt	Flange ND 220	Ex1-
Flange-Example-1-230.ipt	Flange ND 230	Ex1-
Flange-Example-1-240.ipt	Flange ND 240	Ex1-

# Configure Family Tables | PDM Meta Data

## Example #1 - Consumption

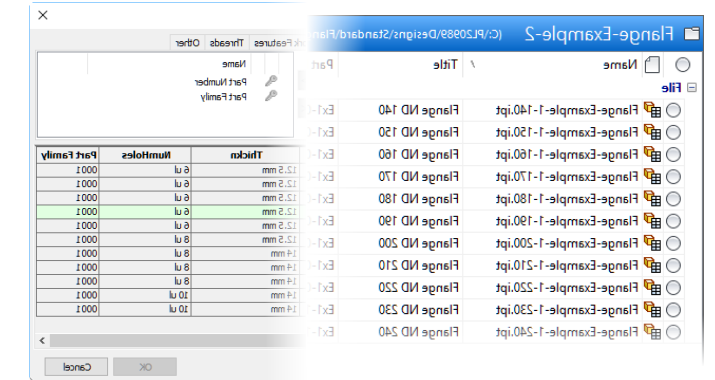
- ✓ Logged in user
  - ✓ Existing members are retrieved
  - ✓ Missing members are created correctly
- ✓ “Offline” user
  - ✓ Missing members are created correctly



NumHoles	Title	Part Family
6 ul	Flange ND 140	0001
6 ul	Flange ND 150	0001
6 ul	Flange ND 160	0001
6 ul	Flange ND 170	0001
6 ul	Flange ND 180	0001
8 ul	Flange ND 190	0001
8 ul	Flange ND 200	0001
8 ul	Flange ND 210	0001
8 ul	Flange ND 220	0001
10 ul	Flange ND 230	0001
10 ul	Flange ND 240	0001

# Configure Family Tables | PDM Meta Data

## Example #2 – Consumption



- ✓ Logged in user
  - ✓ Existing (vaulted) members are retrieved
  - Missing members are created differently!
- “Offline” user
  - Missing members are created differently!

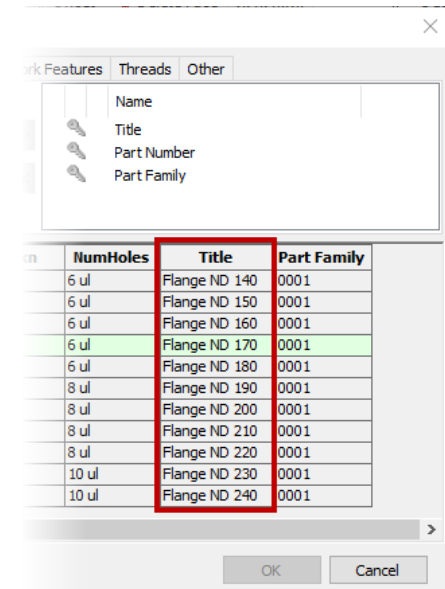
# In Summary - Best Practice / Tips for Users

- *Insert iParts using the Inventor command “Place from Vault”. Inventor will check Vault for existing members and download from Vault instead of creating the member.*

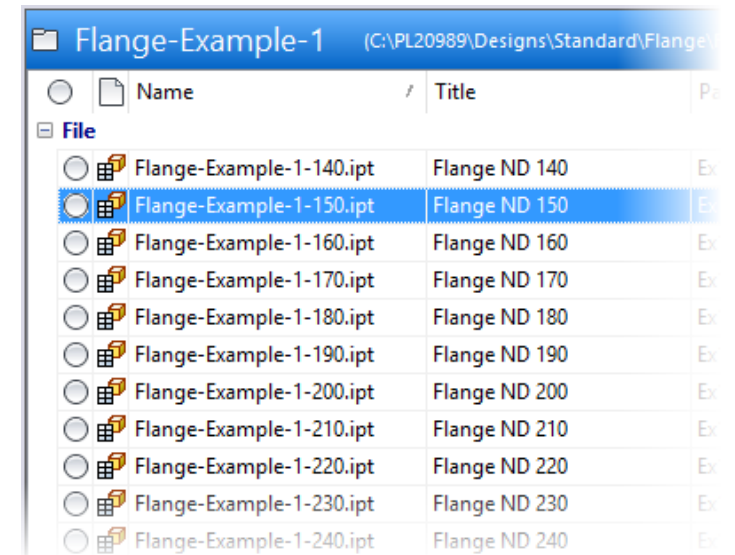


# In Summary - Best Practice for Administrators

- Set Part Number Option wisely
- Include iProperty value definition in factory
- Decide for a default row\*

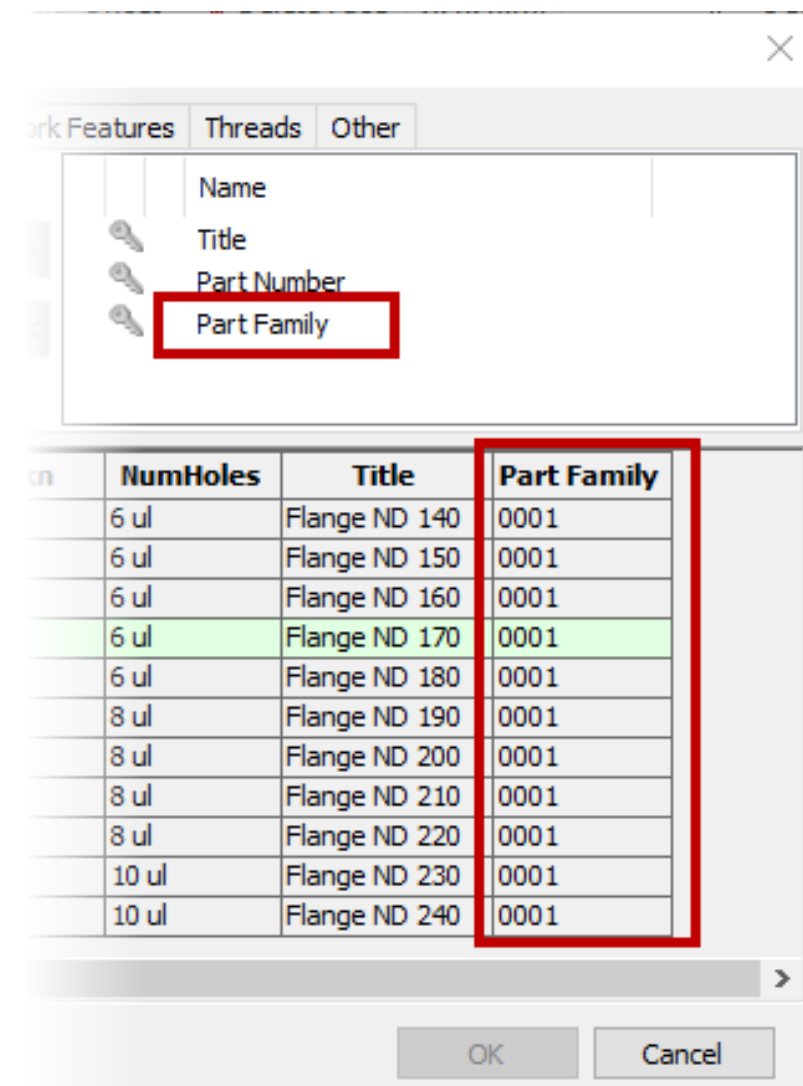


- For frequent consumption...
  - Create all members and share these by Vault



# Configure Family Tables | PDM Meta Data

- Component parameters and keys
- Add iProperties
  - Mandatory properties
  - Part family for flexibility



# Configure Family Tables | PDM Meta Data

## Benefit 1

### File and Item Sorting & Grouping

The screenshot displays a 'Part Family' table with columns for File Name, Title, and other metadata. A 'Save Search' dialog box is overlaid on the table, allowing the user to save a search configuration.

**Part Family Table:**

File Name	Title
D-200099-05.ipt	Piston
D-200099-08.ipt	Piston
<b>Part Family:0001</b>	
Flange-Example-2-240.ipt	Flange ND 240
Flange-Example-1-240.ipt	Flange ND 240
Flange-Example-1-230.ipt	Flange ND 230
Flange-Example-2-230.ipt	Flange ND 230
Flange-Example-1-220.ipt	Flange ND 220
Flange-Example-2-220.ipt	Flange ND 220

**Save Search Dialog Box:**

- Search Name: iPart Family Groups
- ☒ Save As Folder
- Buttons: OK, Cancel, Help

# Configure Family Tables | PDM Meta Data

## Benefit 2

Part family for flexibility

- ✓ Enhanced grouping
- ✓ Flexible item assignments

Number	Row Order /	Position Nu...	Quantity	Title (Item,CO)	Dimensions	Revision	...	State (Historical)		
▶ ▢ ▢ Example-1-BOM-Rows	-	-	-	Example-1-BOM-Rows	-	A		Work In Progress	✎	💡
▢ Ex1-04	1	1	1 Each	Flange ND 170	225x225x12.5	A		Work In Progress		💡
▢ Ex1-11	2	2	1 Each	Flange ND 240	295x295x14	A		Work In Progress		💡

Individual Items / Different CAD

Number	Row Order /	Position Nu...	Quantity	Title (Item,CO)	Dimensions	Revision	...	State (Historical)		
▶ ▢ ▢ Example-2-BOM-Row	-	-	-	Example #2	-	A		Work In Progress		💡
▢ Ex2-01	1	3	1 Each	Flange	195x195x12.5	A		Work In Progress		💡
▢ Ex2-01	2	4	1 Each	Flange	205x205x12.5	A		Work In Progress		💡

Single Item

Different CAD Instances/Sizes

# Configure Family Tables | PDM Meta Data

## Benefit 3

Split iPart/iAssembly Factories to

- Improve performance
- Increase usability

×

Enter text to search...

▼

Find

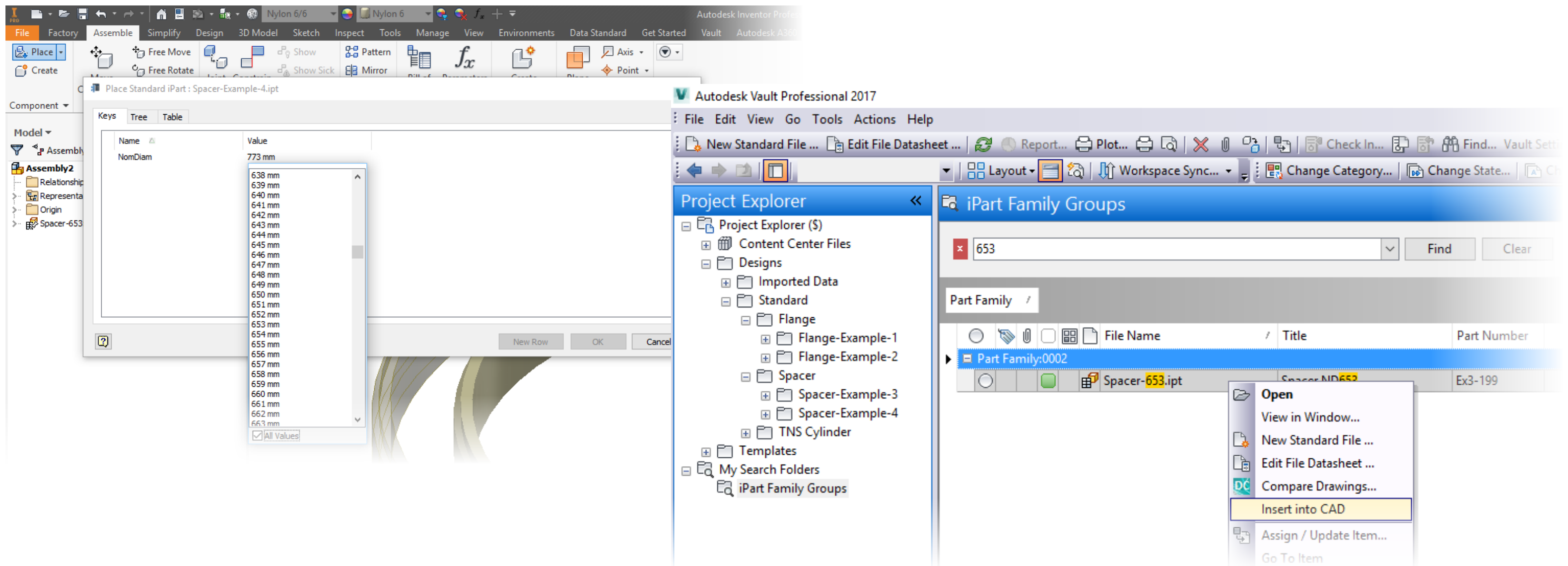
Clear

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# Configure Family Tables | PDM Meta Data

## Benefit 3 - Demo

- Improve performance



# Configure Tables | Summary & Tips

- Add iProperties to table
- Apply ***Part Number*** option in accordance with part number columns' content
- Create member files in checked out state
  - If iLogic rules are in place
  - If physical properties are mapped
- Create and manage all members before consumption\*

# Configure Family Tables | Custom Members

Need to know...

- Vault handles custom members like standard members
  - Parent child relationship
  - File handling – CopyDesign, Move, Rename

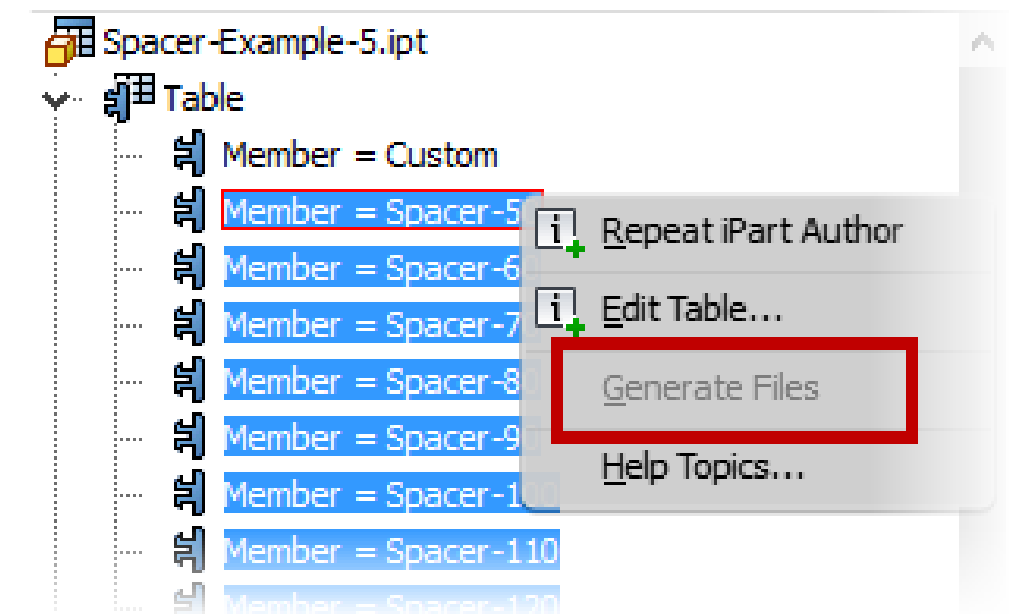
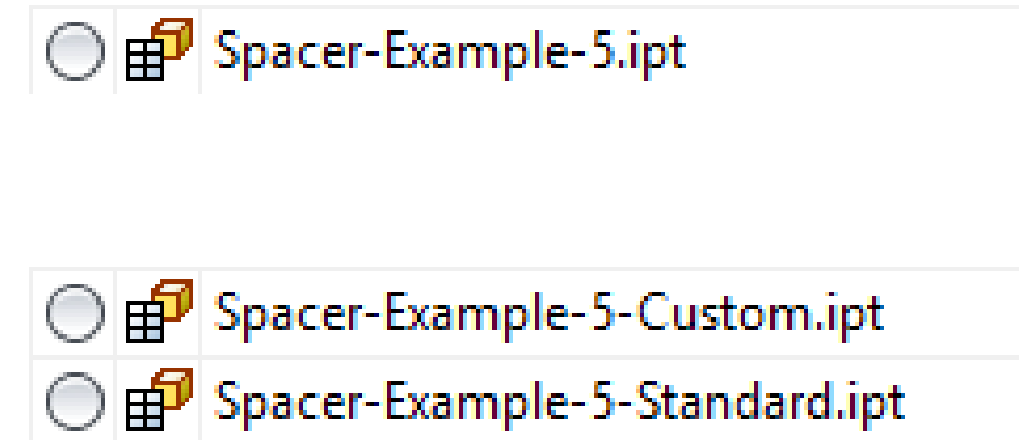
# Configure Family Tables | Custom Members

Define standard custom members...

- Single factory / table for both?
- Separate factory for each type?

Inventor restricts in single table

- Key parameter column and custom cell combined
- Automatic member creation



# Configure Family Tables | Custom Members

- ✓ Split Custom and Standard Factory
- ✓ Vault helps to aggregate split variants 😊

Place custom member...

- ✓ Re-Use family subfolder for beneficial file handling – Move, Rename

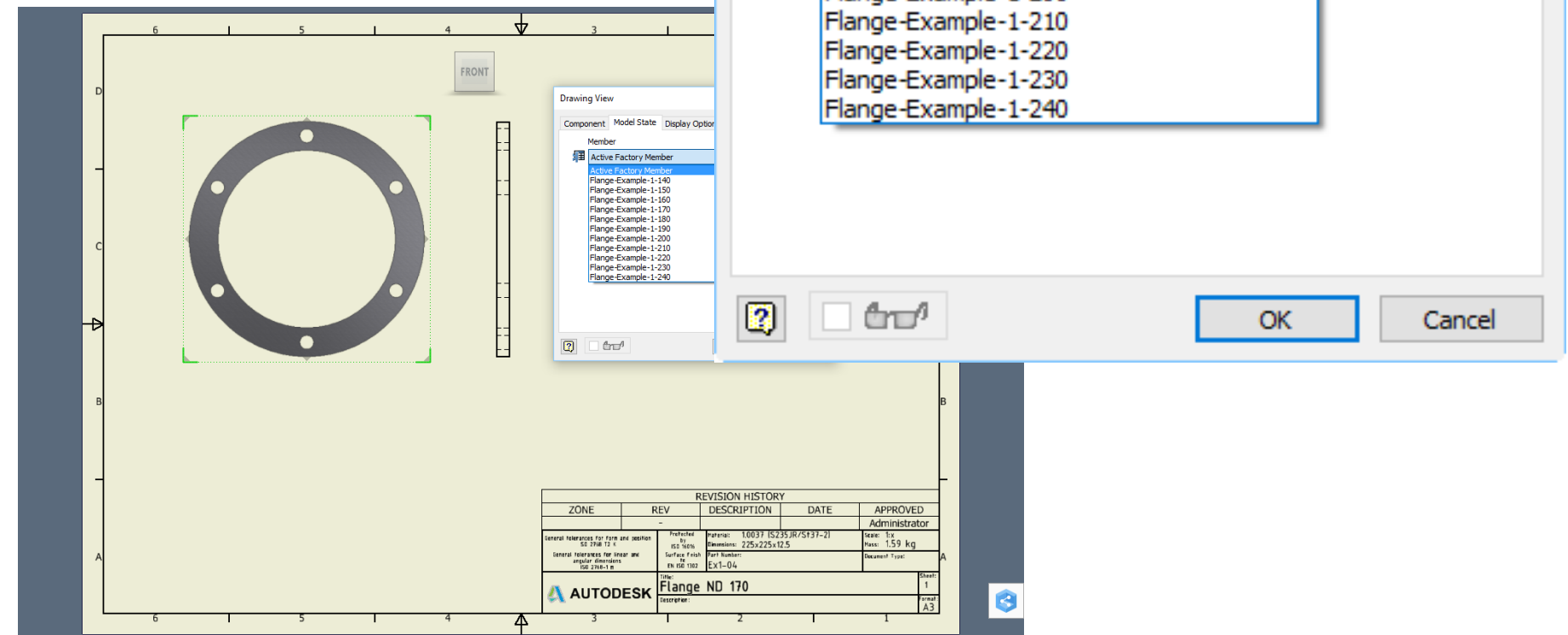
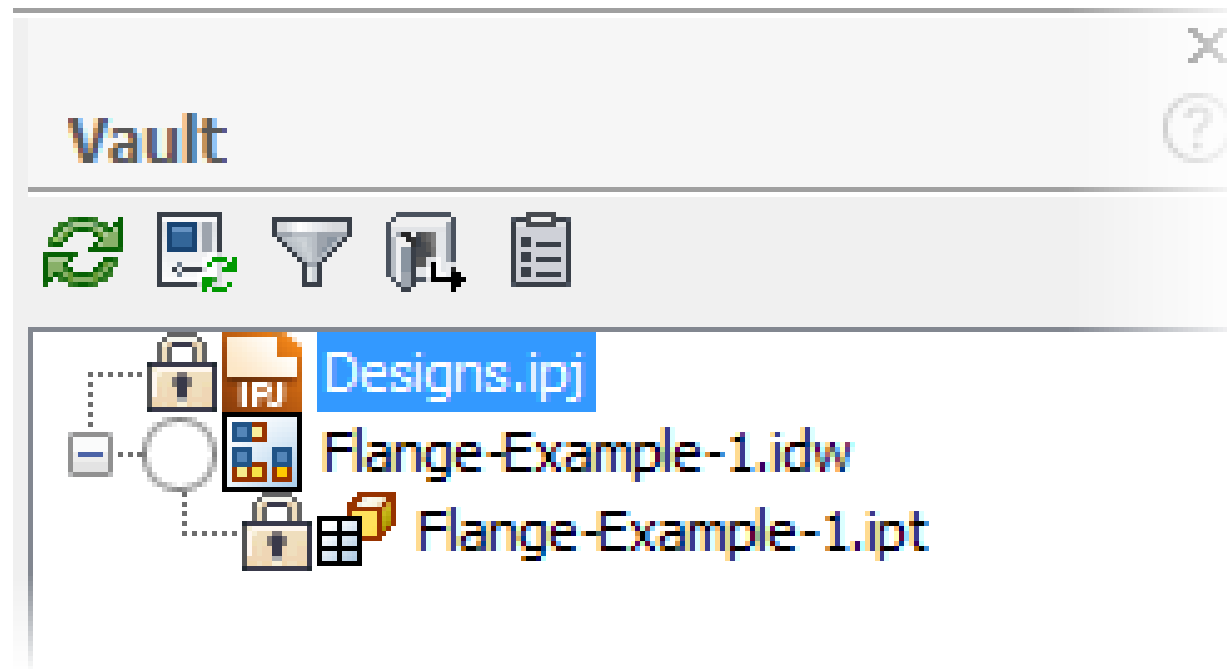


# Configure Family Documentation | Drawings

## Scope of documentation

- Tabular drawing

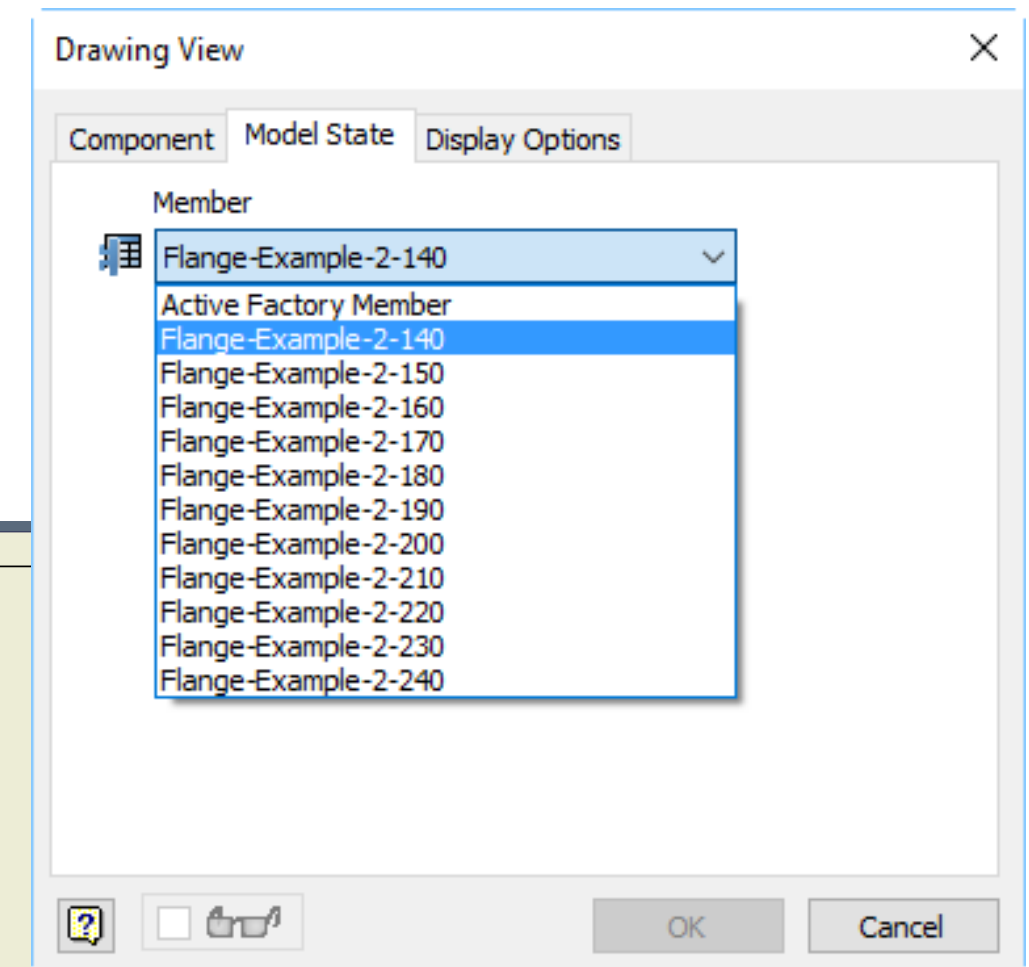
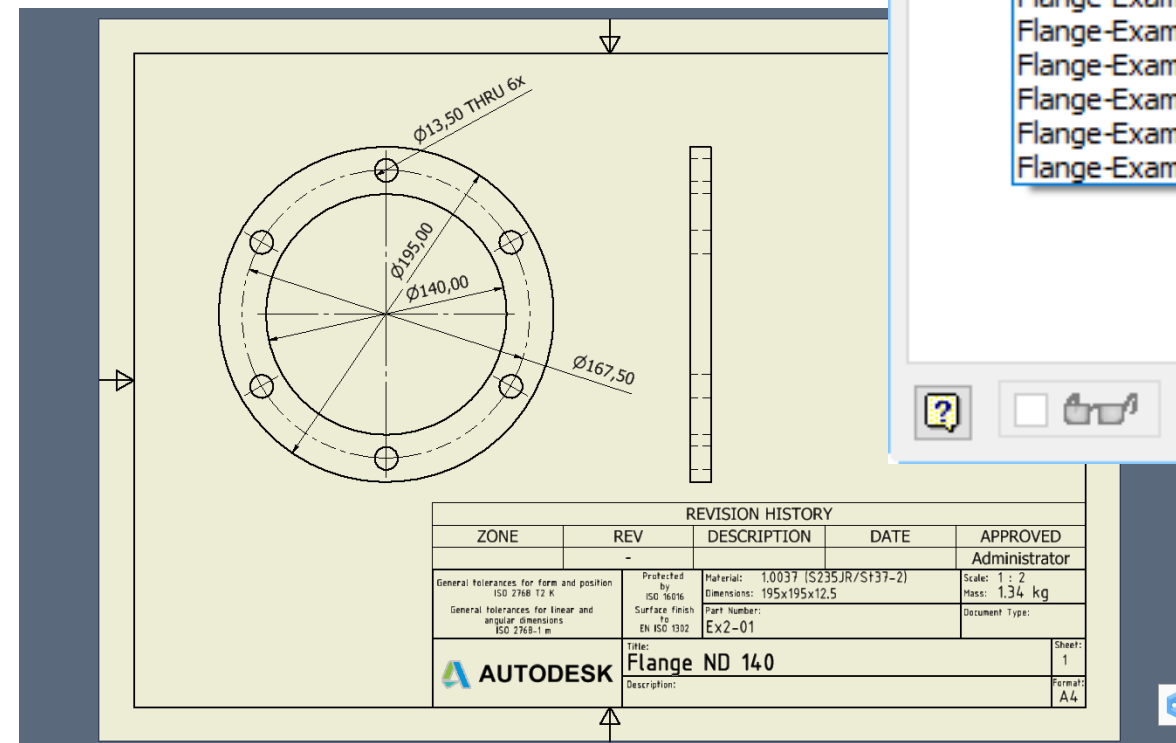
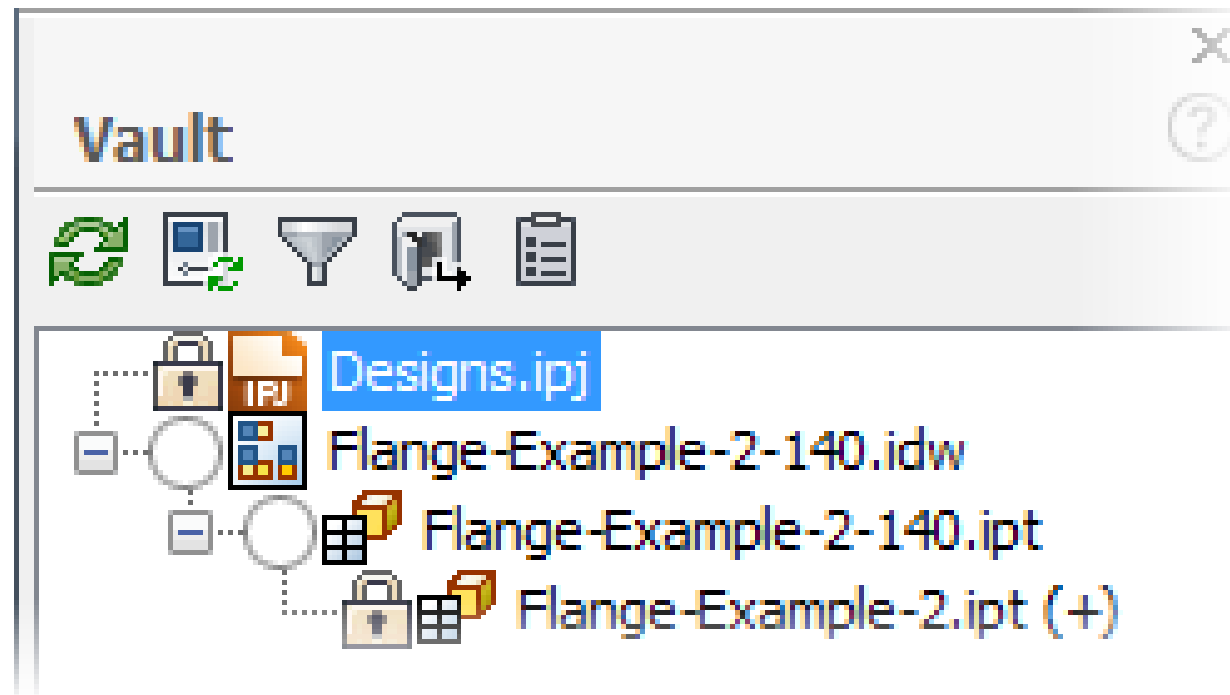
- Select Active Factory Member\*



# Configure Family Documentation | Drawings


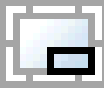
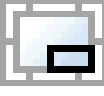
## Scope of documentation


- Tabular drawing
- Individual drawings




# Configure Family Documentation | Drawings Tip

Tabular drawings...it's good to have another title...

-  Title Blocks
-  ISO MSD EN MODEL PROPS
-  ISO MSD EN DRAW PROPS

General tolerances for form and position ISO 2768 T2 K  General tolerances for linear and angular dimensions ISO 2768-1 m	Protected by ISO 16016  Surface finish to EN ISO 1302	Material: 1.0037 (S235JR/St37-2) Dimensions: 225x225x12.5	Scale: 1 : 2 Mass: 1.59 kg
		Part Number: Ex1-04	Document Type:
 AUTODESK	Title: Flange ND 170		Sheet: 1
	Description:		Format: A3

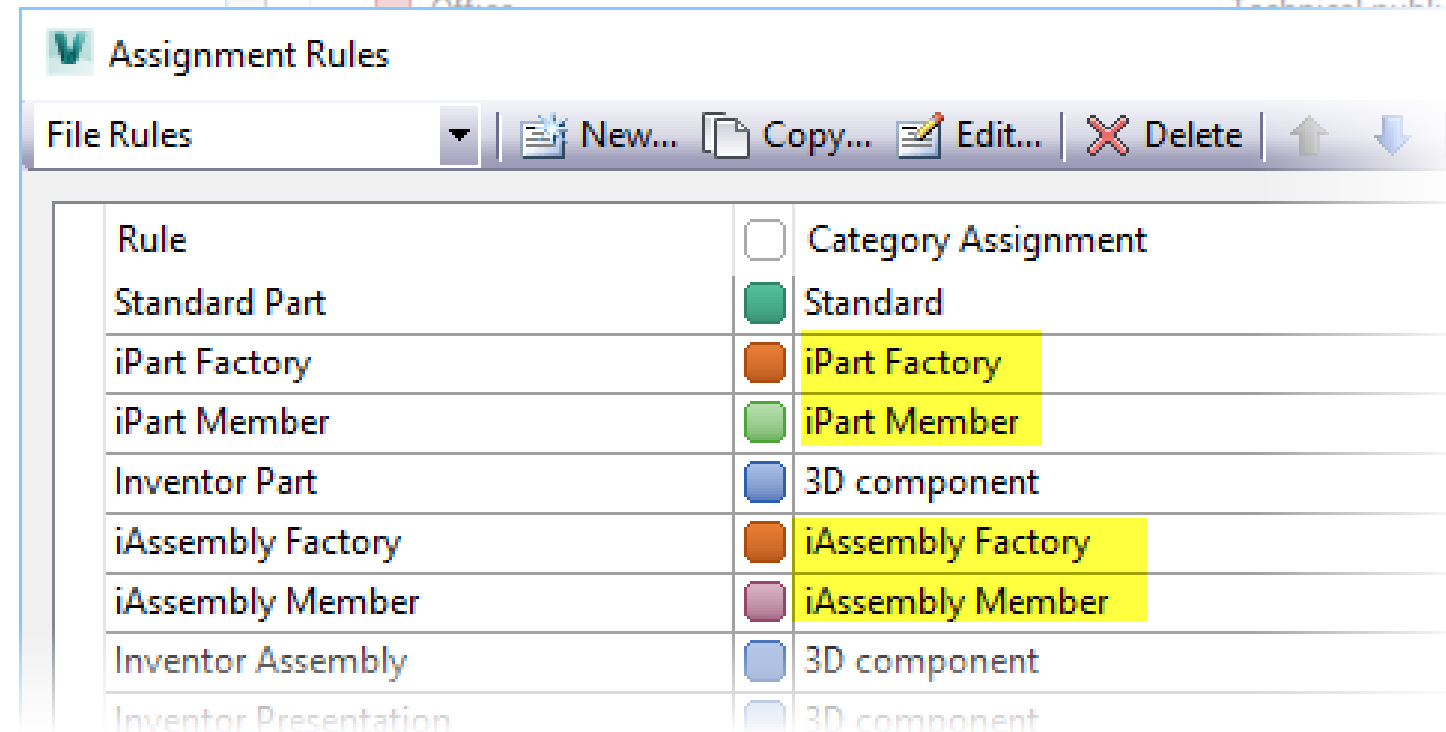
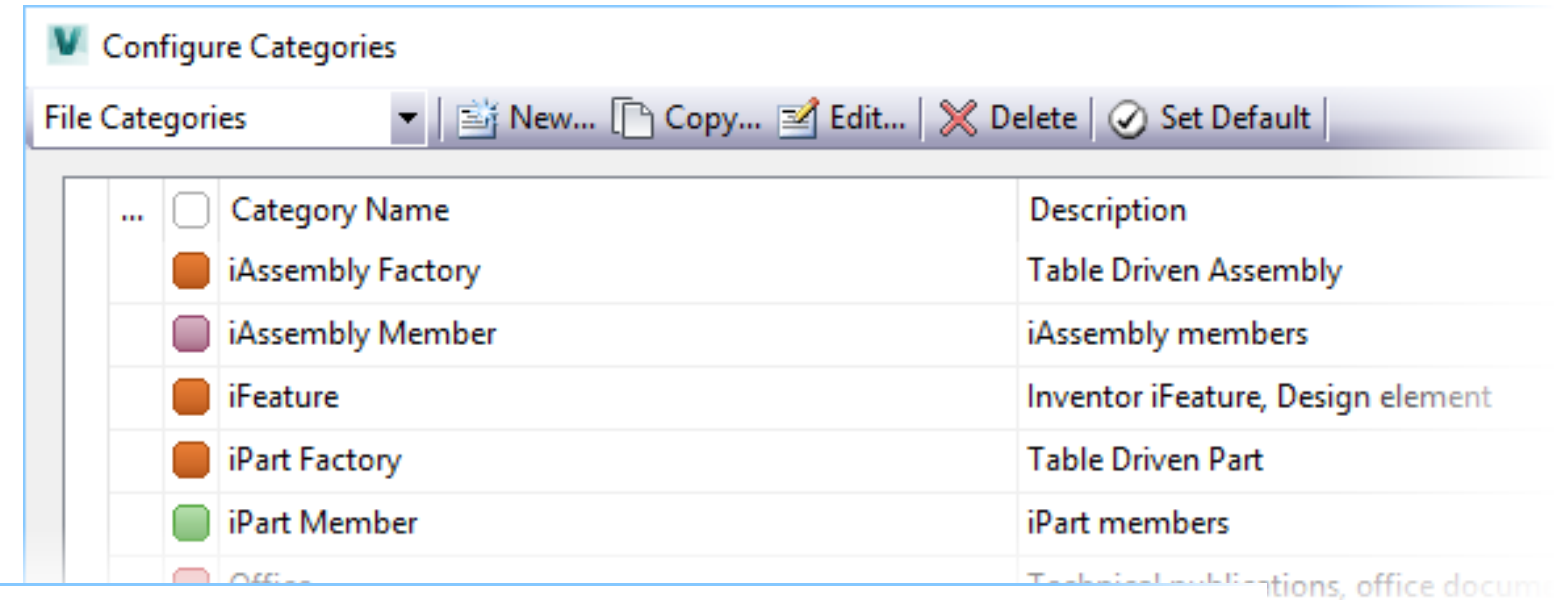
General tolerances for form and position ISO 2768 T2 K  General tolerances for linear and angular dimensions ISO 2768-1 m	Protected by ISO 16016  Surface finish to EN ISO 1302	Material: 1.0037 (S235JR/St37-2) Dimensions: <varies see table>	Scale: 1 : 2 Mass: <varies>
		Part Number: Ex1-04..11	Document Type:
 AUTODESK	Title: Flange Tabular Drawing		Sheet: 1
	Description:		Format: A3

# iPart Families | iAssembly Families

PDM - Workflows

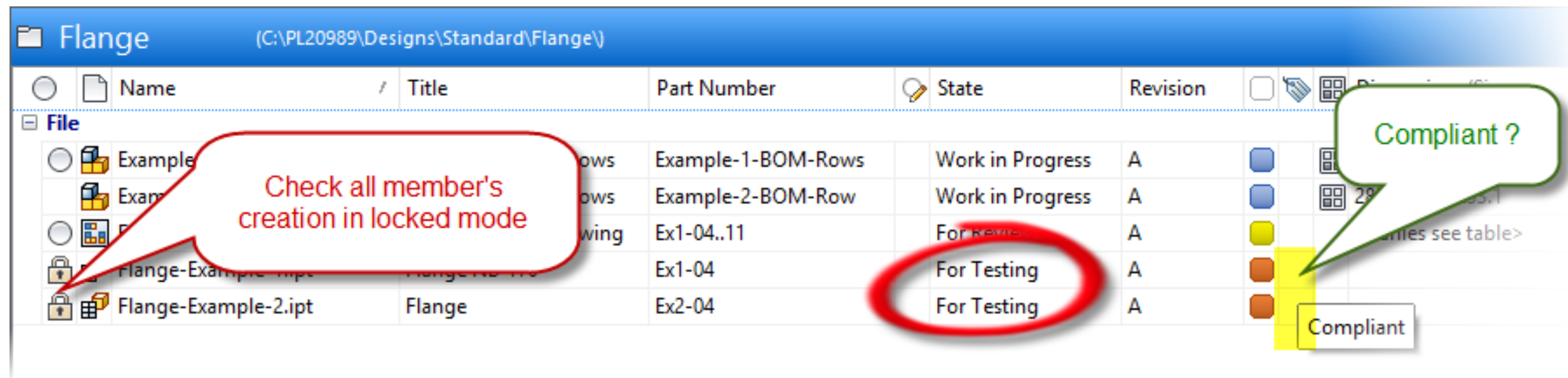
# Initial Check In | Category Assignment

- Category
  - Lifecycle for Factory
- Rules



# Initial Release | Factory / Members

- ✓ The factory works, all members are created
- Change state to „Validation“
- Re-test member consumption, switching sizes
- Check property compliancy

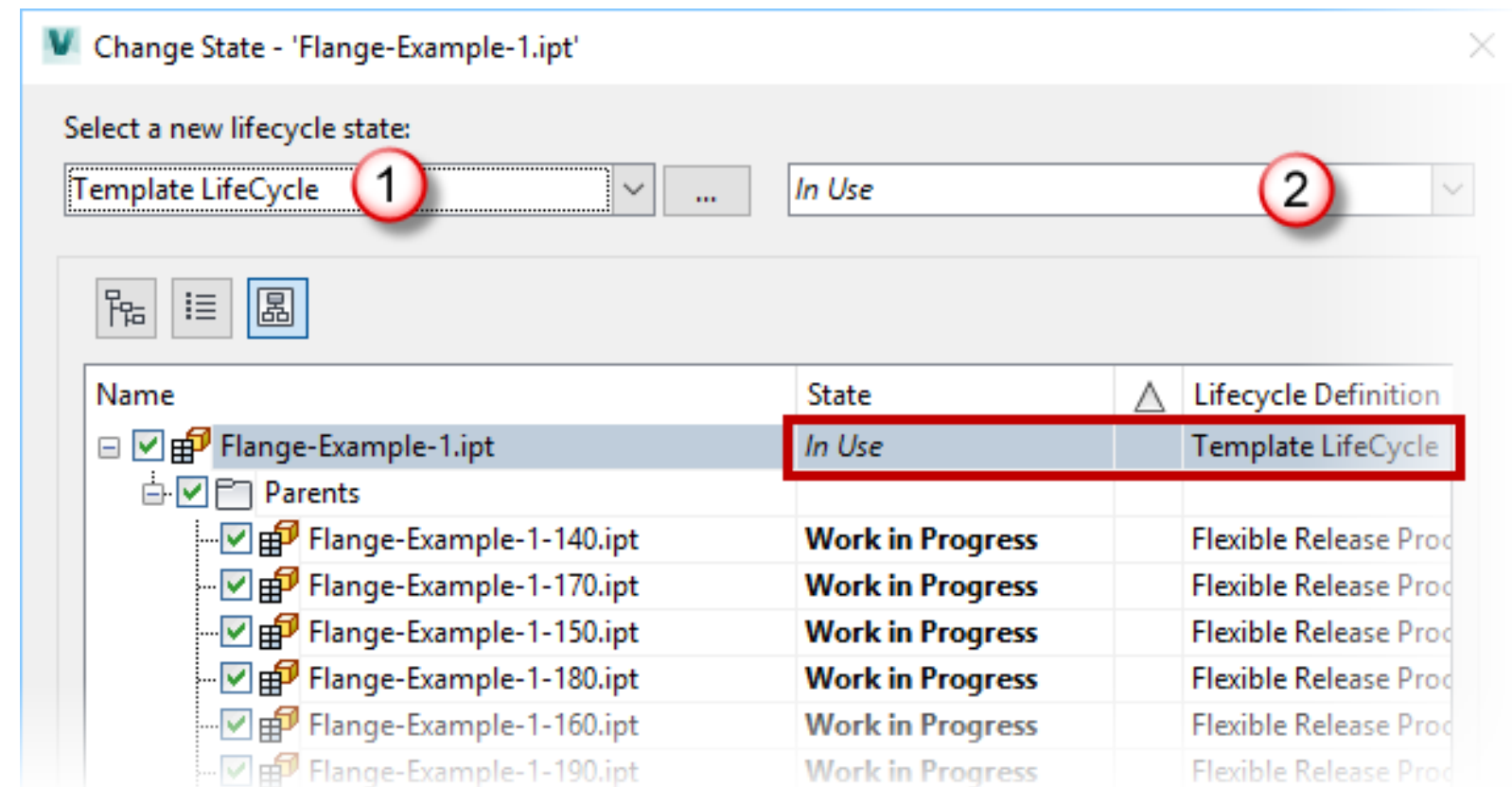


Name	Title	Part Number	State	Revision	Compliant
Example-1-BOM-Rows	Example-1-BOM-Rows	Example-1-BOM-Rows	Work in Progress	A	
Example-2-BOM-Row	Example-2-BOM-Row	Example-2-BOM-Row	Work in Progress	A	
Ex1-04..11	Ex1-04..11	Ex1-04..11	For Review	A	
Ex1-04	Ex1-04	Ex1-04	For Testing	A	
Ex2-04	Ex2-04	Ex2-04	For Testing	A	

# Initial Release | iPart Factory / Members

Release entire family [& documentation]

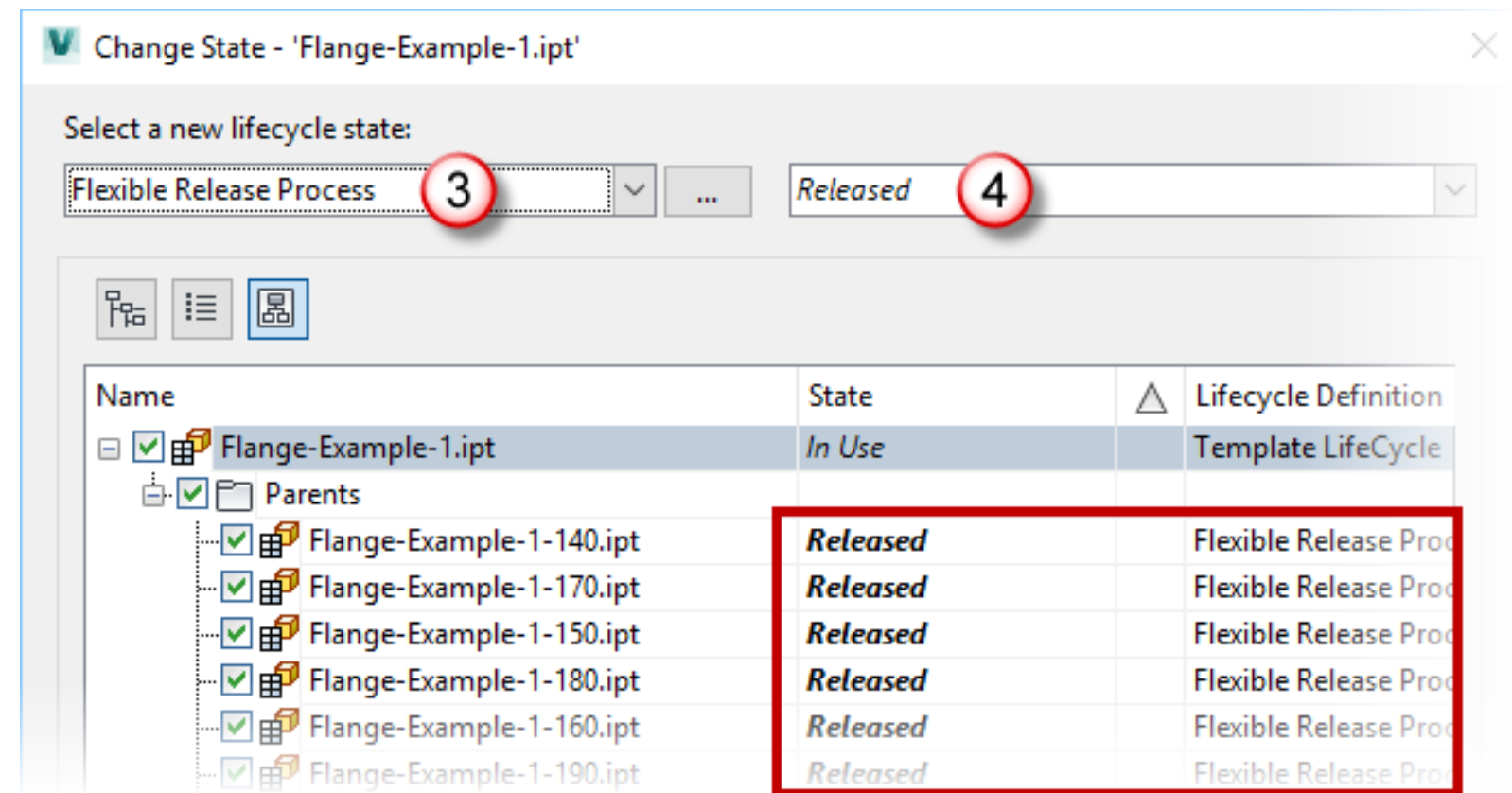
- Select factory -> change state
- Include direct parents only
- Set state for factory
- Set state for members



# Initial Release | iPart Factory / Members

## Release entire family [& documentation]

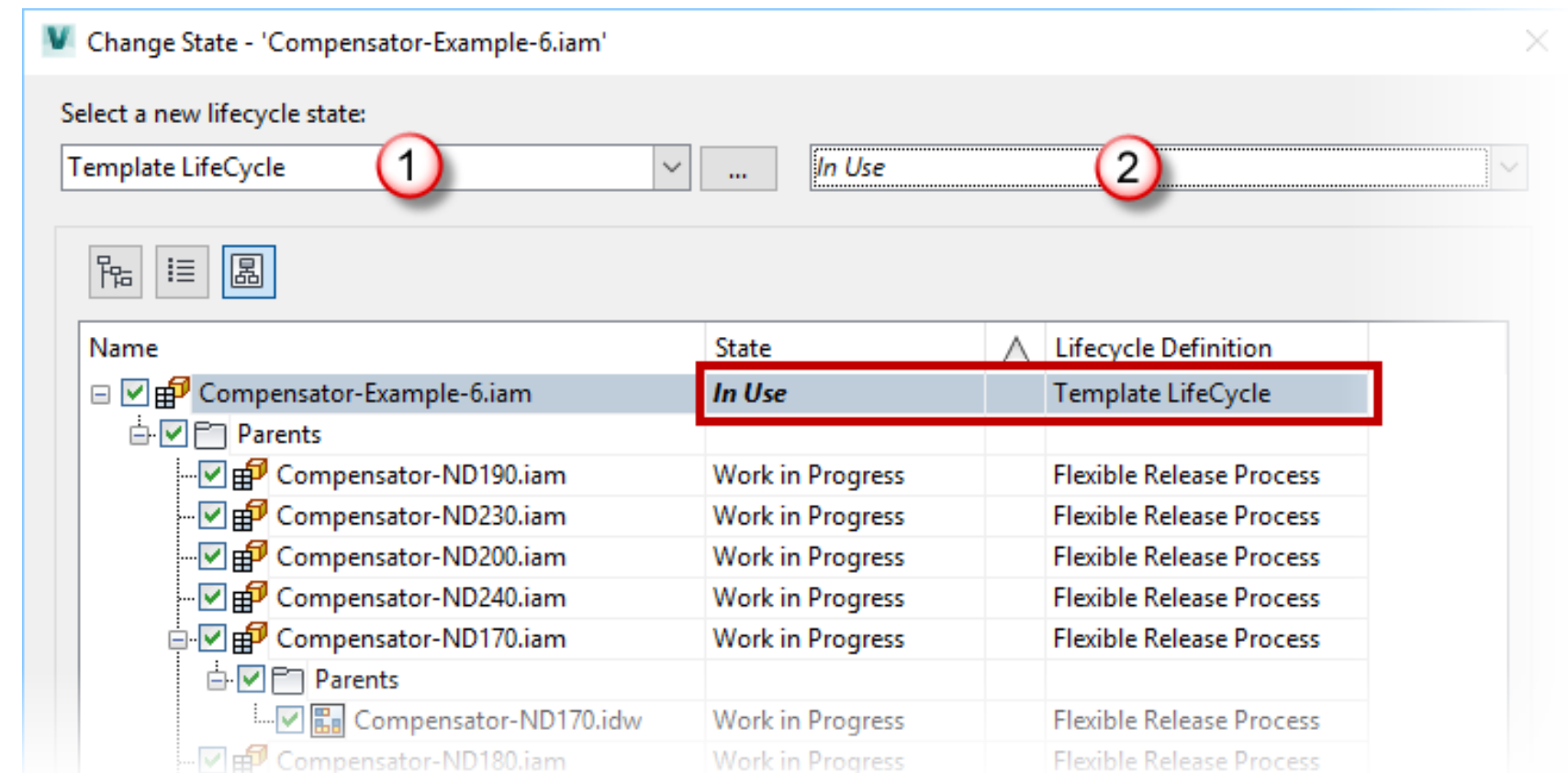
- Select factory -> change state
- Include direct parents only\*\*
- Set state for factory
- Set state for members



# Initial Release | iAssembly Factory / Members

Release entire family [& documentation]

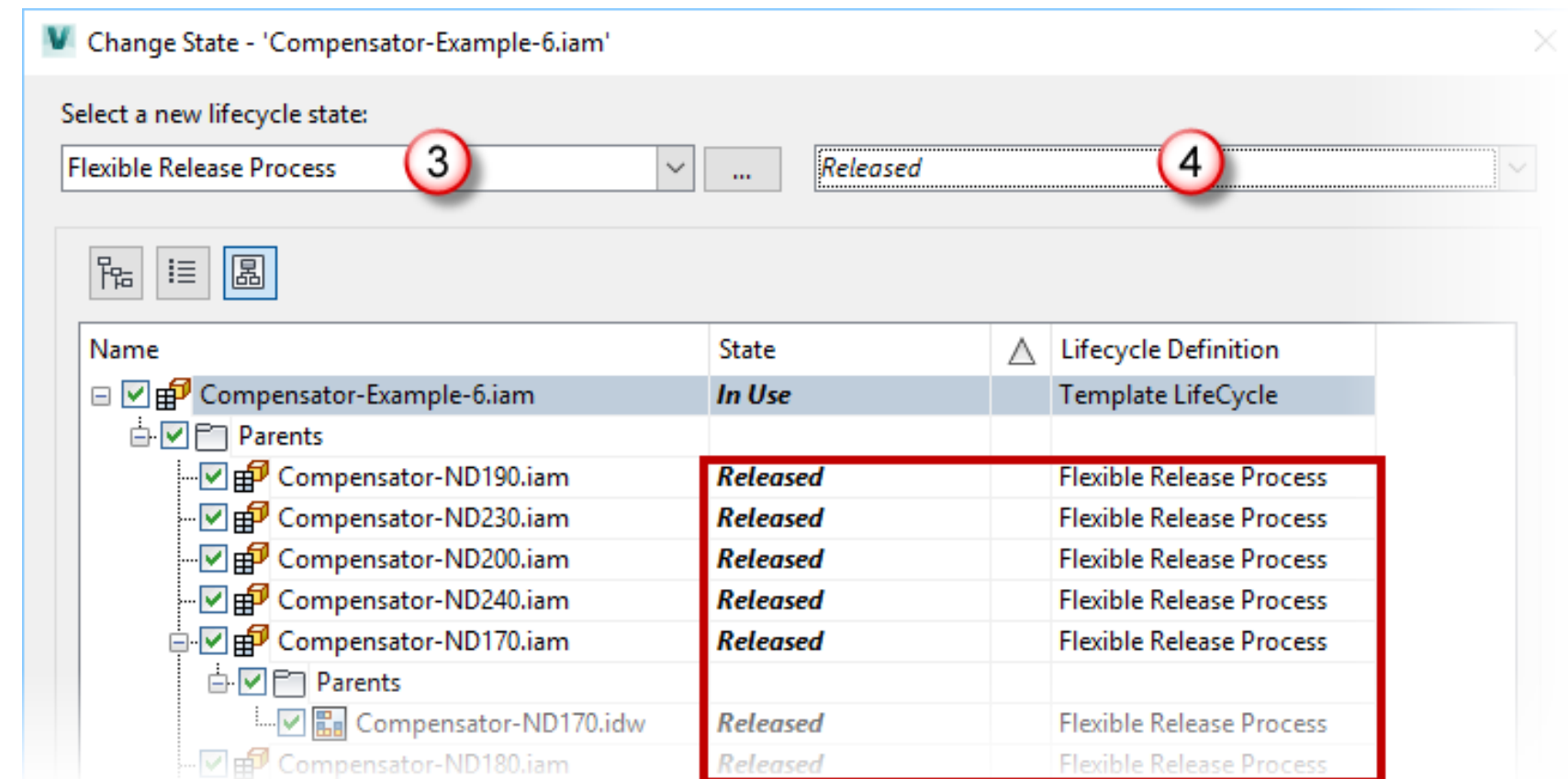
- Select factory -> change state
- Include direct parents only
- Set state for factory
- Set state for members



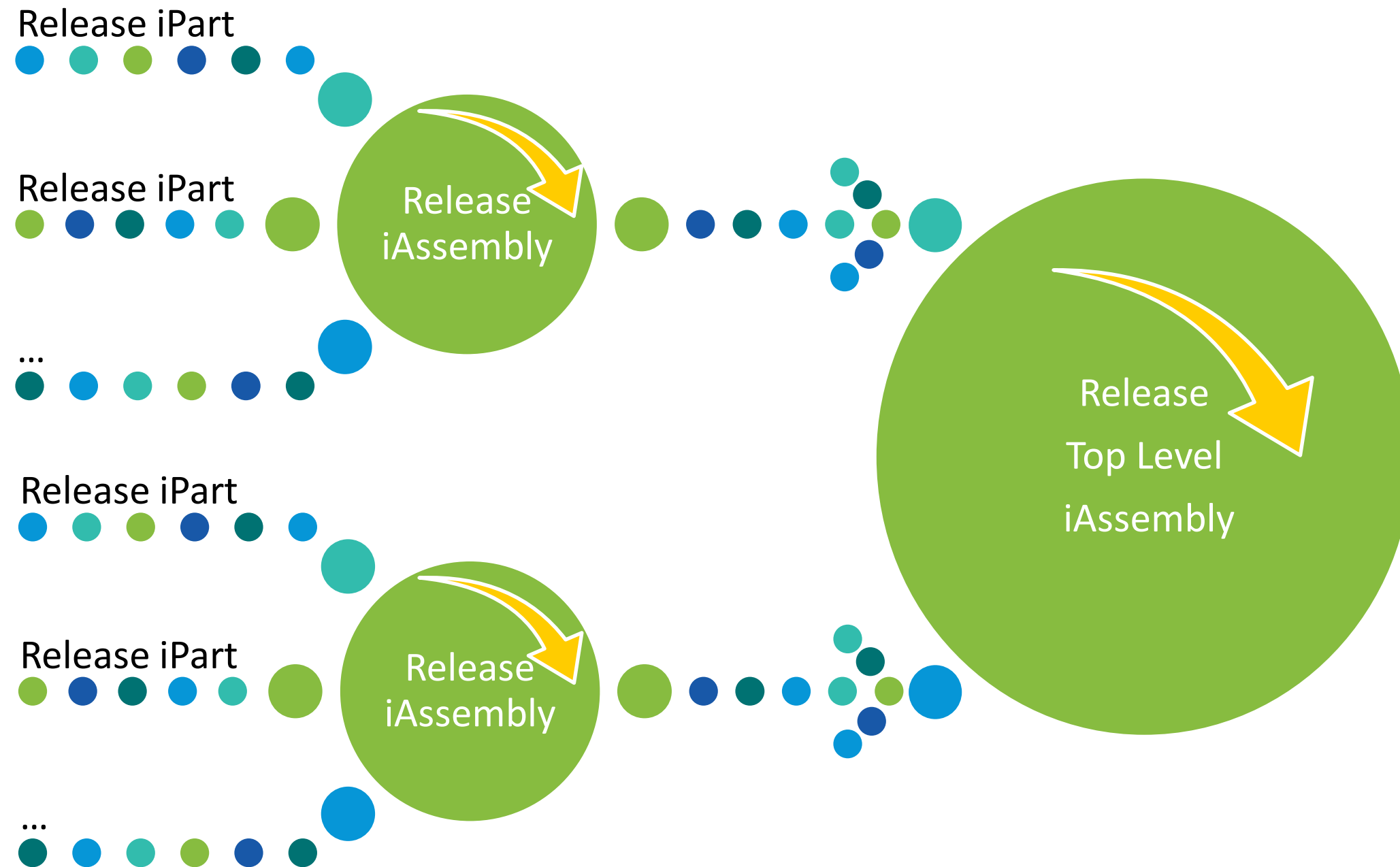
# Initial Release | iAssembly Factory / Members

Release entire family [& documentation]

- Select factory -> change state
- Include direct parents only\*\*
- Set state for factory
- Set state for members



# Initial Release | Multi-Level – iAssembly



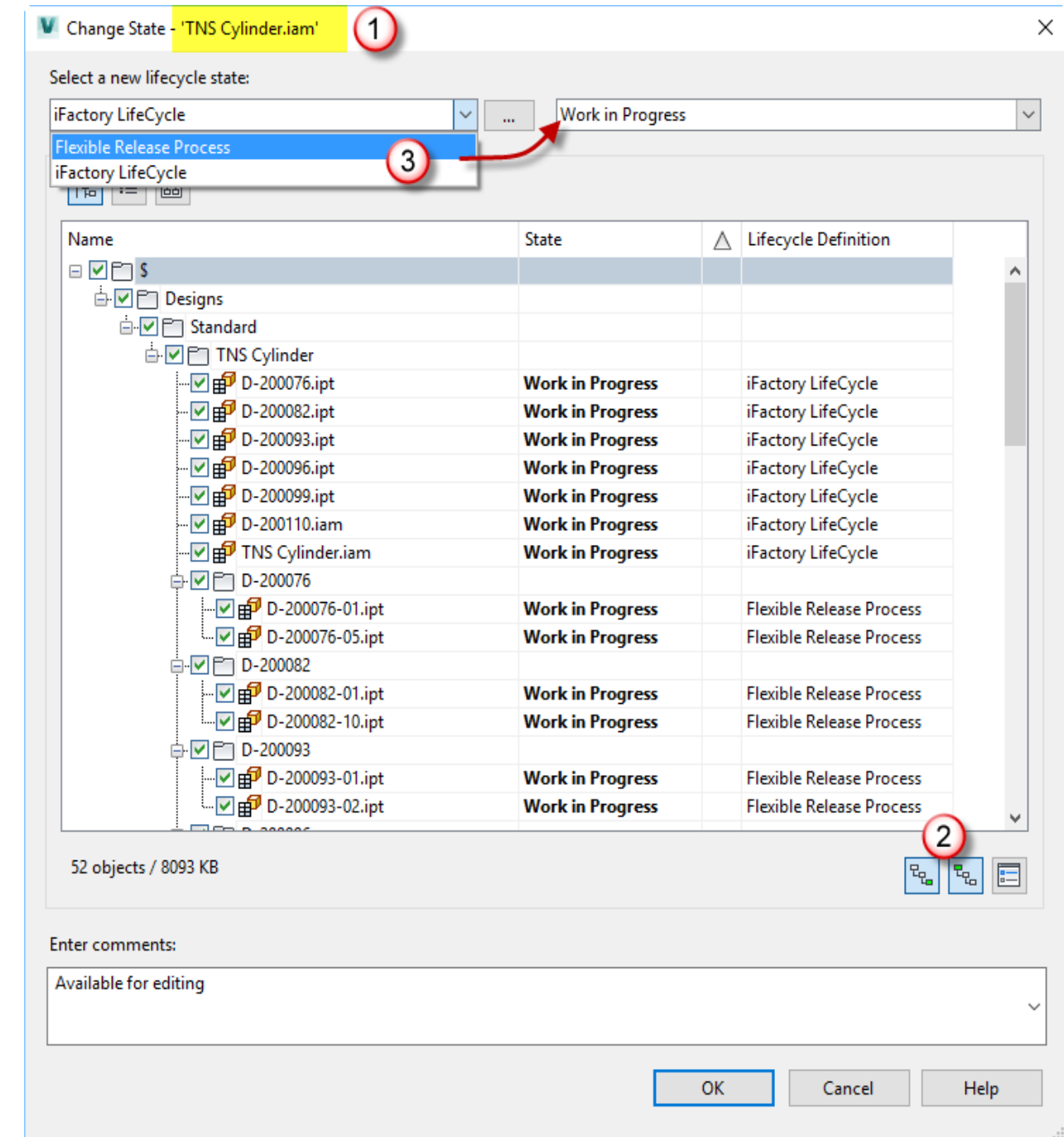
# „iFamily“ Revision | „Overall“ or „Smart“

Scope of change ?

- All members  
⇒ universal / overall revision
- One or a few members?  
⇒ Partial / “smart” revision

# „iFamily“ Revision | „Overall“

- Factory and all member files increment revision



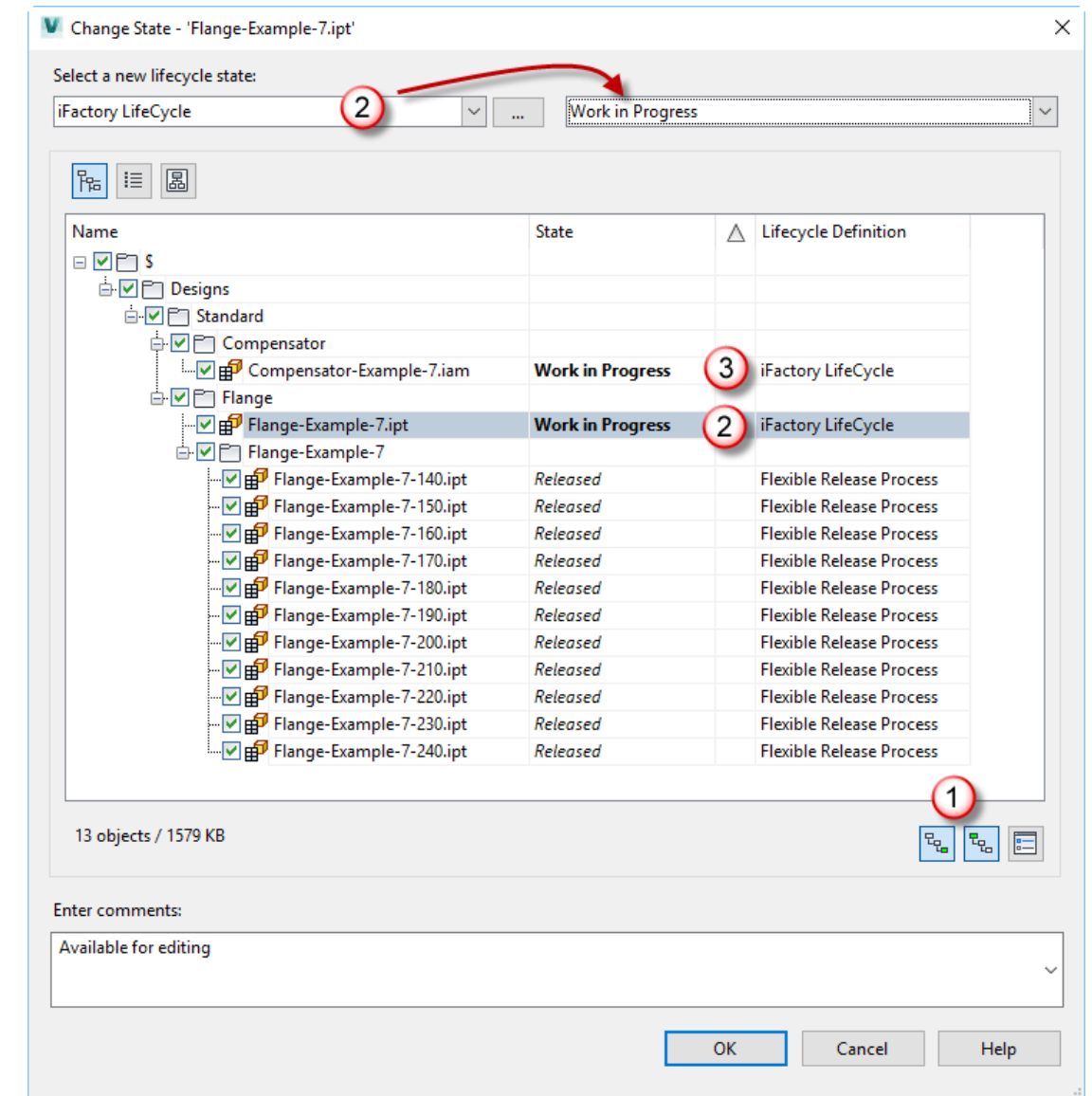
# „iFamily“ Revision | „Overall“

## ■ Result

History Uses Where Used Change Order Preview CAD BOM Datasheet									
B In Use									
File Name	Category Name	Revision	Ve...	Title	Part Number	State (Histor			
TNS Cylinder.iam	iAssembly Factory	B	8	TNS Cylinder	02-0029	In Use			
D-200099.ipt	iPart Factory	B	6	Piston	D-200099-01	In Use			
D-200099-10.ipt	iPart Member	B	6	Piston	D-200099-10	Released			
D-200110.iam	iAssembly Factory	B	10	Cylinder Body	D-200110-01	In Use			
D-200076.ipt	iPart Factory	B	6	Threaded Shaft 2-sided	D-200076-01	In Use			
D-200076-01.ipt	iPart Member	B	7	Threaded Shaft 2-sided	D-200076-01	Released			
D-200082.ipt	iPart Factory	B	9	Piston Body	D-200082-01	In Use			
D-200082-01.ipt	iPart Member	B	6	Piston Body	D-200082-01	Released			
D-200093.ipt	iPart Factory	B	7	Piston Bottom Cover	D-200093-02	In Use			
D-200093-01.ipt	iPart Member	B	6	Piston Bottom Cover	D-200093-01	Released			
D-200096.ipt	iPart Factory	B	6	Piston Top Cover	D-200096-01	In Use			
D-200096-01.ipt	iPart Member	B	6	Piston Top Cover	D-200096-01	Released			

# „iFamily“ Revision | „Smart“

- Revise Factory
  - ⇒ Watch for changes on member files
  - ⇒ Revise edited member files



# „iFamily“ Revision | „Smart“

## ■ Result

Compensator

(C:\PL20989\Designs\Standard\Compensator\)

Name

State

Revision

Folder

File

000006.iam

Compensator-Example-6.iam

Compensator-Example-7.iam

Released

Work in Progress

In Use

A

A

B

History

Uses

Where Used

Change Order

Preview

CAD BOM

Datasheet

B

In Use

Name

Title

Part Number

Revision

State (Historical)

Compensator-Example-7.iam

Compensator-Ex7-ND140.iam

000006.iam

Compensator-Ex7-ND220.iam

Compensator-Ex7-ND240.iam

000006.iam

Compensator ND140

Compensator ND140

TEST

Compensator ND220

Compensator ND240

TEST

Ex7-01

Ex7-01

000006

Ex7-09

Ex7-11

000006

B

B

A

B

B

A

In Use

Released

Released

Released

Released

Released

# „iFamily“ Revision | Summary

## “Overall”

- Risk free, easy
- Any parent in where used is impacted, even it is not really changed

## „Smart“

- Advanced workflow
- „real“ impact reflected in where used view

# iPart Families | iAssembly Families

## File Handling

# Copy Design | What we do...

iPart/iAssemblies are “shared” libraries

⇒ Copy assemblies

- ... reusing library files and part families members
- ... modifying members as new unique components

⇒ Copy iPart / iAssembly factories

- ... to get a starting point for new family definition(s)

# Copy Design | What we don't...

We don't create new variants / members via Copy Design

⇒ Use the iPart / iAssembly Author instead to create new ones

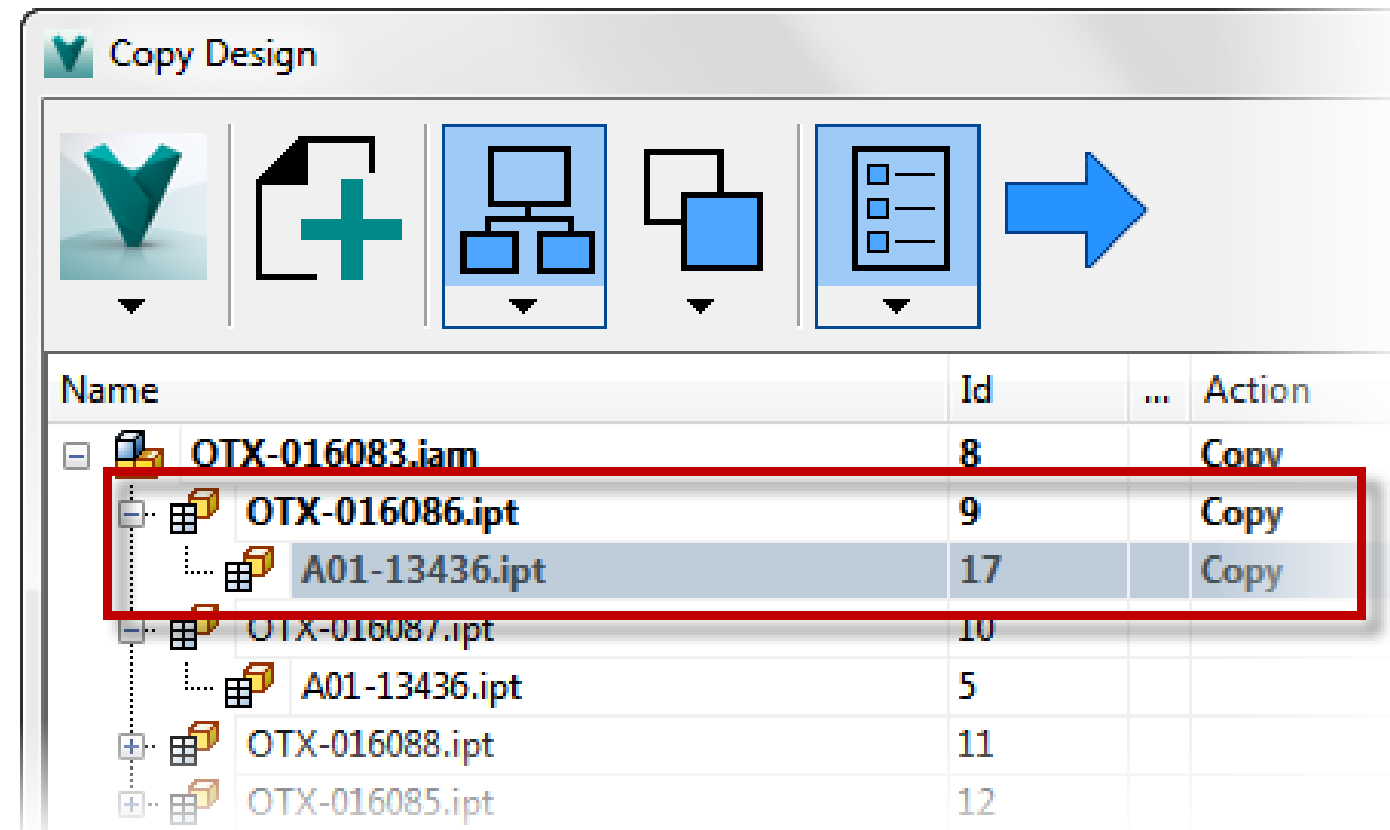
⇒ Use Copy Design to use / replace the new variants

# Copy Design | Member(s) in Assembly

Don't copy Factory/Members  
Otherwise....

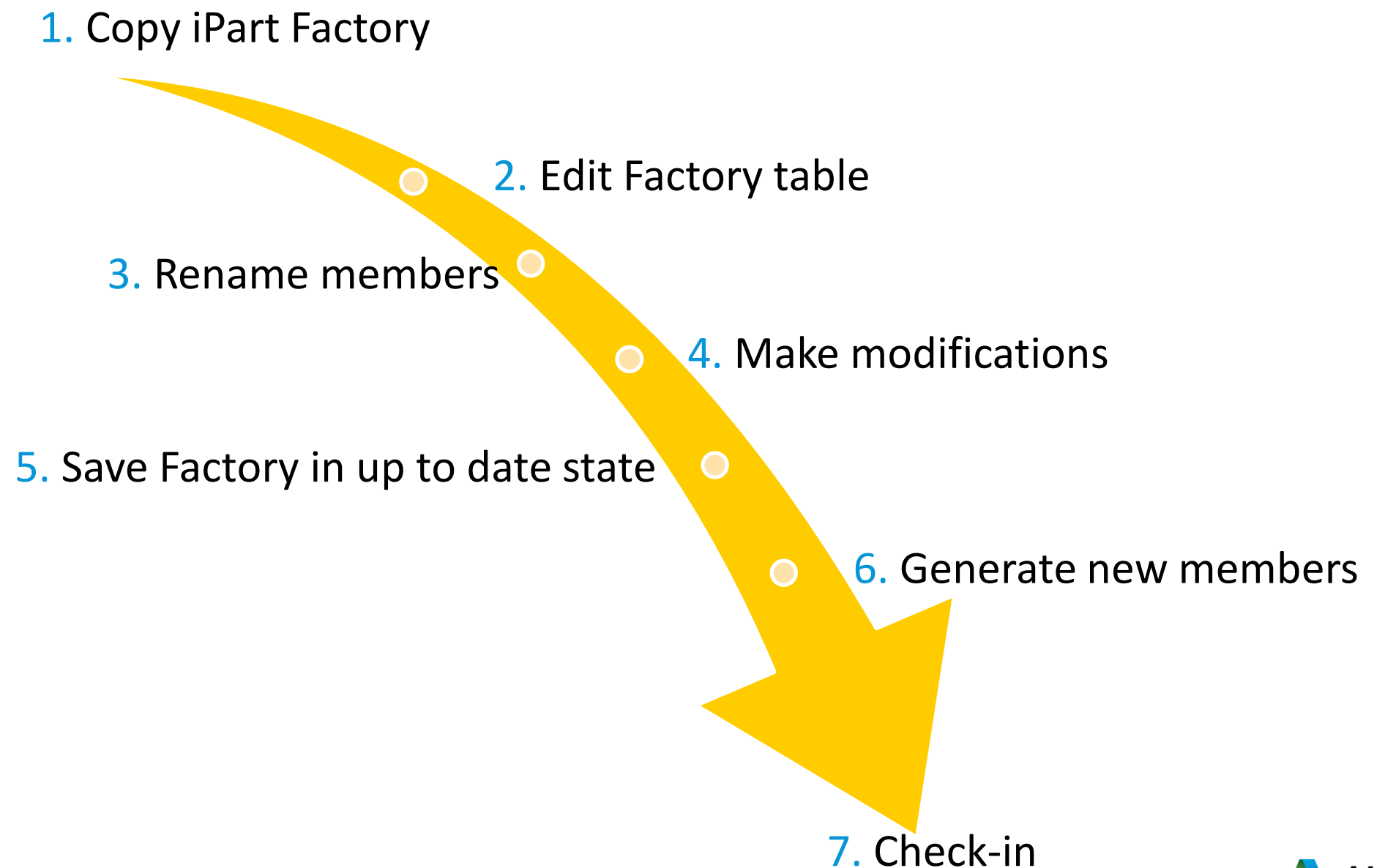
- Links to factory will set to "Broken"

Why ?



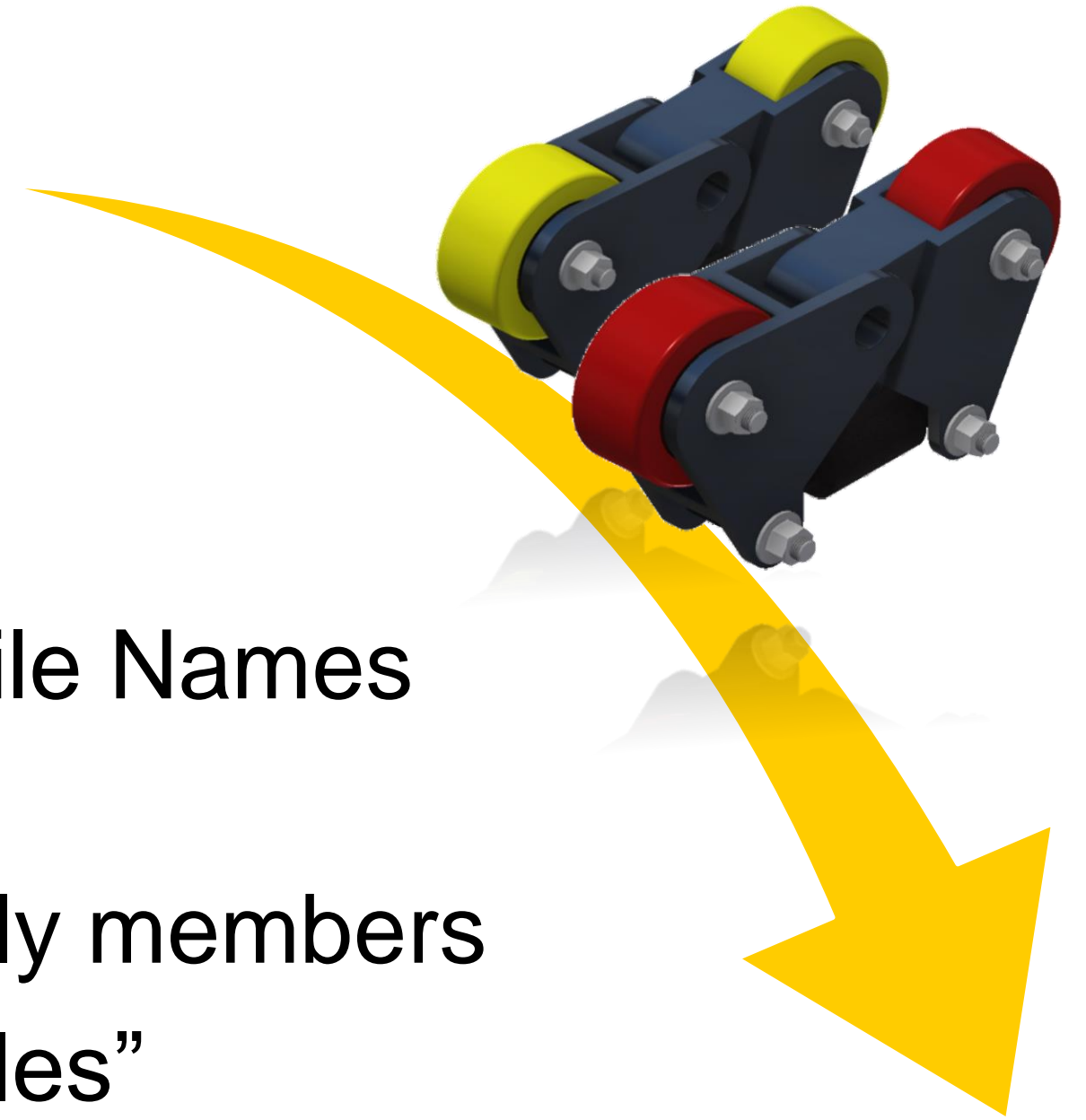
# Copy Design | iPart Factory

## Copy / Save as existing iPart Factory



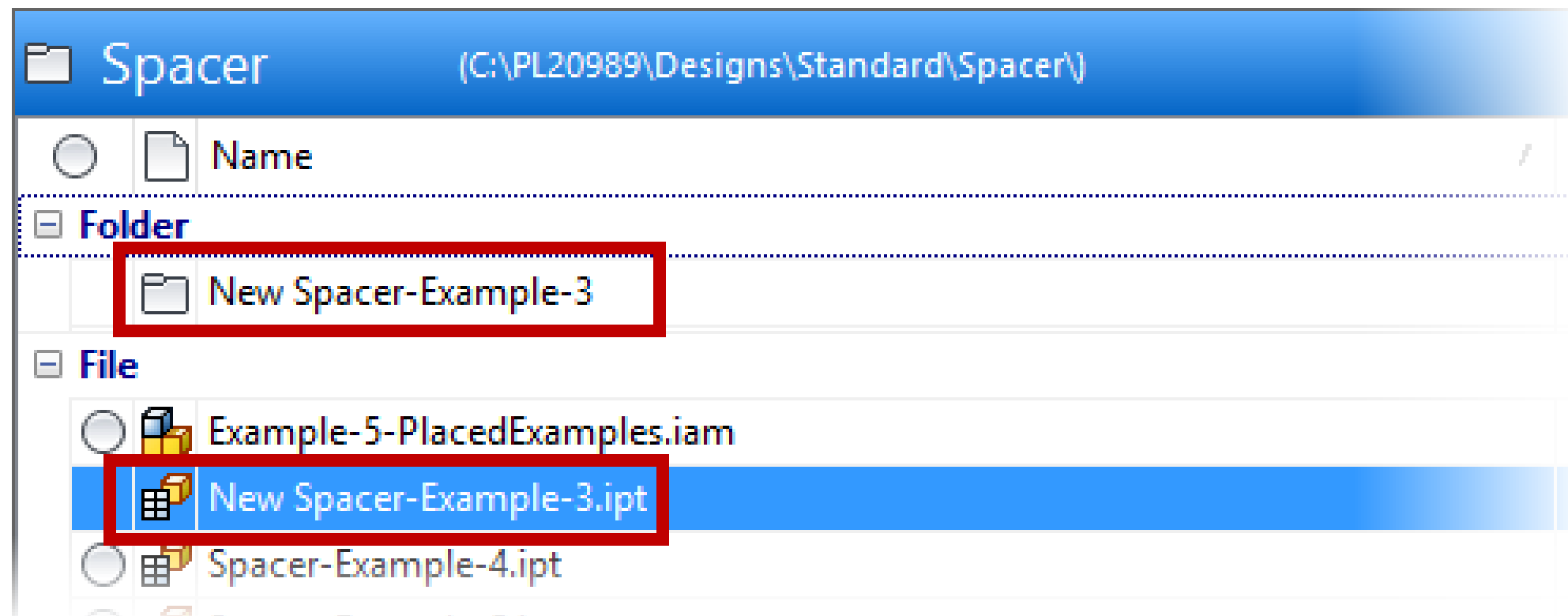
# Copy Design | iAssembly Factory

1. Bottom Up approach
  - iParts first
  - Nested iAssemblies
2. Copy iParts Factory separately
  - Regenerate Members with new File Names
3. Copy Design – iAssembly
  - Replace with new iParts/iAssembly members
  - Open copy, edit and “Generate Files”



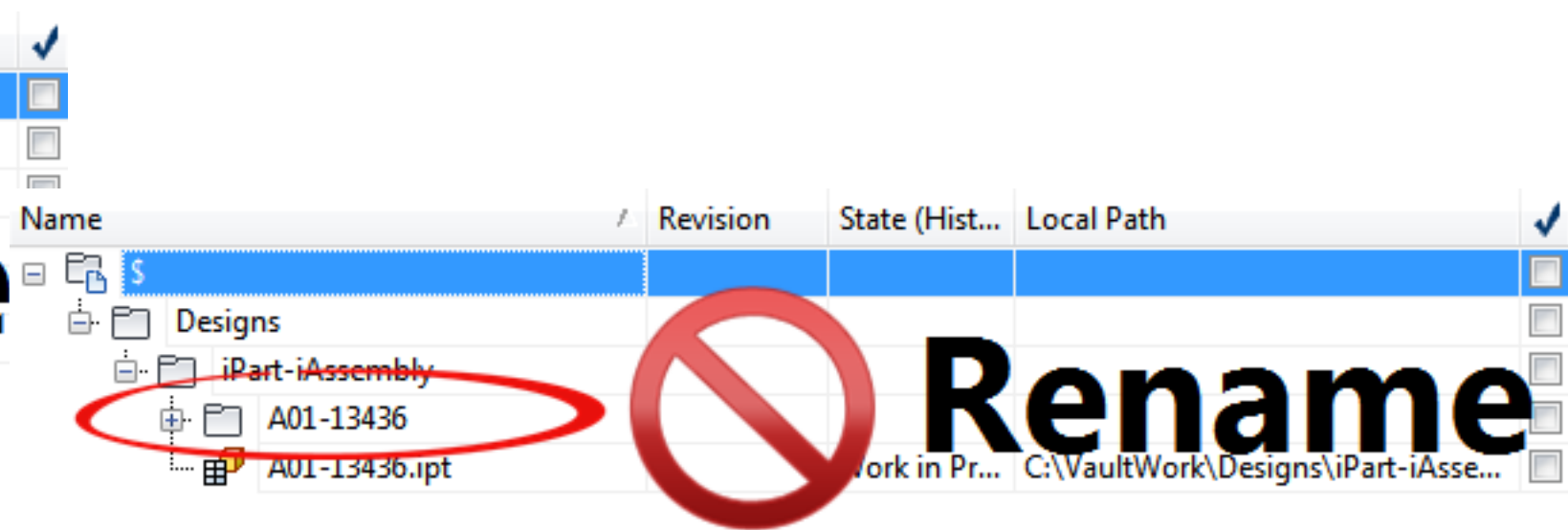
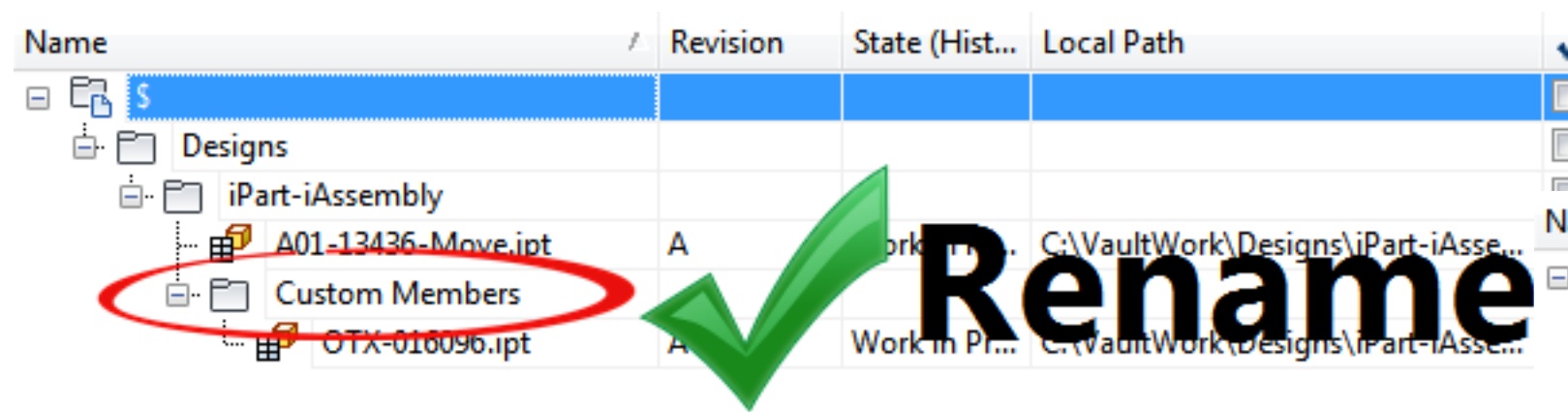
# Rename | Factory

- ✓ Factory files rename, if the subfolder is named as expected.  
**Expected name = Factory name**
- ✓ Factory renaming will update the subfolder as well
- ⇒ Renaming a factory = rename + re - organization



# Rename | Factory - Subfolder

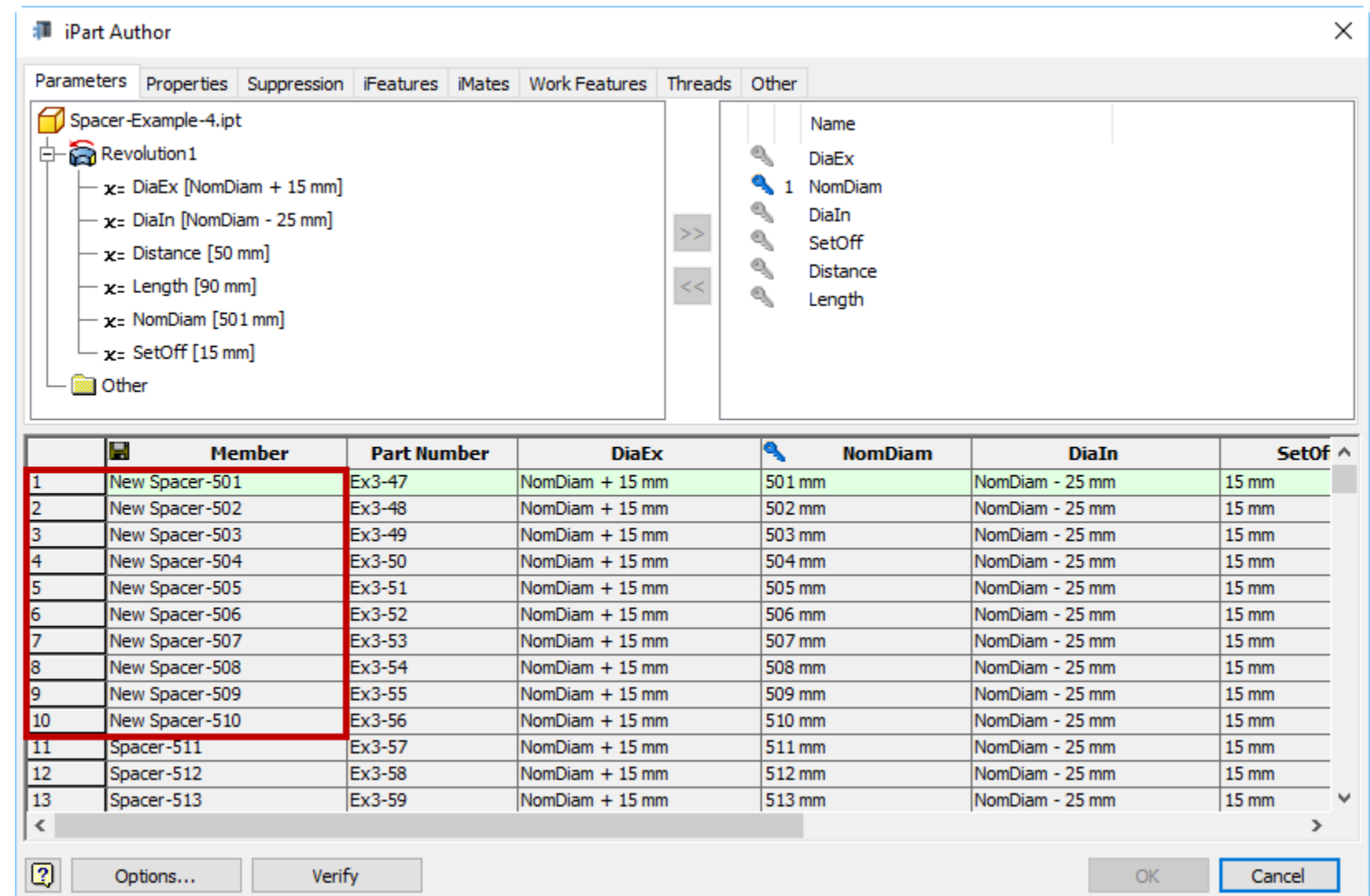
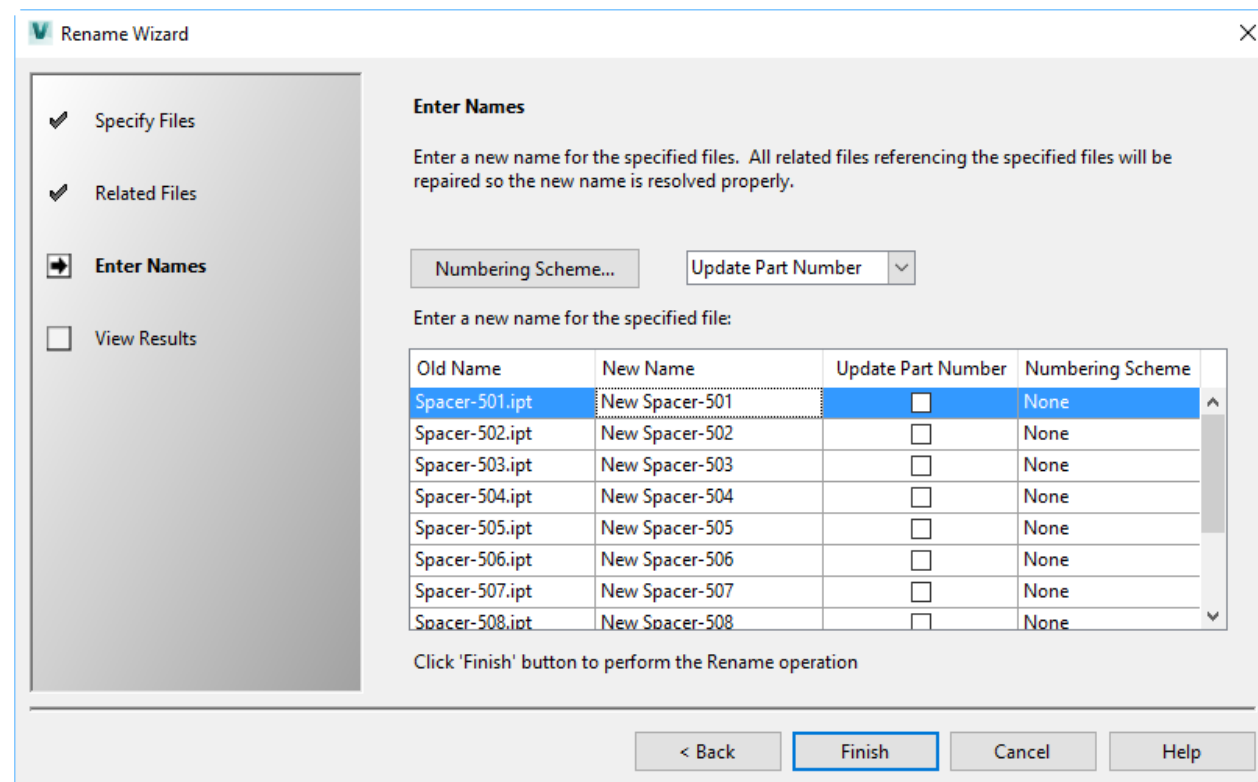
- Note – Vault helps to solve violations of iPart organization
- In case the subfolder for member parts is not set to the factory file name, Vault allows to rename the subfolder
  - Once the subfolder is aligned to the naming convention, renaming of subfolders is blocked



# Rename | Standard Member(s)

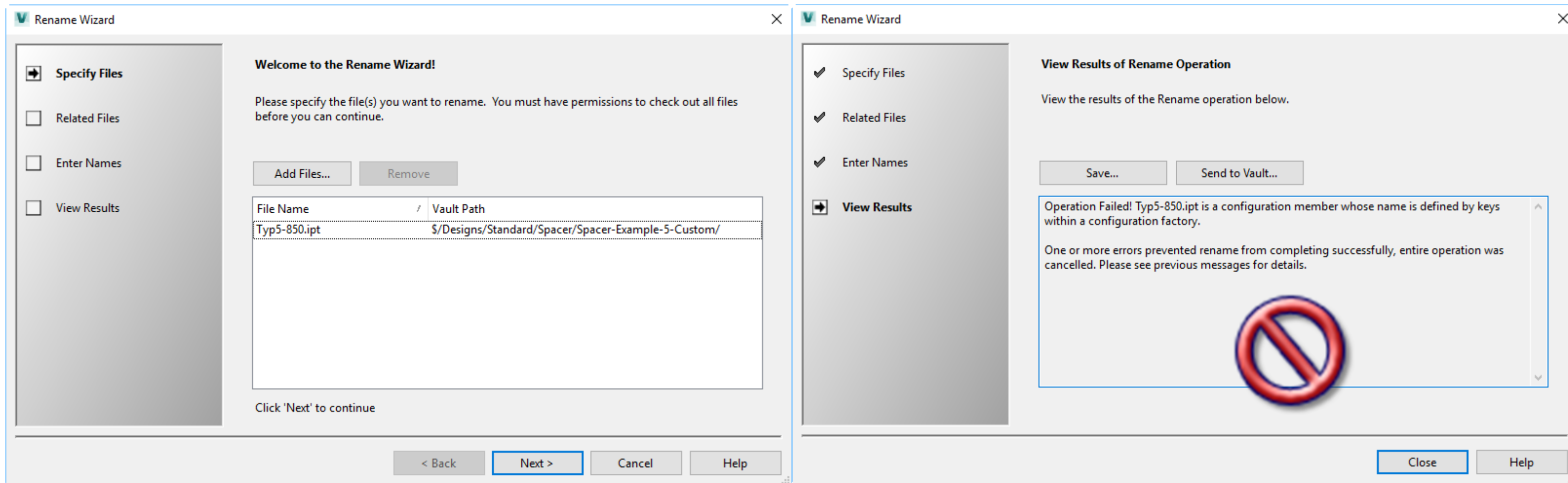
Standard members..

- ✓ Rename
- Update the factory table\*



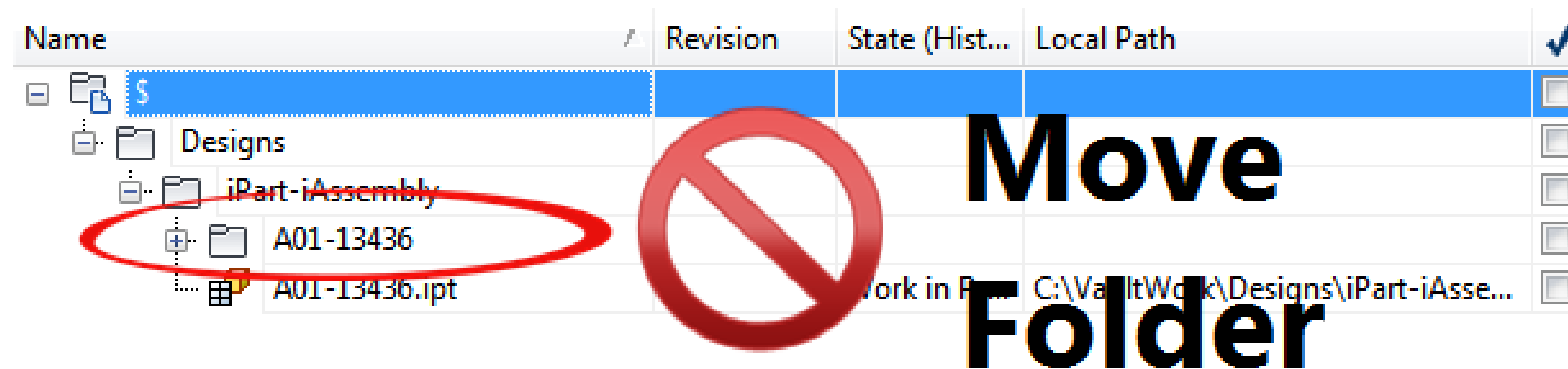
# Rename | Custom Member(s)

- Custom members don't allow rename\*



# Move | iPart Factory

- ✓ Factory files move, if the subfolder is named as expected.  
**Expected name = Factory name**

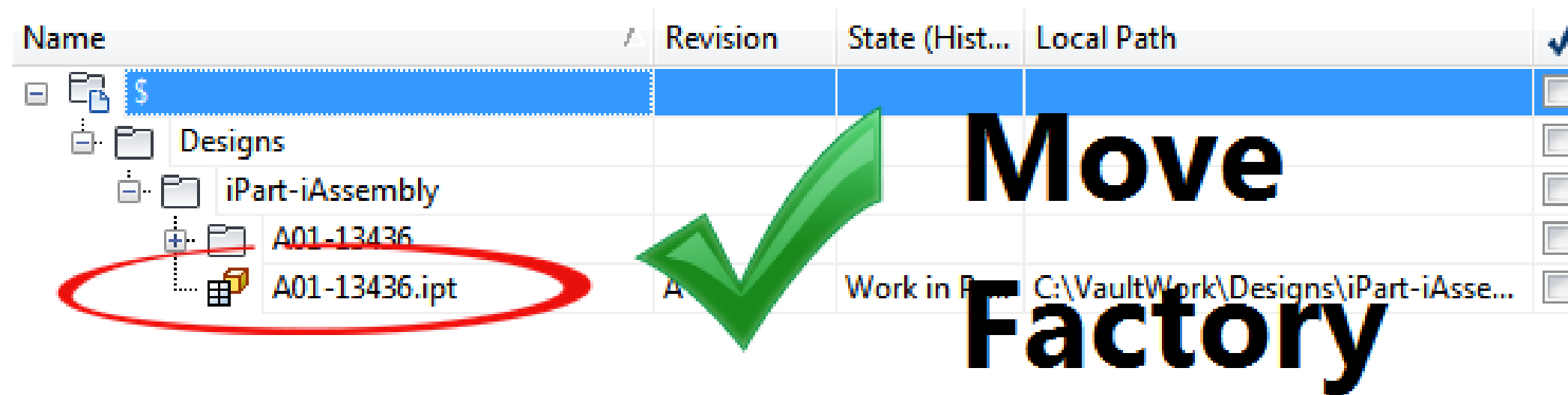


Name	Revision	State (Hist...	Local Path	✓
\$				<input type="checkbox"/>
Designs				<input type="checkbox"/>
iPart-iAssembly				<input type="checkbox"/>
A01-13436				<input type="checkbox"/>
A01-13436.ipt			C:\VaultWork\Designs\iPart-iAsse...	<input type="checkbox"/>

**Move Folder**

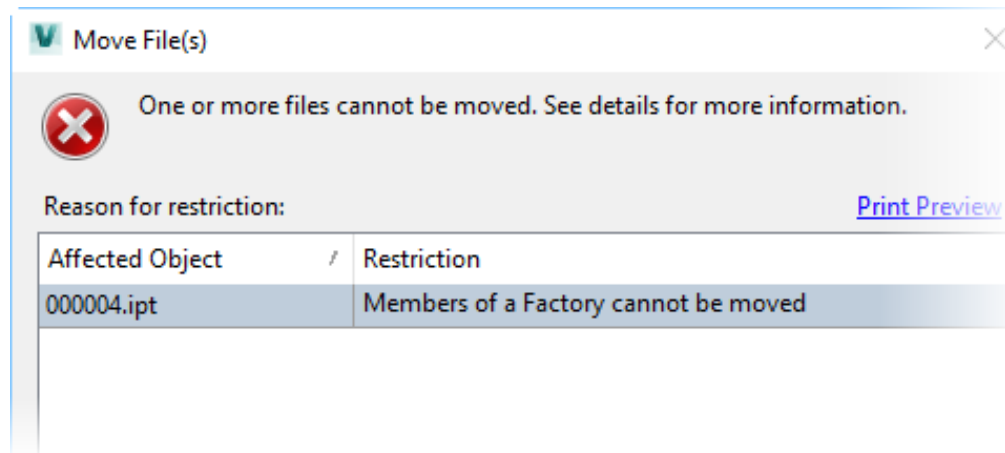
# Move | iPart Factory

- ✓ Factory files move, if the subfolder is named as expected.  
**Expected name = Factory name**
  - ✓ Factory move will relocate the subfolder and members
- ⇒ Moving a factory is a relocation of the complete family



# Move | iPart Member(s)

- Move Standard Members – prevented in general
- Move **Custom** Members – ***prevented*** in general



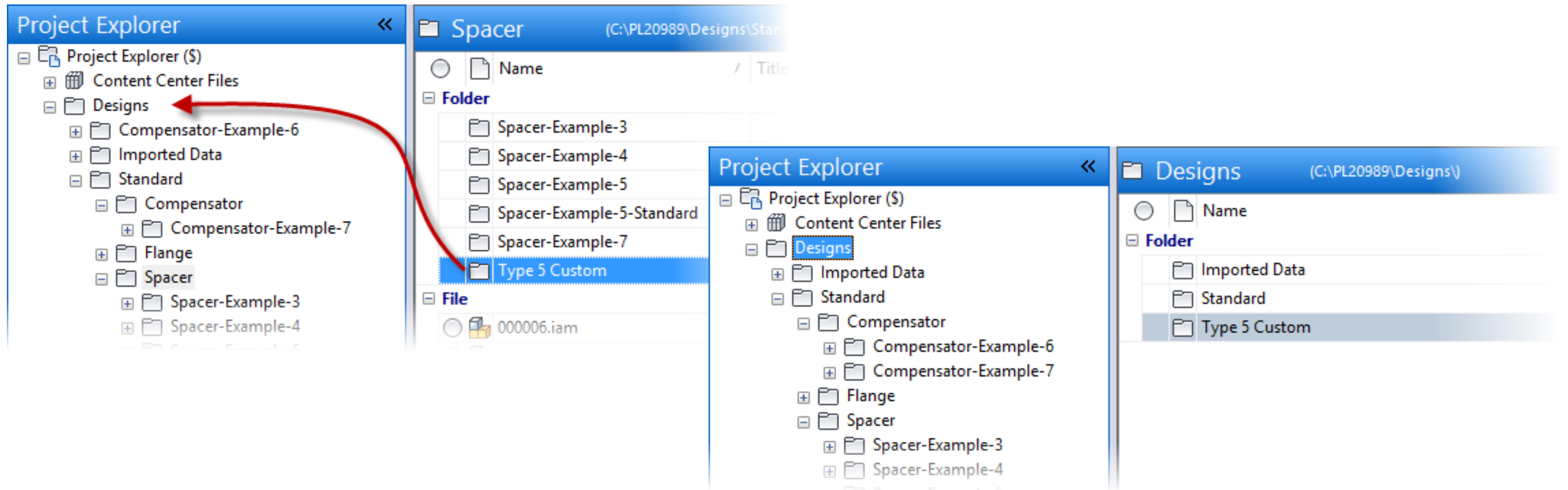
## Restriction

Members of a Factory cannot be moved

- ⇒ Again – iPart Families are managed as a whole
- ⇒ To move particular member(s), Inventor needs to break the link before

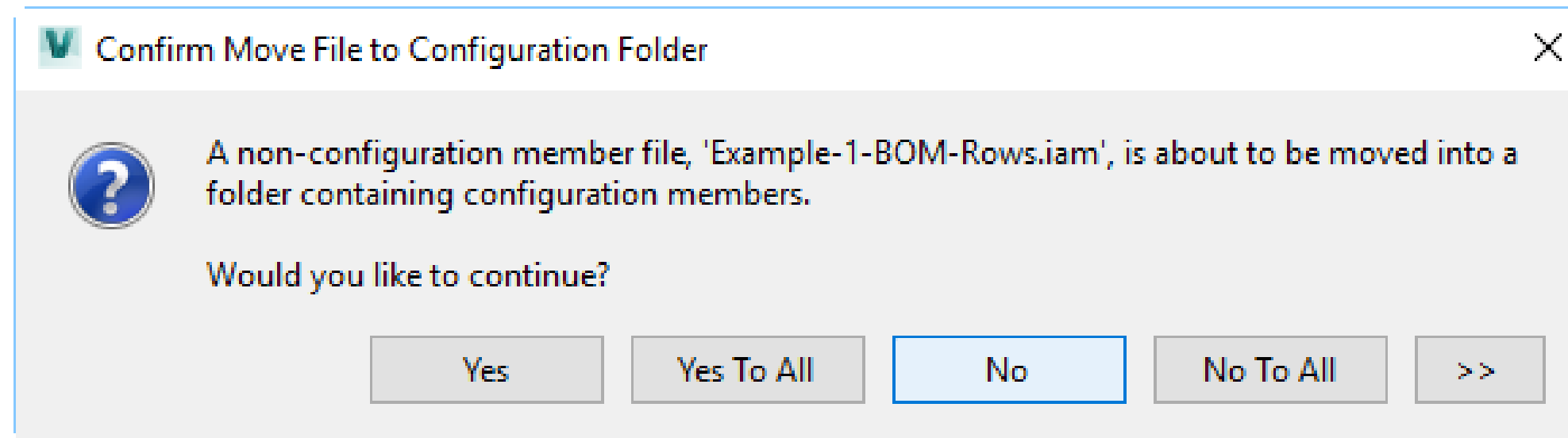
# Move | Custom iPart Folder

- Custom configuration folders move



# Move | iPart Members folder

- Avoid to move design files into members folder



- Remember - moving Factory, all files in the members folder will be moved

# File Handling | Summary

- Copy
  - Reuse members
  - Create new variants first and replace copying
- Rename / Move
  - Manage the factory to reorganize the entire family

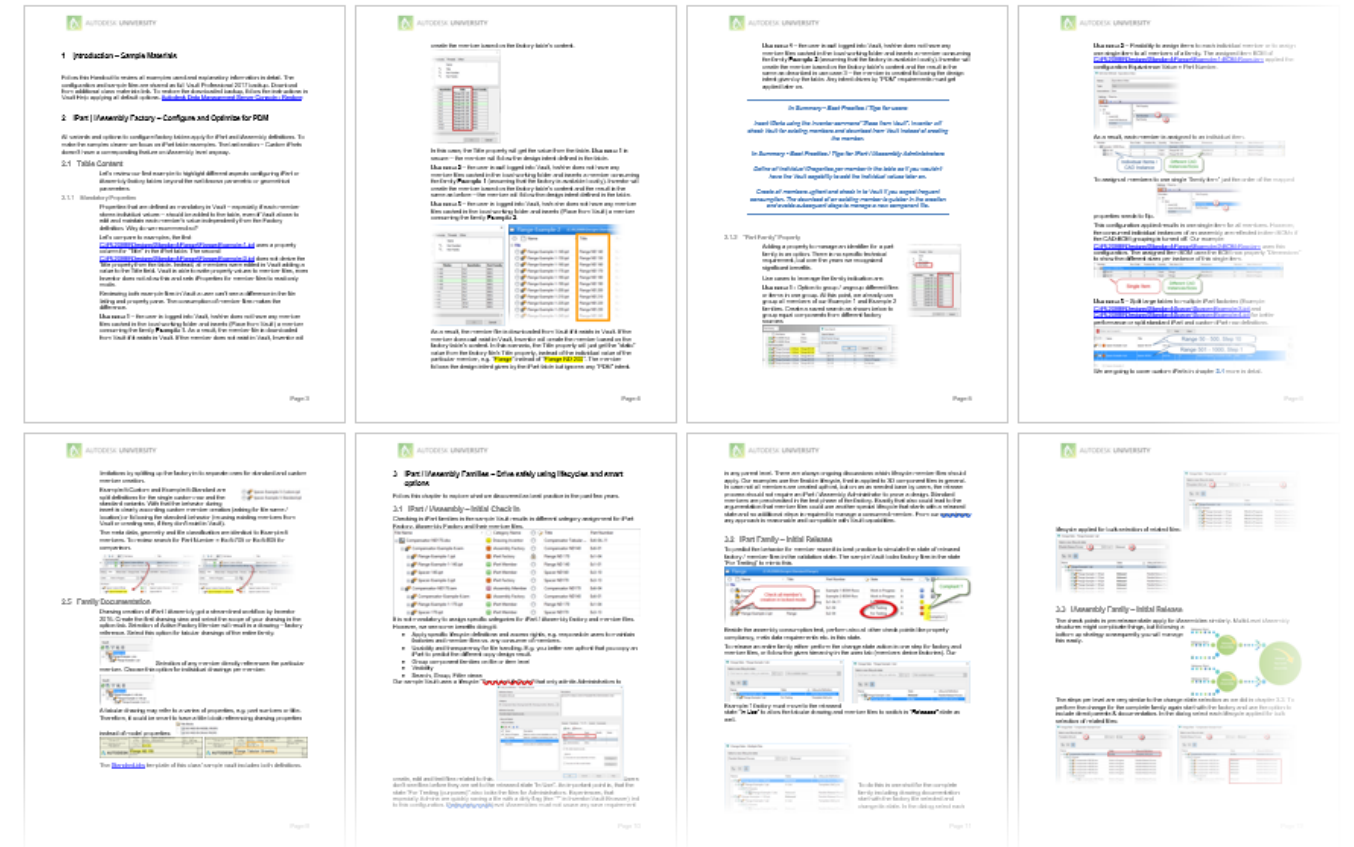
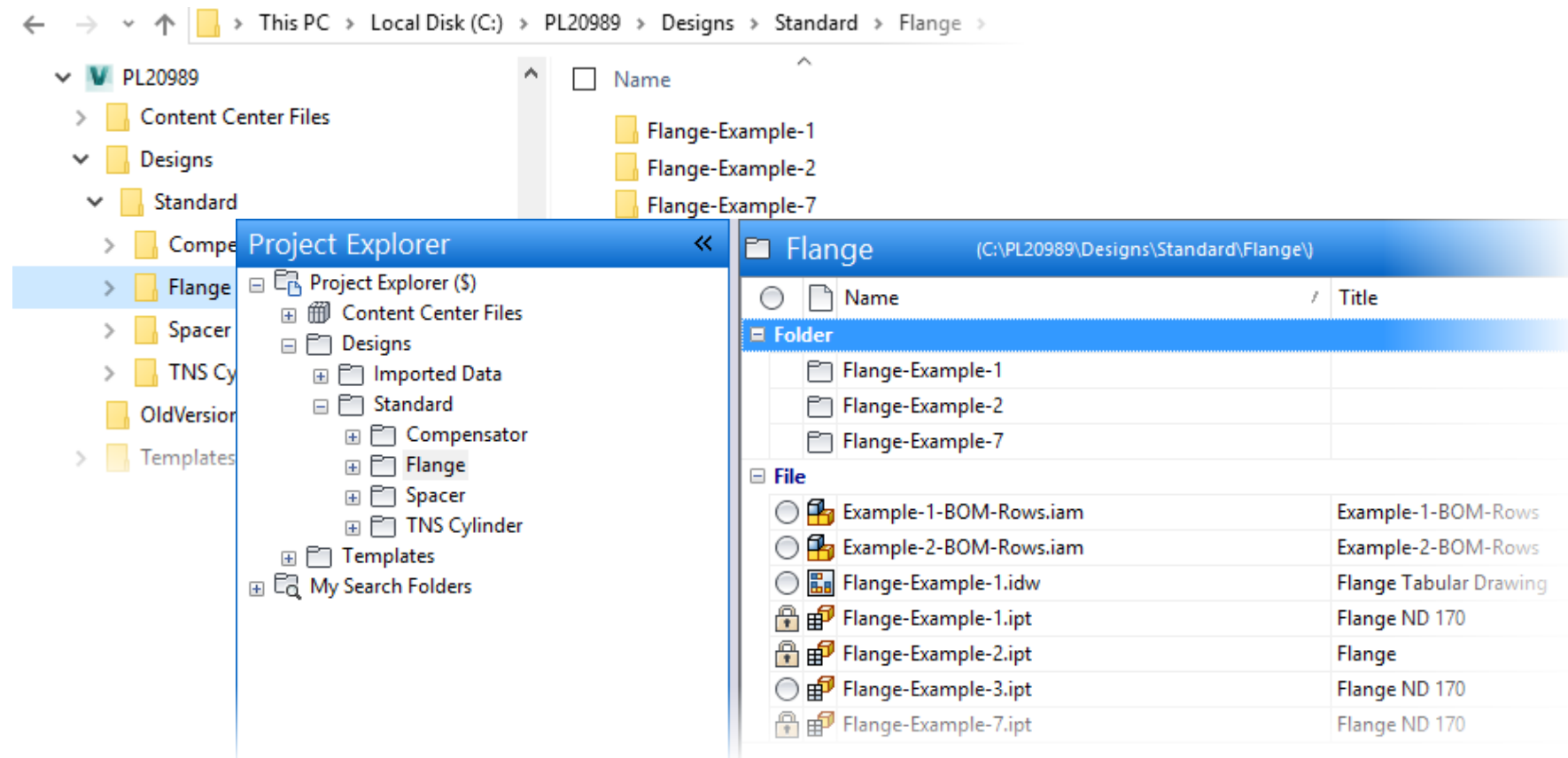
# Managing iPart/iAssemblies | Key Learnings

- Factory Authoring
  - Matching Options make your family robust
  - Meta Data included enhance PDM capabilities & workflows
- Vault Configuration
  - Category & Lifecycles to manage factory files => Fearless Consumption
- Lifecycle and Revision
  - Keep it simple = manage the family as a whole
  - Keep it smart = manage the family / members on as needed basis
- File Handling
  - Powerful factory handling
  - Reasonable restrictions for member files

# ... what you can do to follow up and review

Download sample Vault / Full Backup or local Inventor files

Recap examples and background information following the Hand Out



# How did we do?

- Your class feedback is critical. Fill out a **class survey** now.
- Use the AU mobile app or fill out a class survey online.
- Give feedback after each session.
- AU speakers will get feedback in real-time.
- **Your feedback results in better classes and a better AU experience.**



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- Seek answers to all of your technical product questions by visiting the **Answer Bar**.
- Open daily from **8am-6pm Tuesday** and **Wednesday**; **8am-4:30pm Thursday**.
- Located outside **Hall C, Level 2**.
- Meet Autodesk developers, testers, & support engineers ready to help with your most challenging technical questions.



