

PL6547: All You Want to Know About Items in Vault Professional

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Your Instructors



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- Senior Principal Engineer
- Developer in the Data Management Group mainly on Vault Server
- 14 years at Autodesk
- 10 Years in the Data Management Group working on Vault
- Holds a Master's degree in Computer Science



Anil Chintamaneni

- Senior User Experience Designer
- Works in the Data Management group mainly on the Vault software product line
- 9 years at Autodesk
- Worked as a Product Data Collaboration Engineer at Ford Motor Company
- Holds a Master's degree in Mechanical Engineering.

Assumptions

- Knowledge of Item functionality
 - Especially previous releases

Class summary

- Item Related Improvements
- Handout
- Questions
- Autodesk

Key learning objectives

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

- Use the new Item BOM enhancements
- Administer and use Lifecycles on Items.
- Administer and use Item BOM Row Properties
- Create and use Item BOM Reports

2015 Item BOM Enhancements

2015 Item BOM Enhancements - Overview

- Assign Item
- Item Dialog
- BOM Tab

Vault 2015 Item BOM Enhancements

Assign Item

Assign Item - Long Lead Items

- Workflows involving a partial assembly
 - BOM Components
 - Excluded rows
 - Items to be created before CAD data
 - BOM structure to be defined in advance of CAD data

Assign Item - BOM Component

- CAD Component
 - Purpose (root) of a file
 - Subcomponent
 - Virtual component
 - Part Reference

Model Data						
Structured		Parts Only (Disabled)				
	Part Number	Thumbnail	BOM Structure	Unit QTY	QTY	S
▶	 ipt_component	Preview not available	 Normal	Each	1	
	 virtual_Component1	Preview not available	 Normal	Each	1	
	 virtual_Component2	Preview not available	 Normal	Each	1	

Assign Item - BOM Component

Assembly_AU1 - Work In Progress - Item

File Edit View Actions Help

Save Exit Edit Mode Mechanical Bill of Mat...

General History Bill of Materials Where Used Change Order View

Latest Work In Progress Today Multi-Level All Rows

Number	Row Order	Position Number	Quantity	Title (Item,CO)	Revision	...	State (Historical)
Assembly_AU1	-	-	-	Assembly_AU1	-		Work In Progress
... [Component Icon]	1	1	1 Each				
... [Component Icon]	2	2	1 Each				
... [Component Icon]	3	3	1 Each				

- Not forced to link to an item
- Component icon

Assign Item - BOM Components

- Does not impact Lifecycle
- Ignored during relationship gathering
- Not Exported
- Ignored by BOM Compare

Assign Item - BOM Components

- Promoted to an item
 - Light bulb
 - Right Click -> Turn Row On
 - Right Click -> Assign To
 - Right Click -> Turn Branch On
 - Drag and Drop

Number			
▶  	bomcompare		
	virtualPurchased		
	virtualInseperable		
	bc_subasm1		
	bc_part1		
	bc_subasm2		
	bc_subasm3		
	VirtualComp1		
 	bc_subasm4		
	bc_subasm4_v1		
	bc_subasm4_v2		
	bc_subasm4_v3		

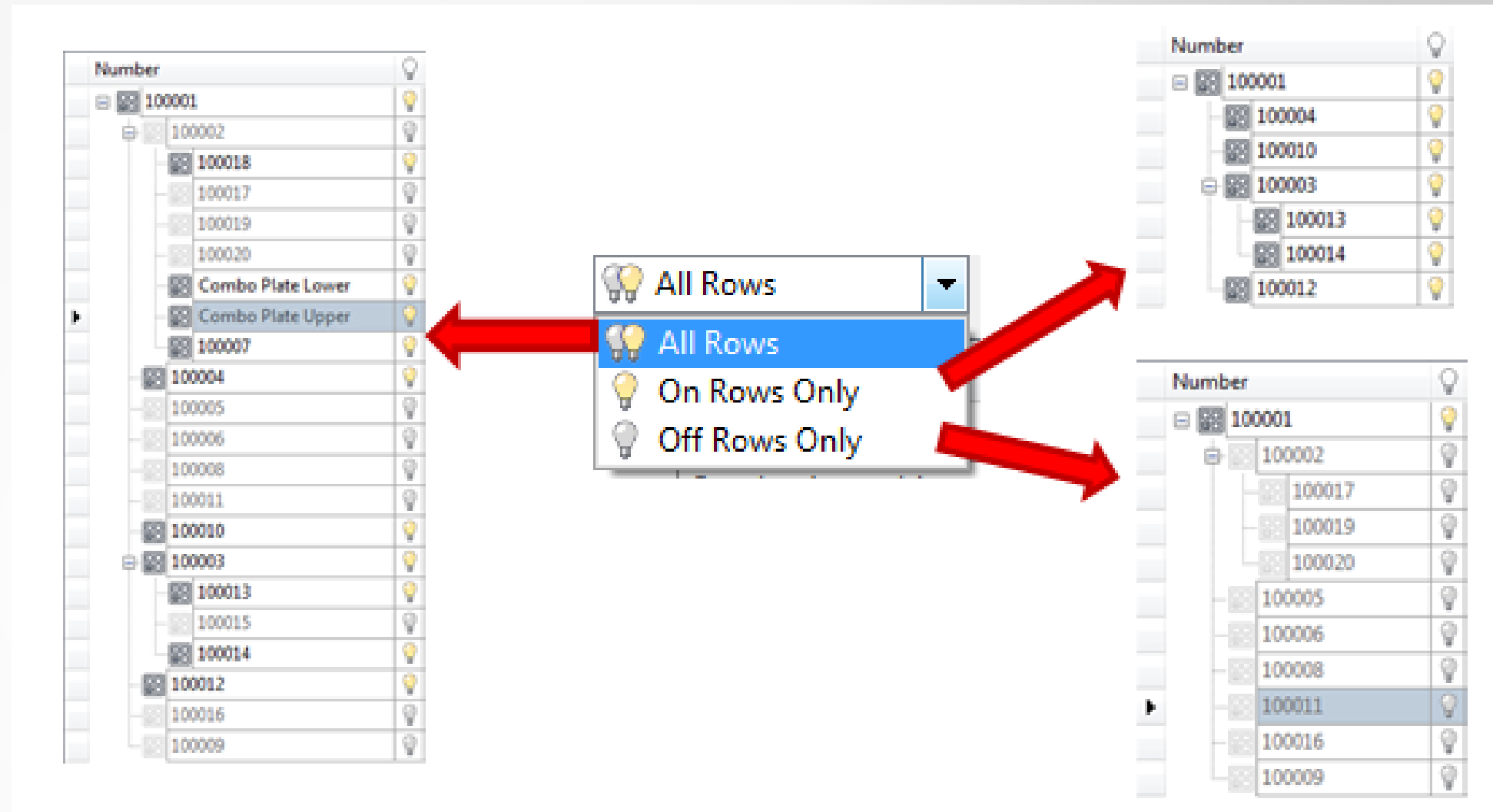
Assign Item - Excluded Rows

Number		⚡	Row Order	Detail ID	Position Number
▶	bc_subasm4	💡	-	-	-
	bc_subasm4_v1	💡	1	1	1
	bc_subasm4_v2	💡	2	2	2
	bc_subasm4_v3	💡	3	3	3

- Used in previous versions
- Indicated by a dim light bulb & grey

Assign Item - Excluded Rows

- Can be filtered
 - Components are off
- Ignored by:
 - Lifecycle
 - Relationship gathering
 - Item Export
 - BOM Compare



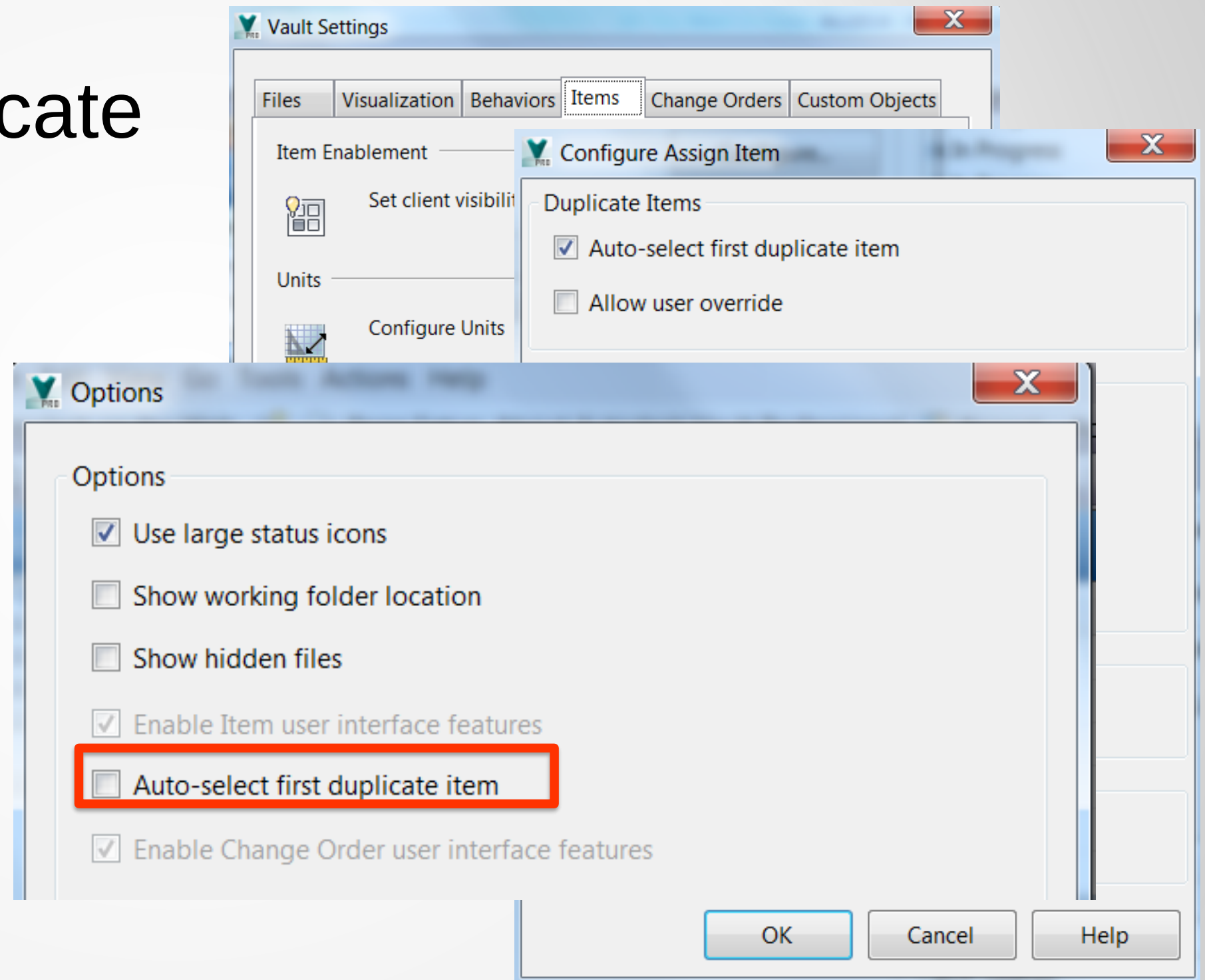
Assign Item - Excluded Rows

- Turned On/Off by:
 - Clicking the light bulb
 - Right Click -> Turn Row On
 - Right Click -> Turn Row Off
- New items are deleted when turned off

Number		
 	100001	
 	100002	
	100018	
	100017	
	100019	
	100020	

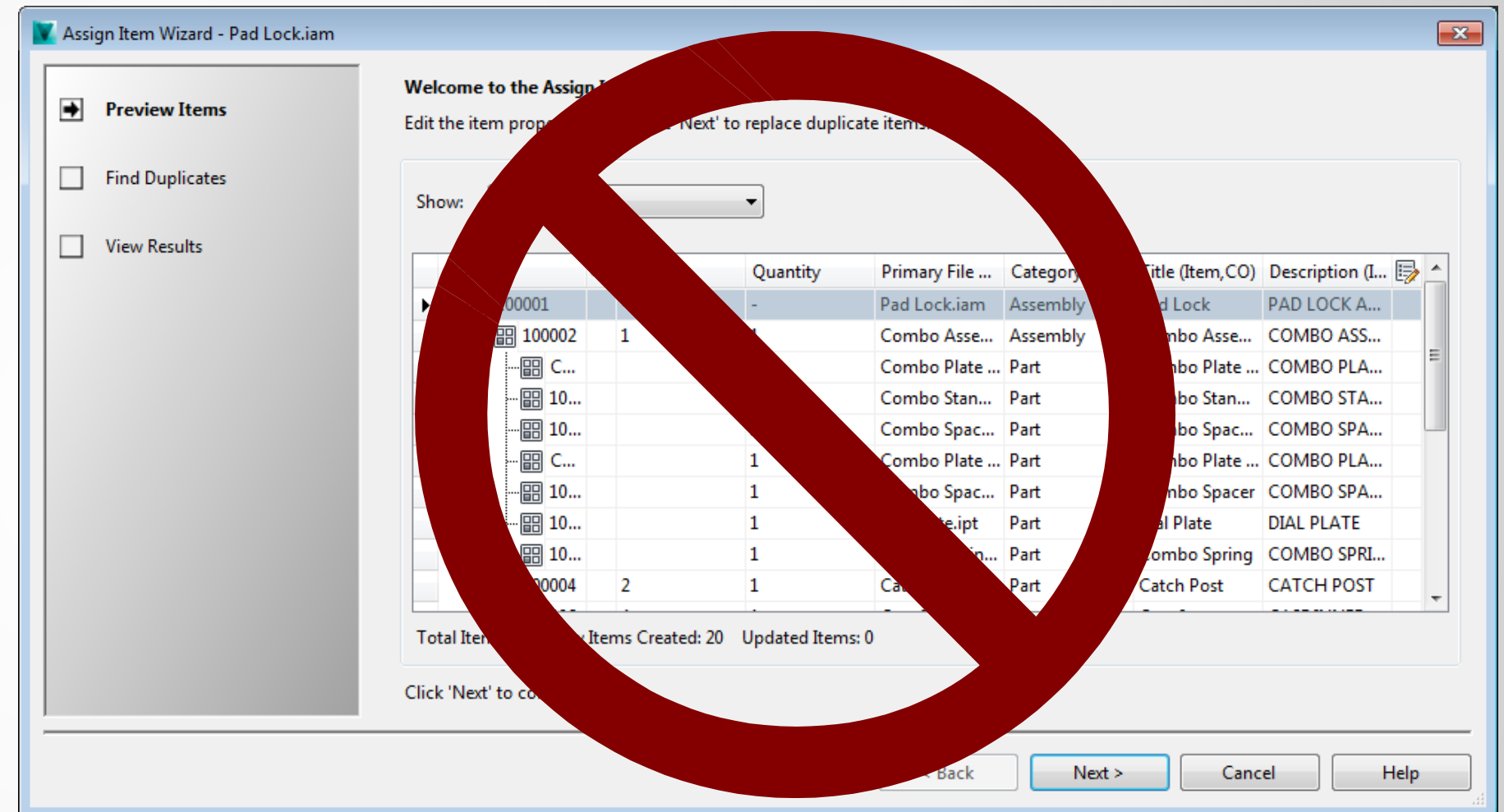
Assign Item - Administration

- Auto-select first duplicate
 - Standard Components
- Rows to turn on
 - None
 - Existing Only
 - All (legacy)
- Default



Assign Item – Workflow Improvements

- Assign Item Wizard removed
- Can Operate on Checked-out files



Demo

Assign Item – Summary

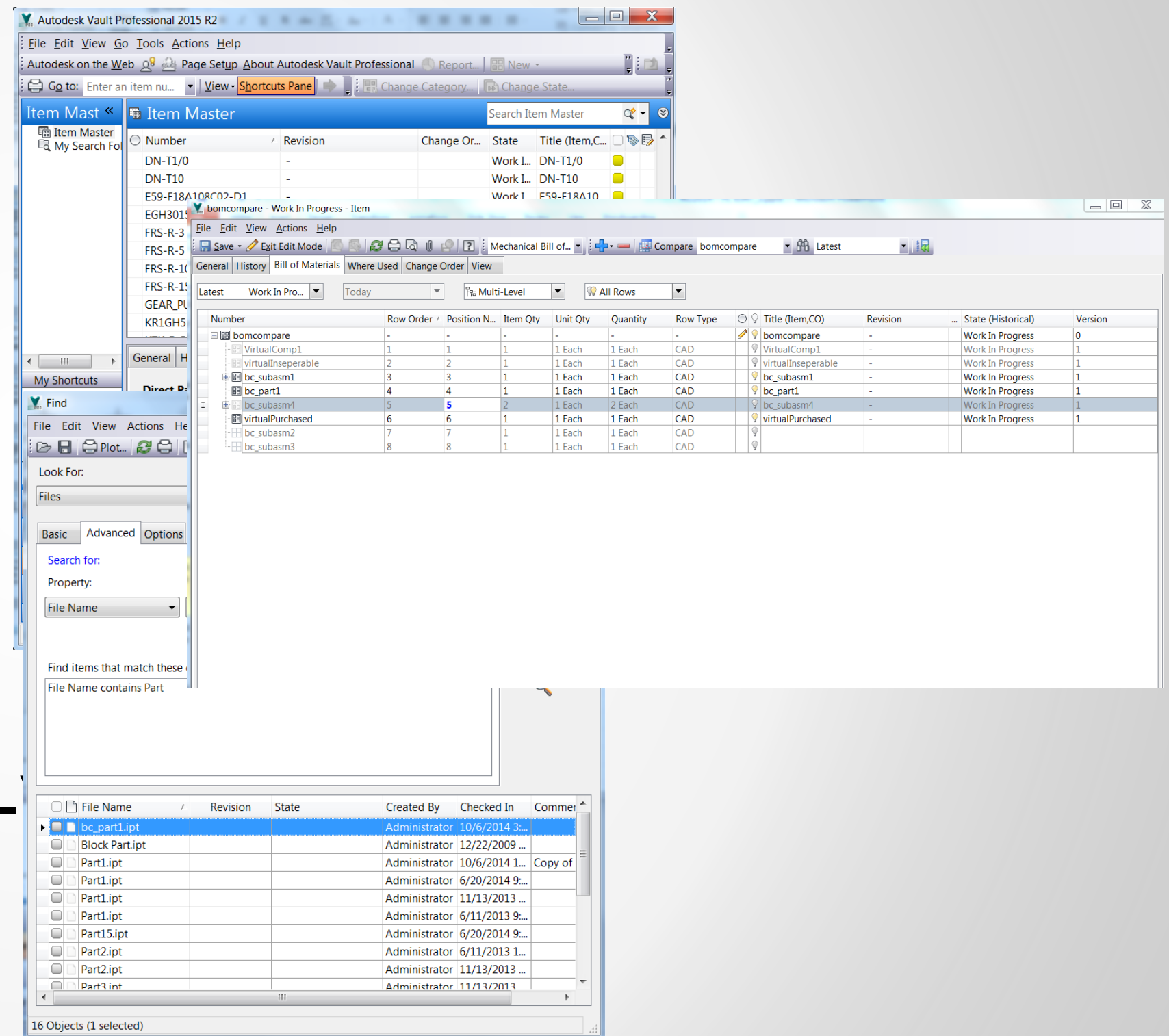
- BOM Components
- Excluded Rows
- Administration
- Assign Item results
- Checked out files

Vault 2015 Item BOM Enhancements

Item Dialog Improvements

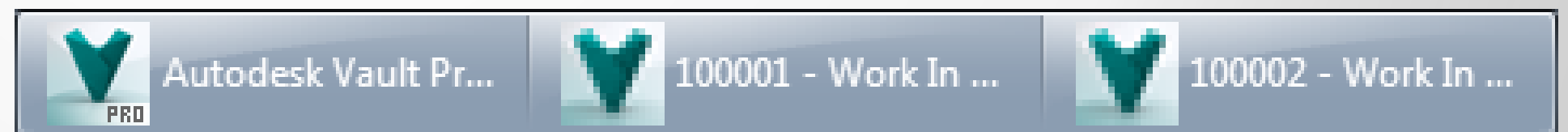
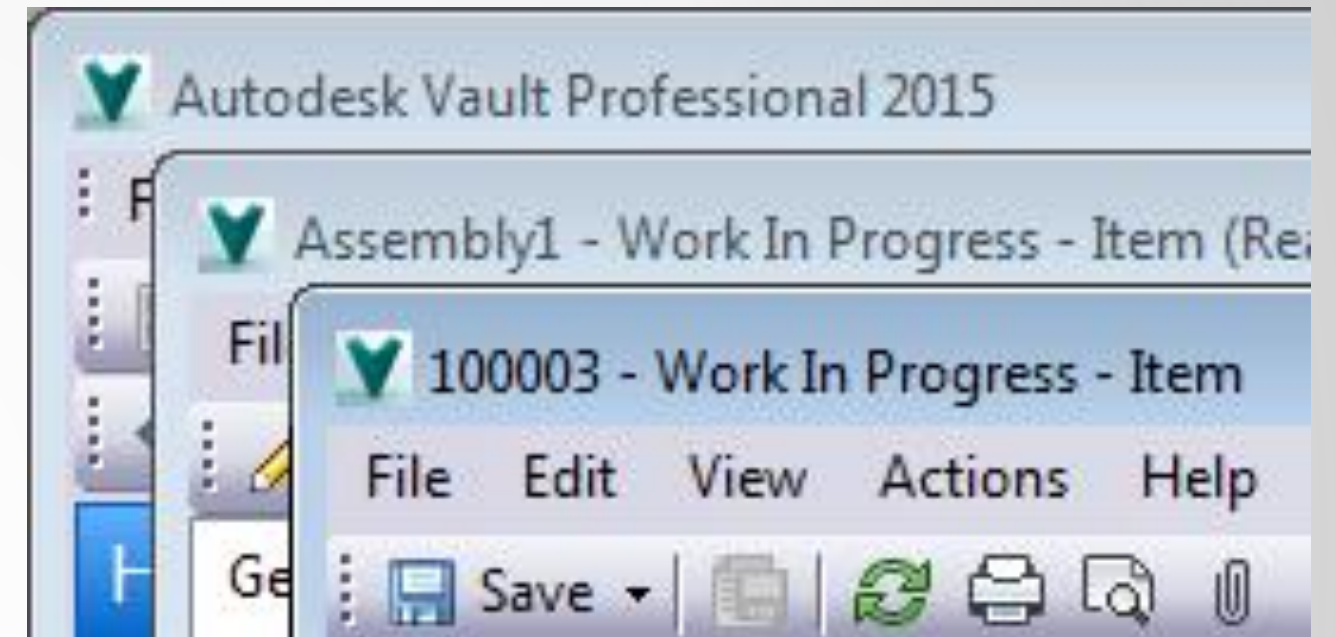
Item Dialog – Modeless Windows

- Can now Interact with
 - Item Dialog
 - Main Application
 - Other dialogs
- Drag & Drop
- Copy & Paste(Ctrl-C/Ctrl-V)



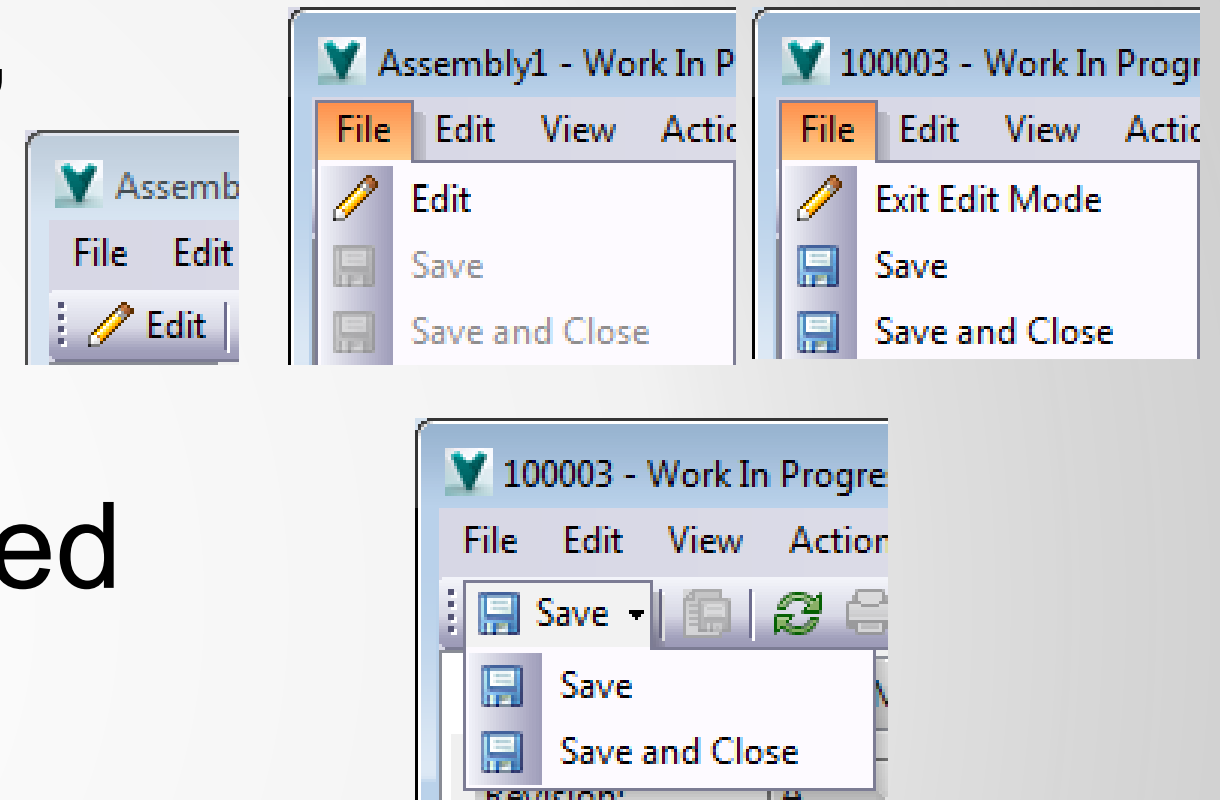
Item Dialog – Multiple Windows

- Multiple Item windows.
- Entries on the Windows taskbar



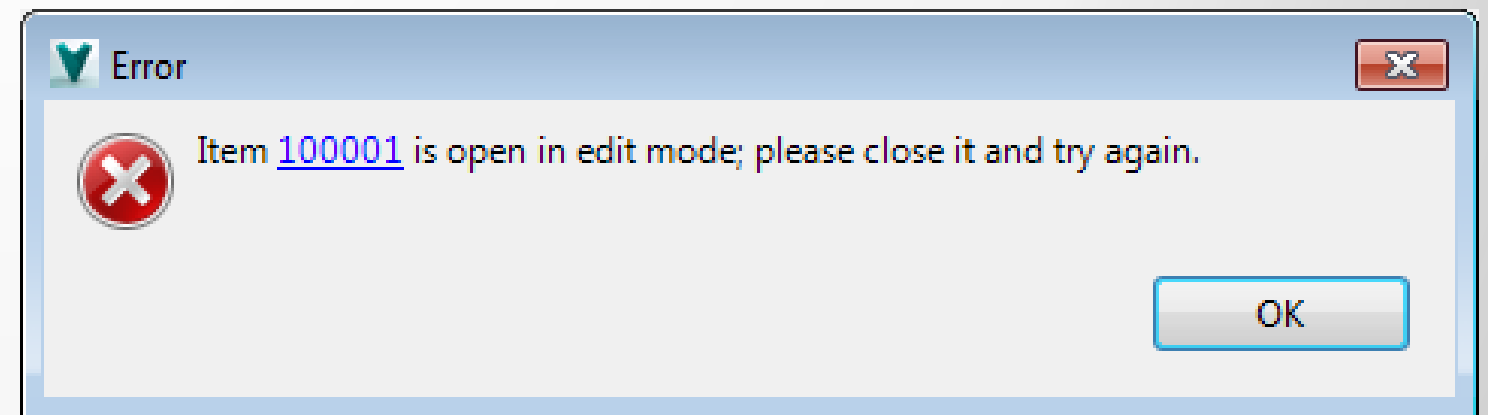
Item Dialog - Viewing/Editing/Saving

- Open always starts dialog in 'View' mode
- Enter and exit 'Edit' mode as needed
- Save as many times without exiting dialog or 'Edit' mode



Item Dialog – Single Edit Dialog

- One Item dialog in 'Edit' mode
- Some commands disabled
- Other commands result in Error dialog
 - Quick link to Item being edited

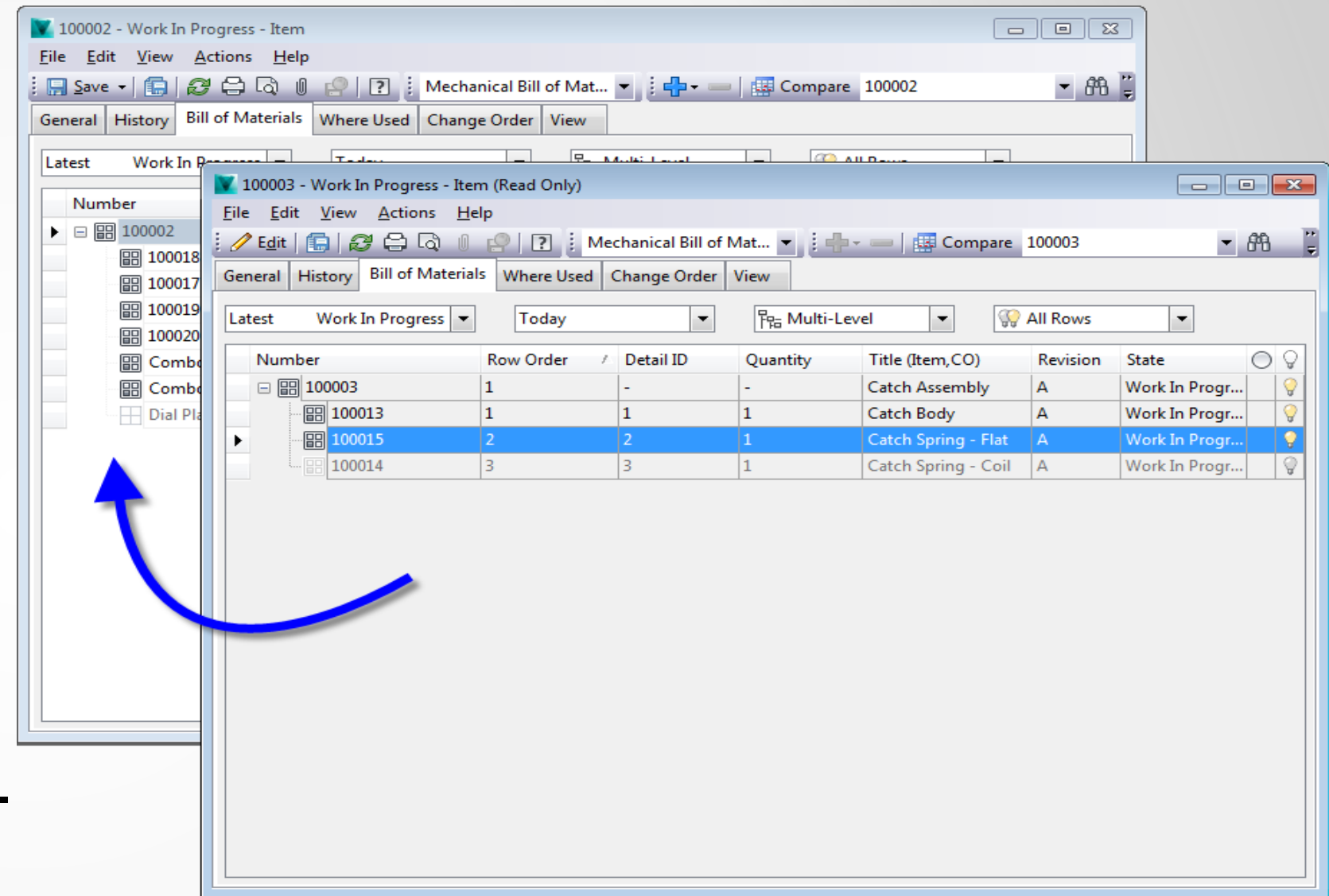


Item Dialog – File Associations

- Drag & Drop of files
 - To 'Associated files' grid
 - To Items in Item Master
 - To Item links
- Copy & Paste (Ctrl-C/Ctrl-V)
- Root Component
 - Link
 - Attachment
- Drag Items onto Components

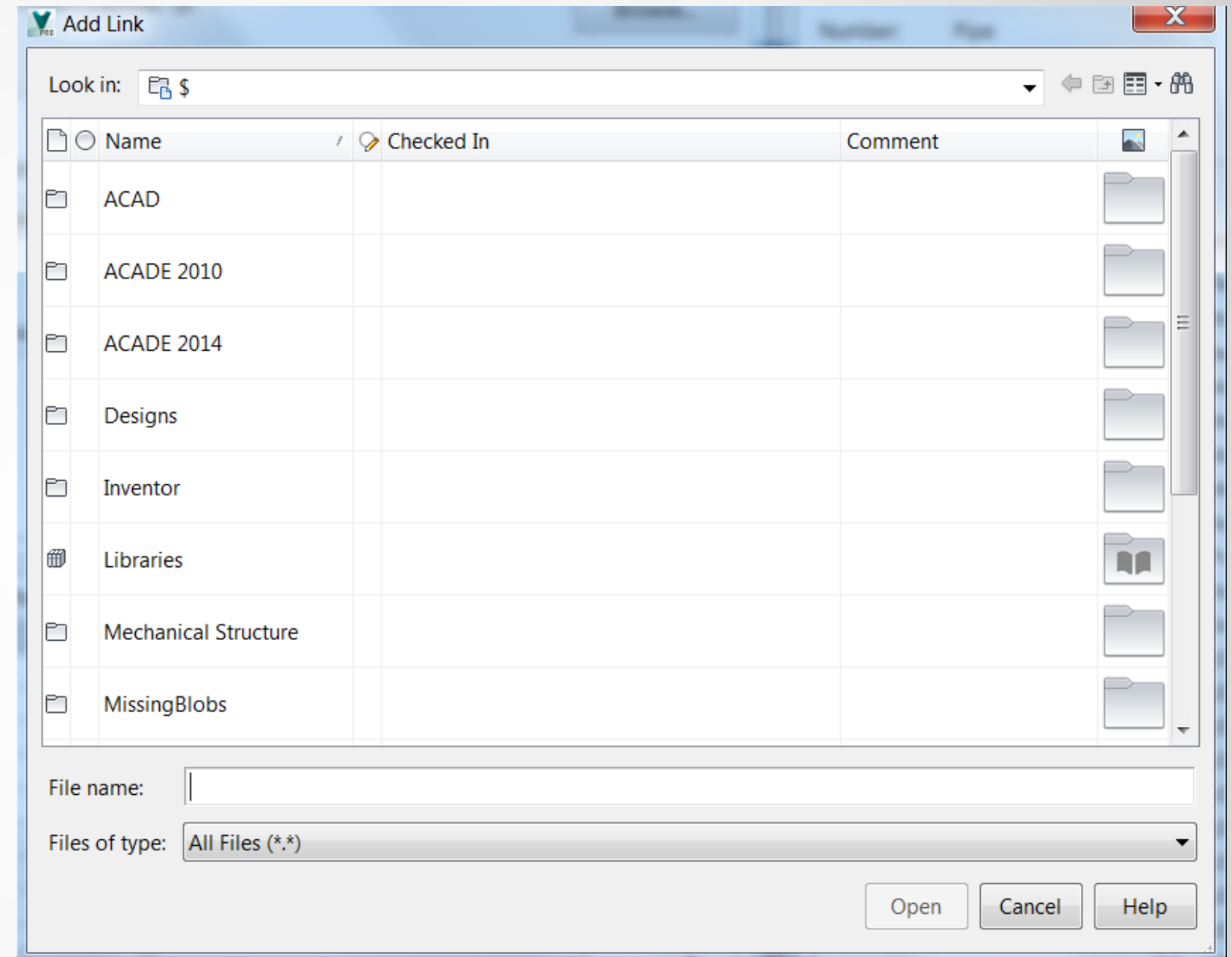
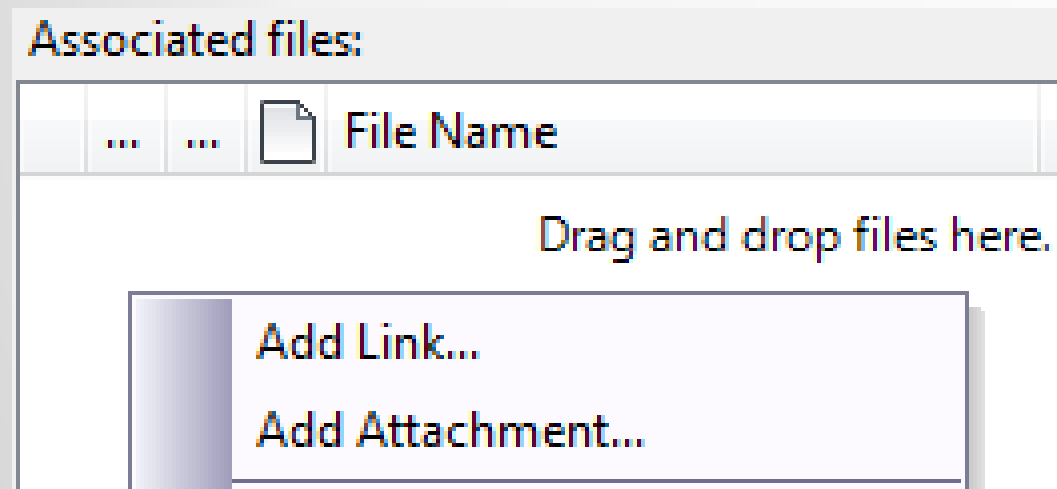
Item Dialog - Adding BOM Rows

- From another BOM
 - Drag & Drop
 - Copy/Paste (Ctrl-C/Ctrl-V)
 - Properties Copied
- From within the same BOM
 - Only Copy/Paste (Ctrl-C/Ctrl-V)
 - Drag & Drop is for changing Row Order
- Add Items



Item Dialog – File Associations

- Menu options:
 - Add Link...
 - Add Attachment...



Demo

Item Dialog– Summary

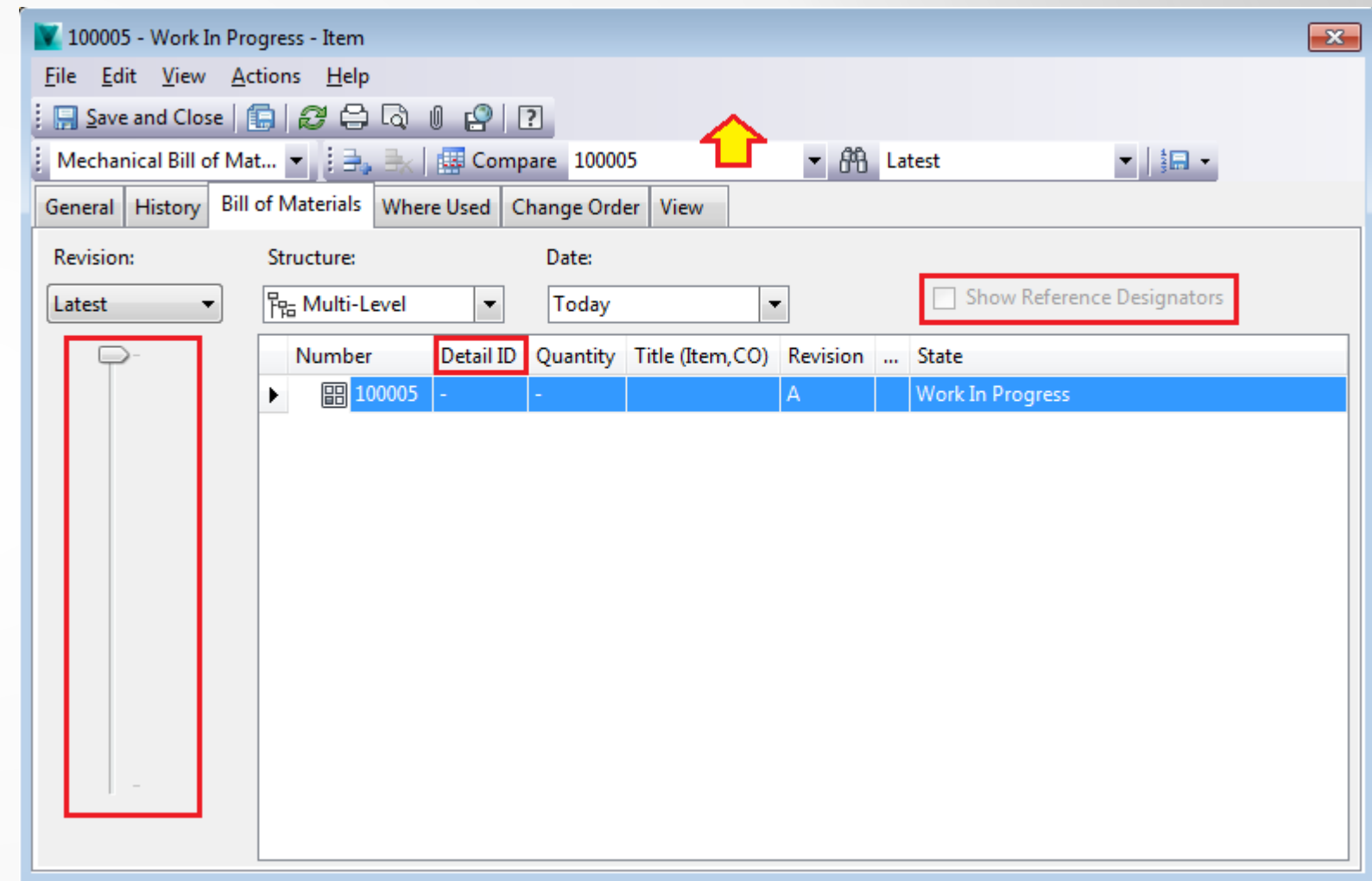
- Modeless Dialog
- Multiple Windows
- View/Edit/Save
- Associating Files to Items

Vault 2015 Item BOM Enhancements

BOM Tab Enhancements

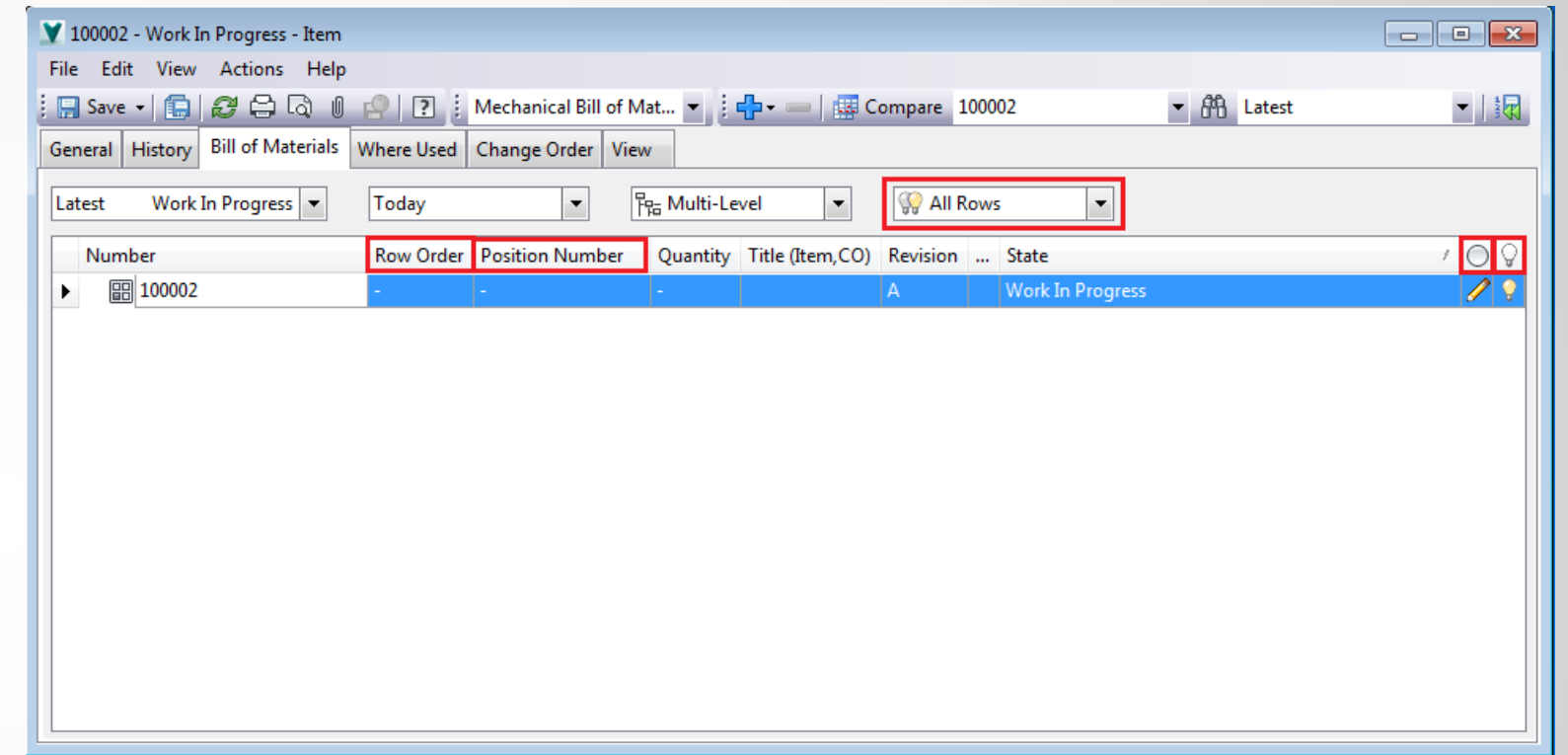
BOM Tab –Previous BOM Tab Layout

- Grid size
 - Revision slider
 - Show Reference Designators
 - Toolbars moved to 1 line
- Detail ID column replaced



BOM Tab –New BOM Tab Layout

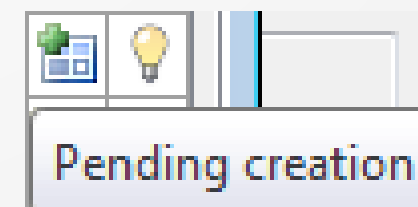
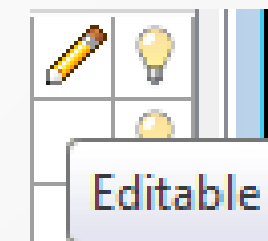
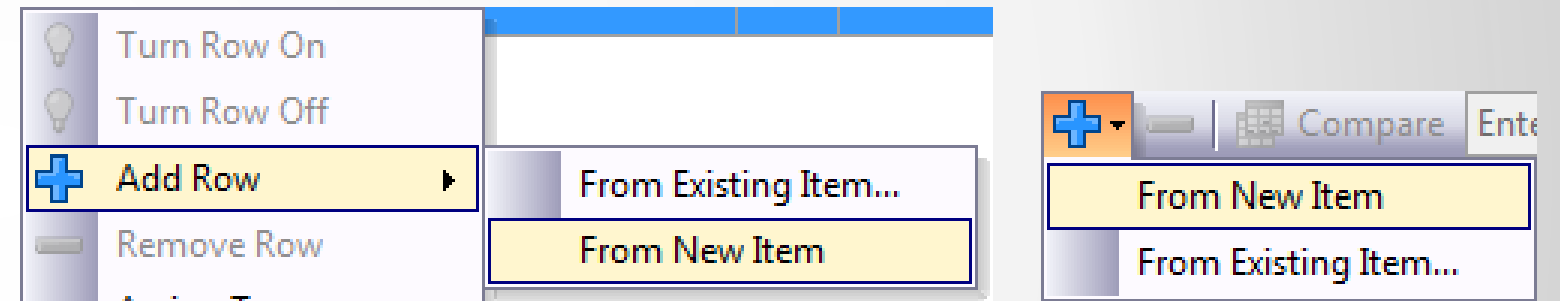
- New BOM property columns
 - Row Order
 - Position Number
 - Vault Status
 - On/Off column
- On/Off Row Filter



BOM Tab – Edit All Levels of BOM

- All rows available for editing
- Items are reserved on demand for editing
- Add row from new Item
- New Vault Status column indicates reservation, errors

Number	Row Order	
Assembly	-	
SubAssembly	1	
Part	1.3	
100016	1.3.1	



BOM Tab - New Properties

- Row Order
 - Hierarchical order for BOM structure

100001	-
100002	1
100005	1.1
100014	1.1.1
100015	1.1.1.1
100016	1.1.1.2
100017	1.1.1.3

100001	-
100002	1
100005	1.1
100014	1
100015	1.1.1.1
100016	1.1.1.2
100017	1.1.1.3

Number	Row O...
bomcompare	-
VirtualComp1	1
bc_subasm3	2
virtualInseperable	3
bc_subasm1	4
bc_part1	5
bc_subasm2	6
bc_subasm4	7
virtualPurchased	8

- Editable – (Items)
 - Drag & Drop – (All)
- Sticky

BOM Tab -New Properties

- Position Number
 - Text value for each BOM row
 - Editable – (Items)
 - Duplicate value highlighting
 - Value come from DetailID
 - Not sticky

	Number	Row O...	Position Num...
▶	[-] bomcompare	-	-
	VirtualComp1	1	1
	virtualInseperable	2	2
	[+] bc_subasm1	3	3
	bc_part1	4	4
	[+] bc_subasm4	5	Test
	virtualPurchased	6	4
	bc_subasm2	7	7
	bc_subasm3	8	8

Demo

BOM Tab – Summary

- Grid
- New Columns
- Nested Edits
- Add Row from New Item

Vault 2015 R2

Vault 2015 R2

- Flexible Lifecycle for Items
- Multiple BOM Rows
- User Defined BOM Row Properties
- BOM Reports

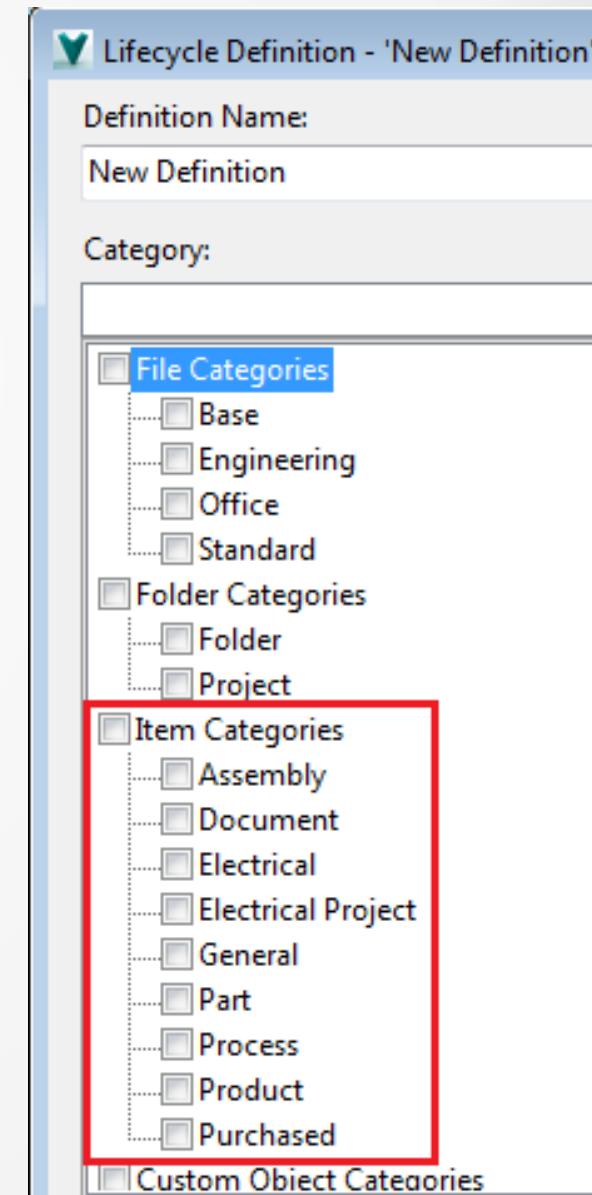
Vault 2015 R2 Flexible Lifecycle for Items

Related Class

- PL5397 - I Want to Ride My Lifecycle
 - Taught by Ralf Walter and Alan Bathgate
 - Tuesday, Dec 2, 1:30 PM - 2:30 PM
- Handout

Flexible Lifecycle for Items - Overview

- Customize Item behavior
- Share lifecycle definitions between:
 - Items
 - Files
 - Folders
 - Custom Objects



Flexible Lifecycle for Items - Default Definition

- Item Release Process
 - Work in Progress
 - In Review
 - Released
 - Obsolete
 - Quick-Change – For Convenience
- Migrated Items

Flexible Lifecycle for Items - Administration

Lifecycle Definitions

Filter: <All Lifecycle Definiti... New... Copy... Edit... Delete Assign...

Name
Basic Release Process
Flexible Release Process
Simple Release Process
Long Lead Time Release Process
Item Release Process
<None>

Lifecycle Details

Lifecycle States:

✓	Name	Description
✓	Work In Progress	Item is available for edit...
	In Review	Item is awaiting further ...
	Released	Item is ready for produc...
	Obsolete	Item is no longer used i...
	Quick-Change	State for controlling It...

Lifecycle Definition - 'Item Release Process'

Definition Name: Item Release Process

Description: Item lifecycle process for release control

Category: Assembly, Document, Electrical, Electrical Project, Ge...

Lifecycle Details

Lifecycle States: + X ✓ ↑ ↓

General Transitions Security Control Comments

State Name: Work In Progress

State Description: Item is available for editing

Flexible Lifecycle for Items - Transitions

Lifecycle Details

Lifecycle States:



✓	Name	Description
✓	Work In Progress	Item is available for edit...
	In Review	Item is awaiting further ...
	Released	Item is ready for produc...
	Obsolete	Item is no longer used i...
	Quick-Change	State for controlling It...

Transition

From State: In Review → To State: Released

Criteria Actions Security

Show: Item Properties

Property: Vendor Condition: is not empty Value:

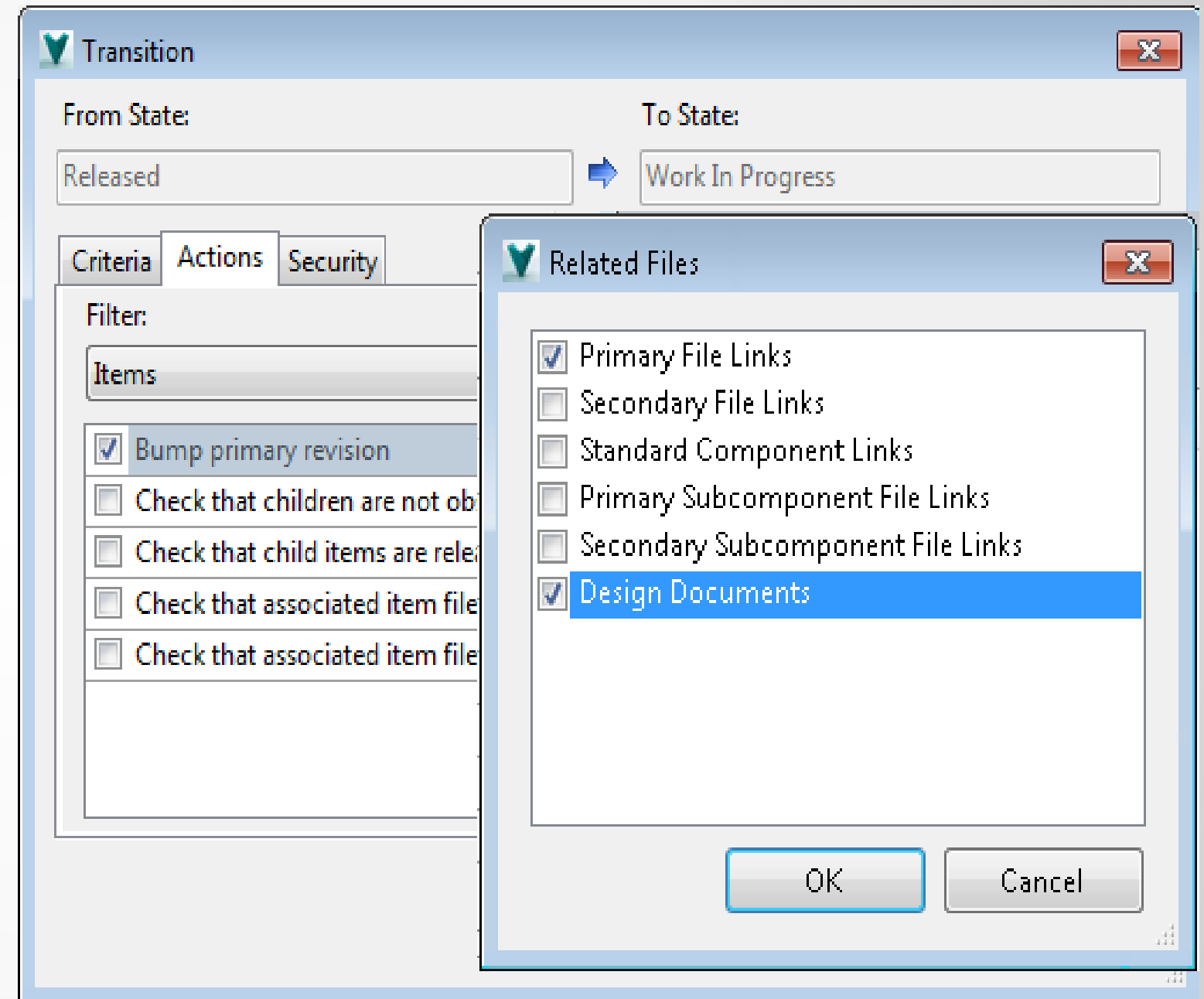
Add Replace Remove

Vendor is not empty

OK Cancel Help

Flexible Lifecycle for Items - Transitions

- Children are not obsolete
- Child Items are released
- Linked to latest file versions
- Linked files are released



Flexible Lifecycle for Items - Transitions

- Who can make this transition

Transition

From State: Quick-Change → To State: Obsolete

Criteria Actions Security

Add... Remove

Name	Permission
Everyone	Deny

☐ No restrictions on this transition

OK Cancel Help

Flexible Lifecycle for Items - State Security

- State based security
 - Applied on entry
 - Can be overridden
- Emulate old states
- Legacy File Security

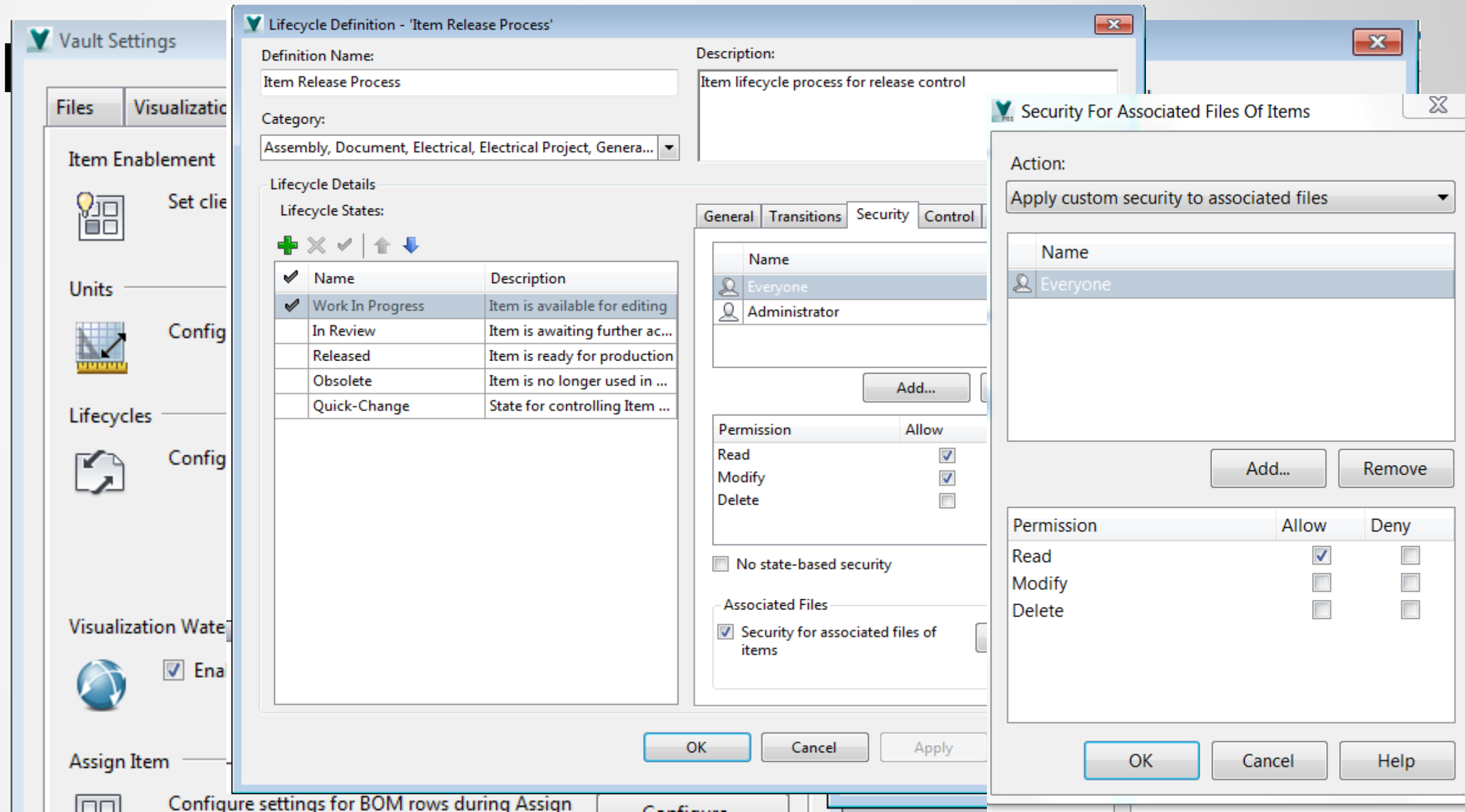
The screenshot shows the 'Lifecycle Definition - Item Release Process' dialog box. The 'Definition Name' is 'Item Release Process' and the 'Description' is 'Item lifecycle process for release control'. The 'Category' is 'Assembly, Document, Electrical, Electrical Project, Genera...'. The 'Lifecycle Details' section shows a table of lifecycle states:

✓	Name	Description
✓	Work In Progress	Item is available for editing
	In Review	Item is awaiting further ac...
	Released	Item is ready for production
	Obsolete	Item is no longer used in ...
	Quick-Change	State for controlling Item ...

The 'Security' tab is selected, showing a list of users: 'Everyone' and 'Administrator'. Below the list are 'Add...' and 'Remove' buttons. A table shows permissions for 'Read', 'Modify', and 'Delete' for 'Everyone' and 'Administrator'. The 'Read' and 'Modify' permissions are checked for 'Everyone'. The 'Delete' permission is checked for 'Administrator'. There is a checkbox for 'No state-based security' and a section for 'Associated Files' with a checkbox for 'Security for associated files of items' and a 'Configure...' button. At the bottom are 'OK', 'Cancel', 'Apply', and 'Help' buttons.

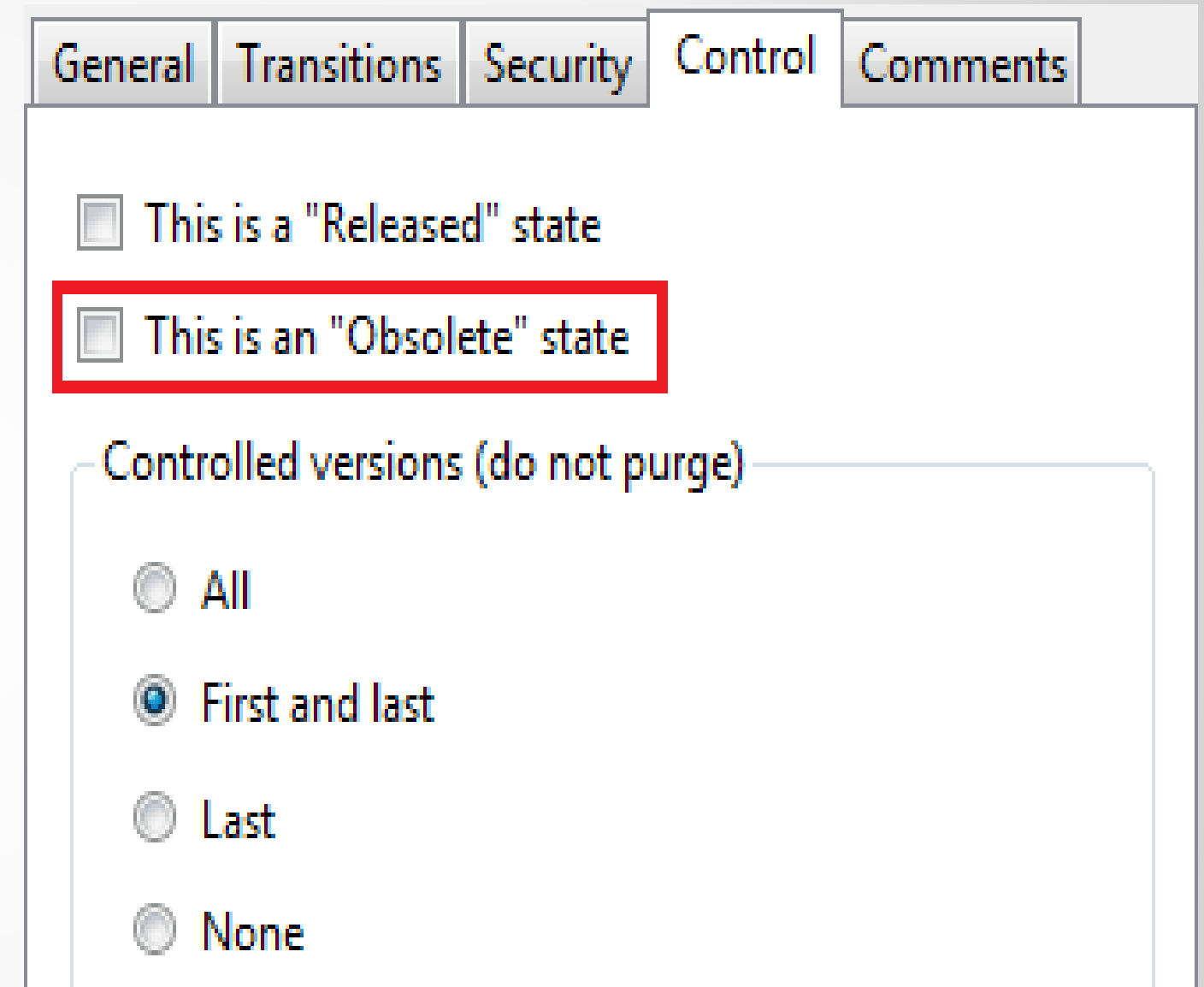
Flexible Lifecycle for Items - State Security

- Associated Item
 - Item
 - Custom
 - Clear
- Applied to
 - Primary
 - Secondary
 - Tertiary



Flexible Lifecycle for Items - Control Tab

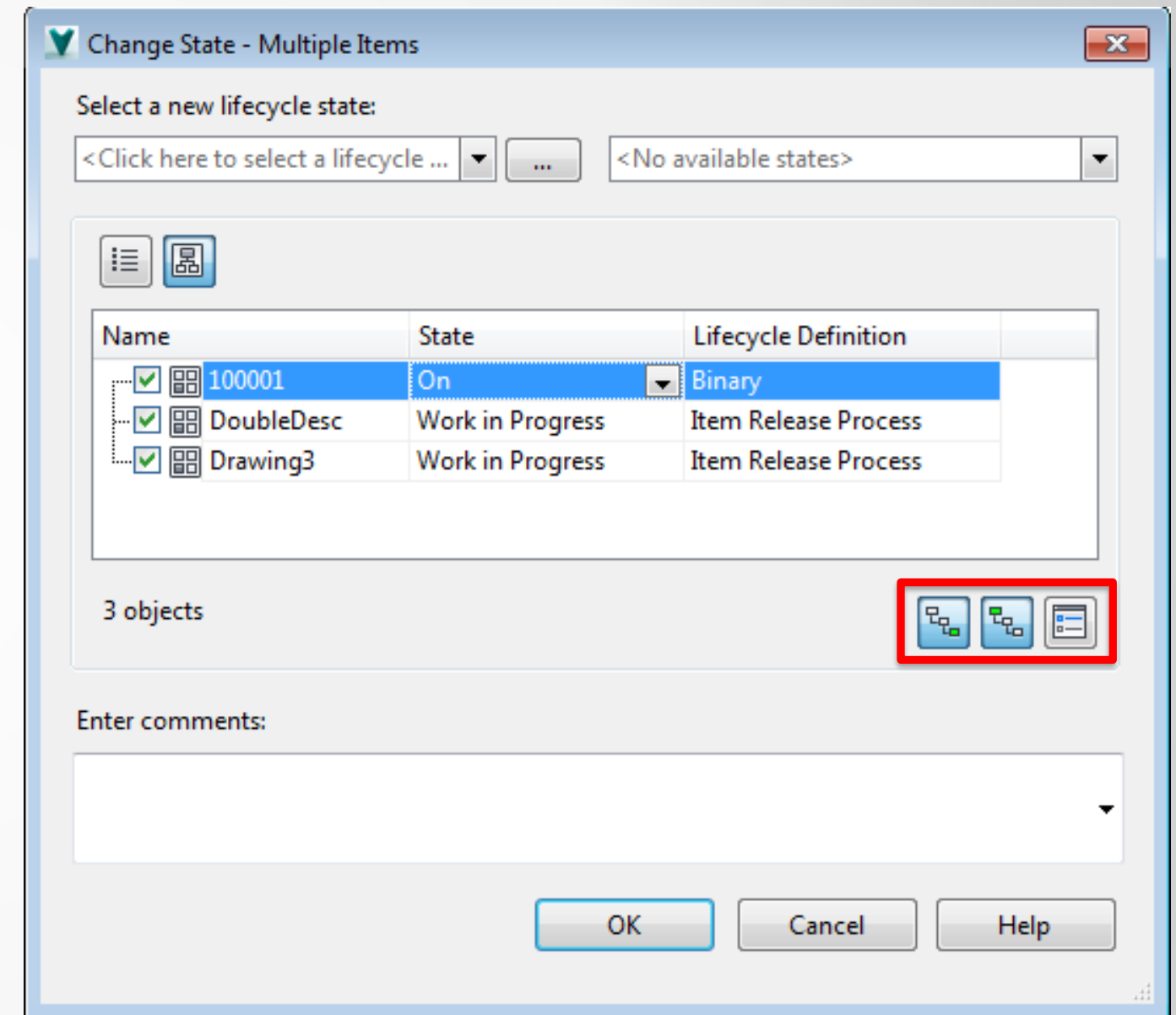
- Legacy
- Obsolete concept added
 - Available for all entity types
 - Children not obsolete action
 - Latest Obsolete property



The screenshot shows a software interface with five tabs: General, Transitions, Security, Control, and Comments. The 'Control' tab is selected. Inside the 'Control' tab, there are two checkboxes. The first checkbox is labeled 'This is a "Released" state' and is unchecked. The second checkbox is labeled 'This is an "Obsolete" state' and is also unchecked; this checkbox and its label are highlighted with a red rectangular border. Below these checkboxes, there is a section titled 'Controlled versions (do not purge)' which contains four radio button options: 'All', 'First and last', 'Last', and 'None'. The 'First and last' option is selected, indicated by a blue dot in the center of the radio button.

Flexible Lifecycle for Items – Change State Dialog

- Same interface as Files, Folders, and Custom Objects
- Uses relationship gathering options
- Also Unified
 - Change Revision
 - Change Category



Flexible Lifecycle for Items - Watermarks

 Lifecycle Watermarks ✕

Filter: Item Categories ▼

Name	Description
▶ Item Release Process	Item lifecycle process for release control
My Definition	
My Lifecycle Def	
<None>	Null lifecycle definition for opt-out scenario

Lifecycle State	Watermark Text	Location	Font	Color	Size
▶ Work In Progress	WORK IN PROGR... 	Diagonal ▼	Tahoma ▼	 ▼	Medium ▼
In Review	IN REVIEW	Diagonal	Tahoma		Medium
Released	RELEASED – EFPEC...	Border	Tahoma		Medium
Obsolete	OBSOLETE	Diagonal	Tahoma		Medium
Quick-Change	QUICK-CHANGE	Diagonal	Tahoma		Medium

OK Cancel Help

Demo

Flexible Lifecycle for Items – Summary

- Administration
 - States
 - Transitions
 - Security
- Obsolete
- Change State

Vault 2015 R2 Multiple BOM Rows

Multiple BOM Rows - Overview

■ 2015

Number	Row Order /	Position Number	Quantity	Title (Item,...
Legos	-	-	-	Legos
2x6	1	1	3 Each	2x6
2x6	2	2	4 Each	2x6
2x6	3	3	8 Each	2x6
2x6	4	4	1 Each	2x6

Number	Row Order /	Position Number	Quantity	Title (Item,...
Legos	-	-	-	Legos
2x6 Green	1	1	3 Each	2x6 Green
2x6 Blue	2	2	4 Each	2x6 Blue
2x6 Red	3	3	8 Each	2x6 Red
2x6	4	4	1 Each	2x6

Number	Row Order /	Position Number	Quantity	Title (Item,...
Legos	-	-	-	Legos
2x6	3	3	16 Each	2x6

3	2x6 Red	Each	8	2x6	Red
4	2x6	Each	1	2x6	Any

Multiple BOM Rows – New Properties

- Item Qty
- Unit Qty
- Row Type
 - CAD
 - Updated
 - Manual
 - Not grouped

Model Data						
Structured						
Parts Only (Disabled)						
Item	Part Number	Unit QTY	QTY	Stock Number	Description	
	1	2x6 Green	Each	3	2x6	Green
	2	2x6 Blue	Each	4	2x6	Blue
	3	2x6 Red	Each			
	4	2x6	Each			

Unit Qty	Quantity	Row Type
-	-	-
2 Foot	4 Foot	Manual
3 Foot	12 Foot	Manual
1 Foot	22 Foot	Manual

Number	Item Qty	Unit Qty	Quan...	Row Type
 Legos	-	-	-	-
 2x6	3	1 Each	3 Each	CAD
 2x6	4	1 Each	4 Each	CAD
 2x6	3	1 Each	8 Each	CAD
 2x6	4	1 Each	1 Each	CAD
 2x6	1	1 Each	1 Each	Manual
 2x6	1	1 Each	1 Each	Manual

Multiple BOM Rows - Grouped Rows

- Represents a set of CAD rows
- Group icon
- Editable

Model Data  Structured  Parts Only (Disabled)						
	Item	Part Number	Unit QTY	QTY	Stock Number	Description
	1	2x6 Green	Each	3	2x6	Green
	2	2x6 Blue	Each	4	2x6	Blue
	3	2x6 Red	Each	8	2x6	Red
	4	2x6	Each	1	2x6	Any

	Number	Row Order /	Position Number	Quantity	Title (Item,...
▶ 	Legos	-	-	-	Legos
	2x6	3	3	16 Each	2x6

Multiple BOM Rows - Grouped Rows

- Groups in CAD
- Vault Grouping behavior

Detail ID required

	Number	Row Order	Position Number	Quantity	Title (Item,...
	Number	Row Order	Position Number	Quantity	Title (Item,...
▶	Legos	-	-	-	Legos
	2x6	3	3	16 Each	2x6
▶	2x6	3	3	8 Each	2x6
	2x6	4	4	1 Each	2x6

Model Data | Structured | Parts Only (Disabled)

Item	Part Number	Unit QTY	QTY	Stock Number	Description	
	1	2x6 Green	Each	3	2x6	Green
						Blue
						Red
						Any

Configure Assign Item

Duplicate Items

☐ Auto-select first duplicate item

☐ Allow user override

Settings

Rows that will be turned ON during Assign Item:

☒ None

☐ Existing Only

☐ All

Grouping

☒ Group BOM rows as per the design BOM

Vault 2015 R2 User Defined BOM Row Properties

Related Class

- PL5962-P - Hitchhiker's Guide to Property Management
 - Taught by Alan Bathgate
 - Wednesday, Dec 3, 4:30 PM - 5:30 PM
- Handout

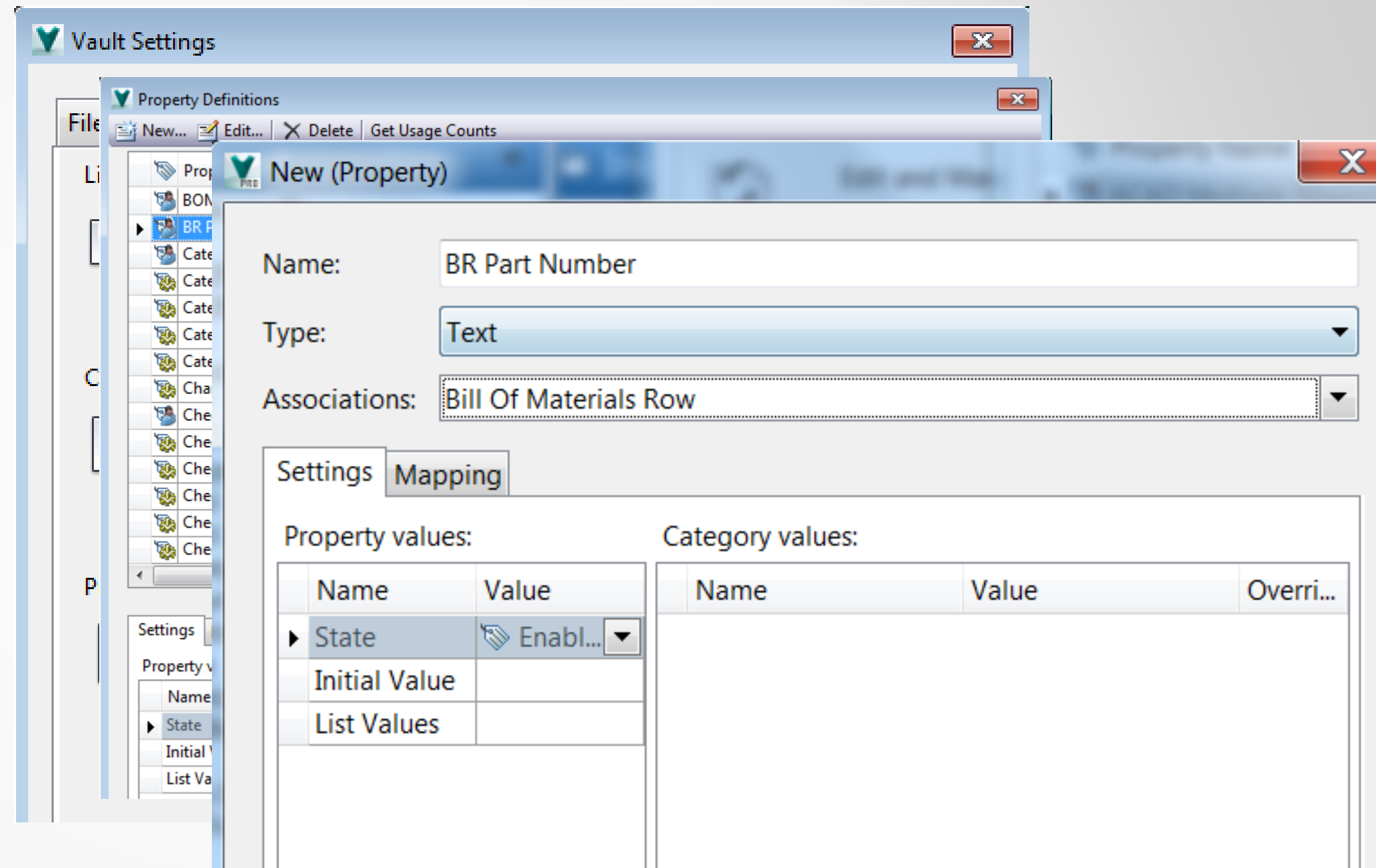
User Defined BOM Row Properties - Overview

- Properties on a row
- API support for has been available
- Added UI and functionality

	Number	Item ...	Unit Qty	Quantity	Mater...	BR Material
 	100018	-	-	-		-
 	Pipe	3	1 Foot	22 Foot	Lead	Lead
 	Pipe	2	2 Foot	4 Foot	Lead	Copper
 	Pipe	4	3 Foot	12 Foot	Lead	Mythril
 	Pipe	1	1 Foot	12 Foot	Lead	Adamantium

User Defined BOM Row Properties - Administration

- Administration
- Limitations
 - Entity vs Association
 - Initial value
 - Suggested value list



User Defined BOM Row Properties - Mapping

- Mapping to Component properties

	Number	Row Or...	Position Number	Quantity	Part N...	BR Part Nu...
▶	[-] [Grid] Legos	-	-	-	Legos	-
	[Grid] 2x6	1	1	3 Each	2x6	2x6 Green
	[Grid] 2x6	2	2	4 Each	2x6	2x6 Blue
	[Grid] 2x6	3	3	8 Each	2x6	2x6 Red
	[Grid] 2x6	4	4	1 Each	2x6	2x6

Model Data		Structured		Parts Only (Disabled)		
	Item	Part Number	Unit QTY	QTY	Stock Number	Description
	 1	2x6 Green	Each	3	2x6	Green
	 2	2x6 Blue	Each	4	2x6	Blue
	 3	2x6 Red	Each	8	2x6	Red
▶	 4	2x6	Each	1	2x6	Any

User Defined BOM Row Properties - Mapping

- Read Only
- Item UDP Writeback
- Groups

Edit (User Defined) - BR Part Number

Name: BR Part Number

Type: Text

Associations: Bill Of Materials Row

Settings Mapping

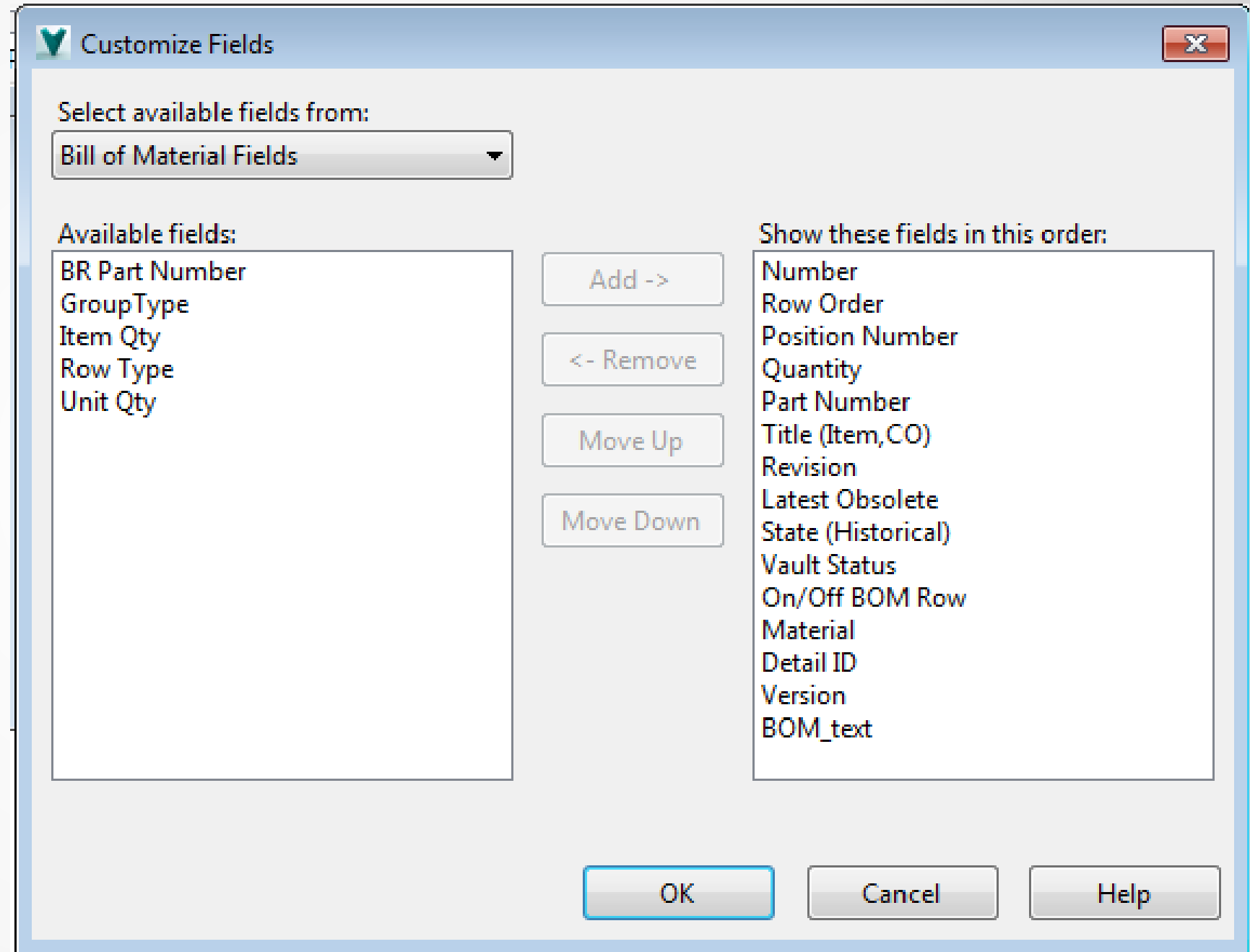
Click here to add a new mapping

Entity	Provider	File Property	Type	Classification	Mapping	Create
Bill Of Mat...	Inventor	Part Number	Text	Standard		No

Number	Row Or...	Position Number	Quantity	Part N...	BR Part Nu...	Title (Item,CO)
▶ ▢ ▢ ▢ Legos	-	-	-	Legos	-	Legos
▢ 2x6	1	1	3 Each	2x6	2x6 Green	2x6
▢ 2x6	2	2	4 Each	2x6	2x6 Blue	2x6
▢ 2x6	3	3	8 Each	2x6	2x6 Red	2x6
▢ 2x6	4	4	1 Each	2x6	2x6	2x6

User Defined BOM Row Properties– BOM Grid

- Displaying
- Editing
 - Controls
 - Item UDPs



Demo

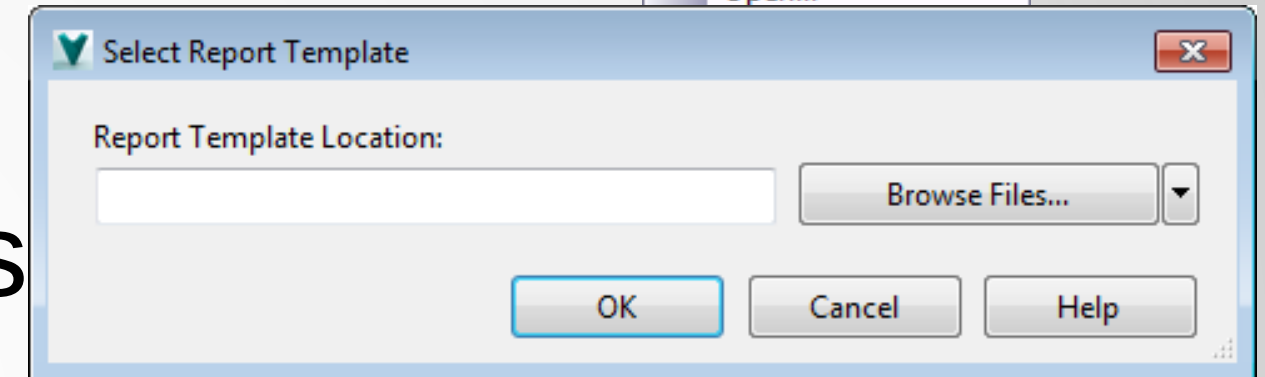
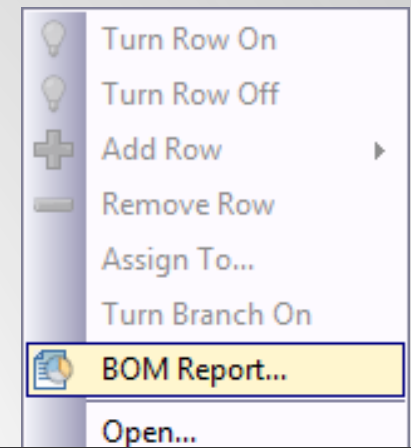
Summary

- Multiple BOM Rows
- Groups
- User Defined BOM Row Properties

Vault 2015 R2 BOM Reports

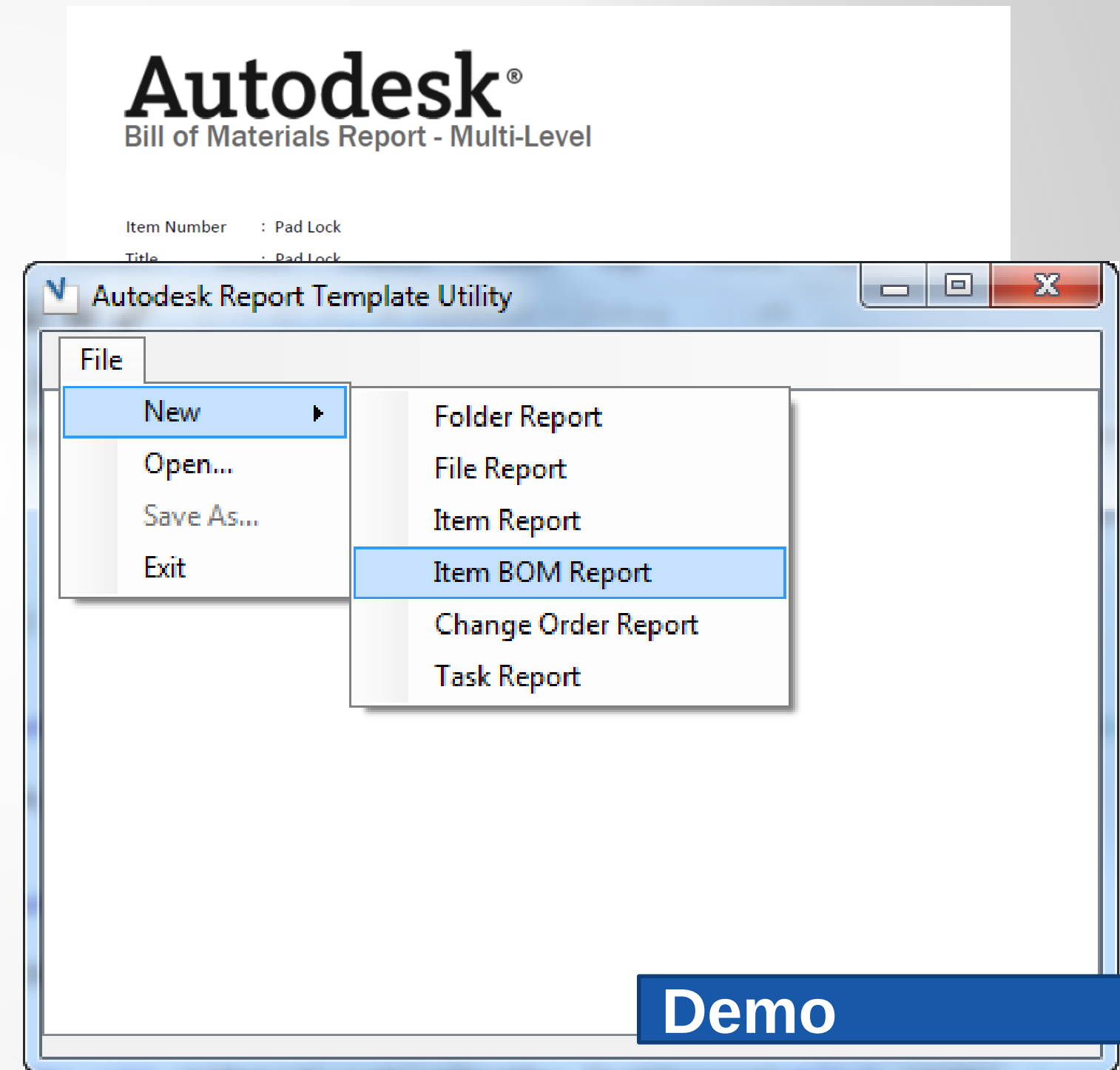
BOM Reports - Overview

- Reporting feature extended
- Supports BOM Rows & properties
- Right Click Menu
- Select report from Vault or disk



BOM Reports - Templates

- Templates supplied
- Report Template Authoring utility support



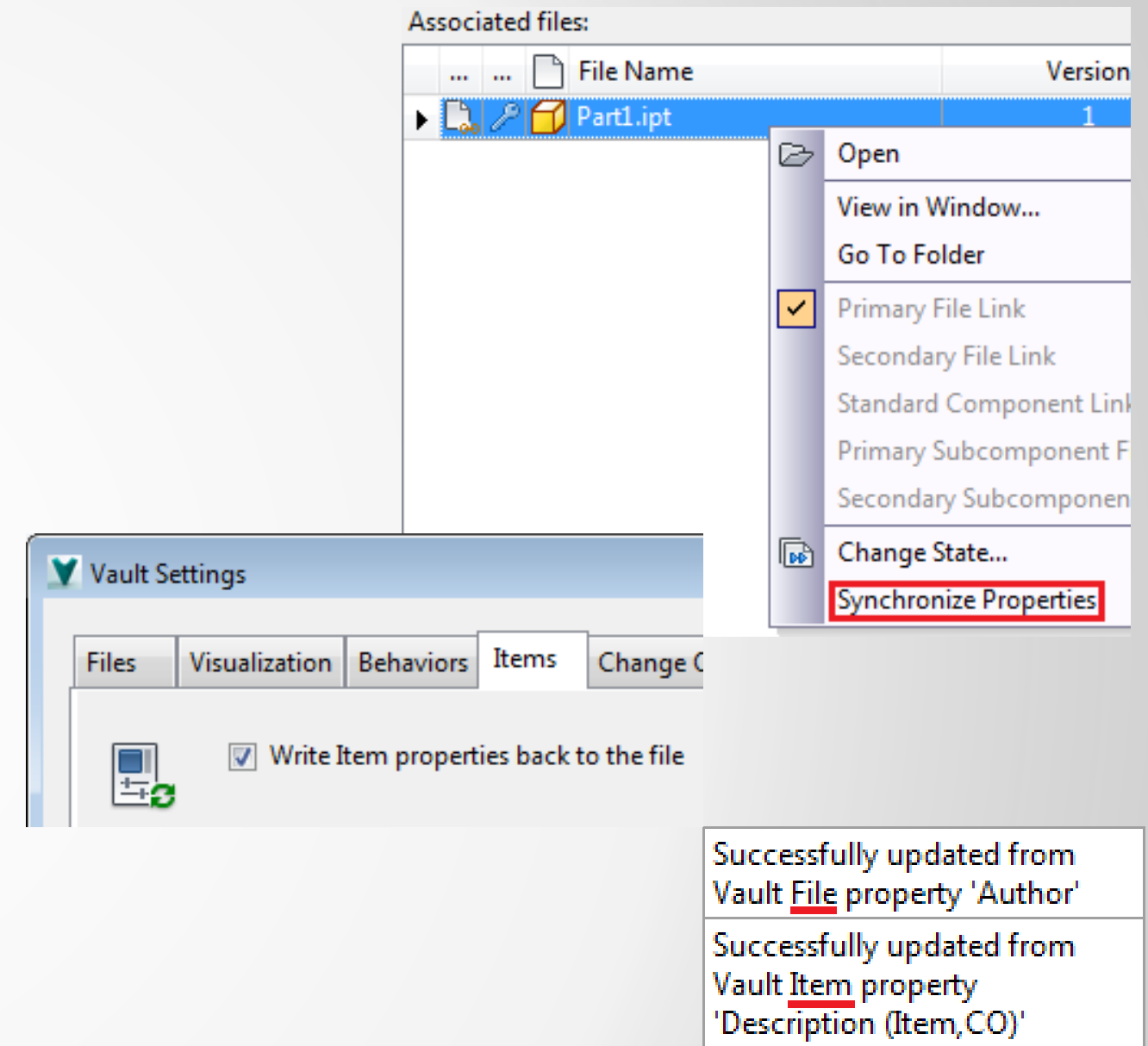
Vault 2015 Write-back Item Properties

Item Write-back - In Vault Explorer Client

- Available in Vault
- Properties are from the root's:
 - Primary association
 - Secondary association
 - Tertiary association (single)
- Does not write to subcomponents
- Item beats File

Item Writeback - Administration

- Command on Associated files grid
- Admin control affects all clients
- Enhanced result reporting

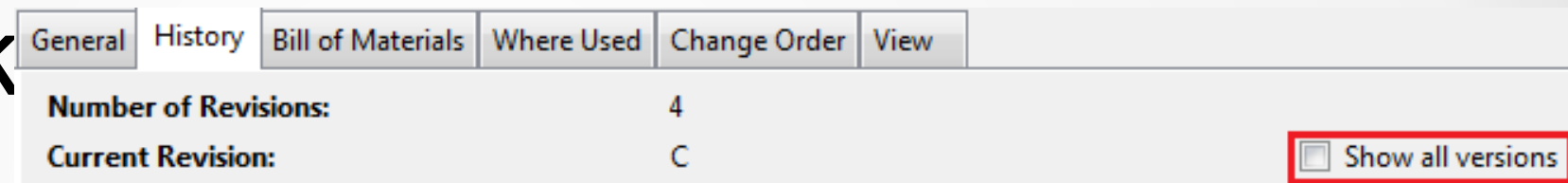
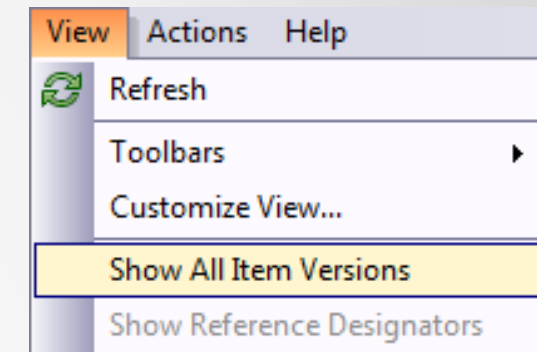


Demo

Vault 2015 Usability Improvements

Vault Usability Enhancements - Item Iterations

- Expose Version info
- See historic 'Work item versions'
- When 'Off'
 - Tip 'Consumable' version
 - Released
 - Or Tip version if no 'Consumable'



Latest	Work in Progress	Today
Revision	Lifecycle State	Version
▶ Latest	Work in Progr...	12
C	Work in Progr...	12
B.1	Released	10
B	Work in Progr...	5
A	Released	3

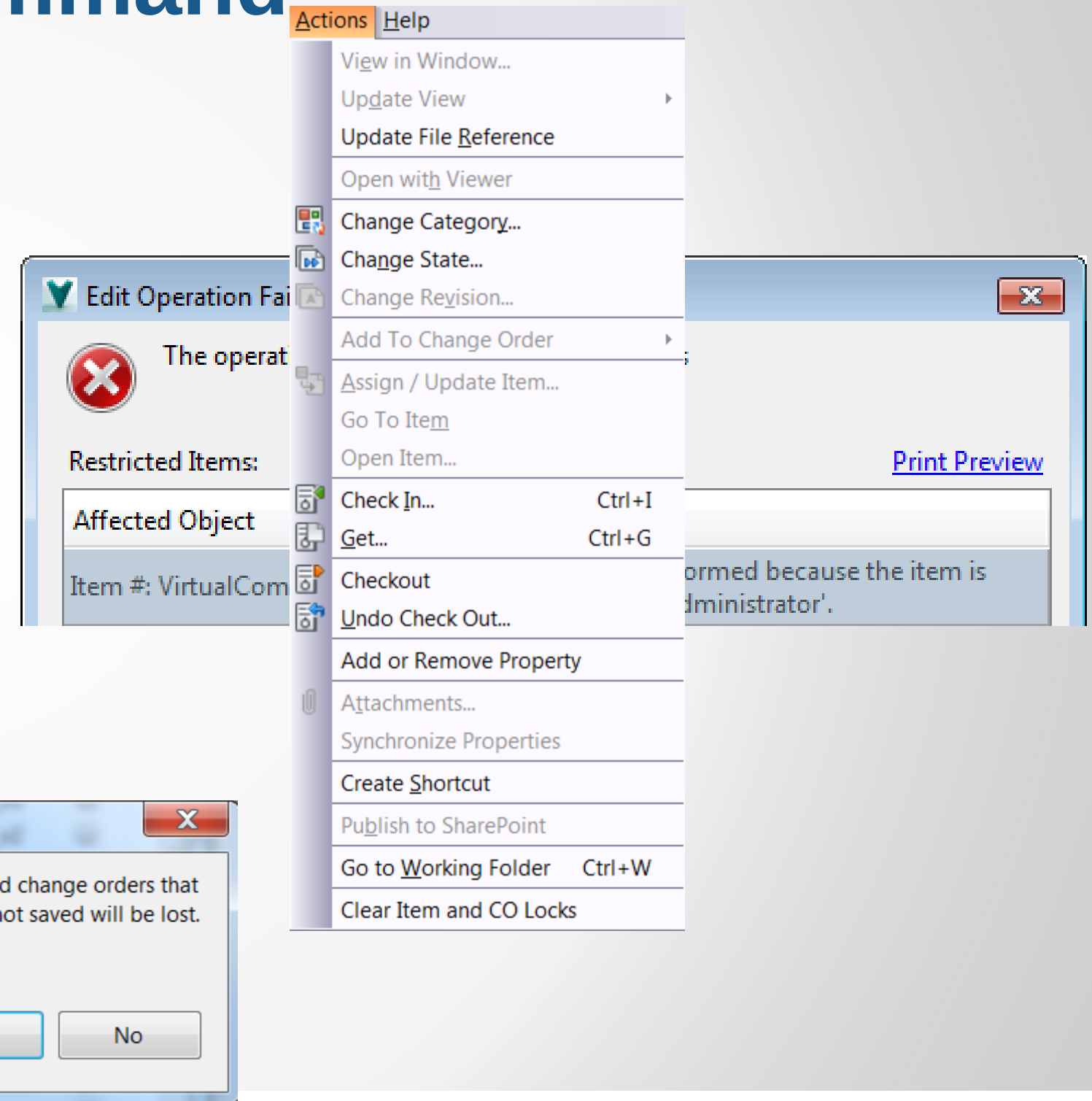
Vault Usability Enhancements - Item Iterations

- Affects:
 - 'History' tab
 - 'General' tab version selection
 - 'BOM' tab version selection
 - 'Where Used' tab version selection
 - 'Attachments' window version selection

Latest	Work in Progress	▼	Today
Revision	Lifecycle State	Version	
▶ Latest	Work in Progr...	12	
C	Work in Progr...	12	
C	Work in Progr...	11	
B.1	Released	10	
B.1	Quick-Change	9	
B.1	Quick-Change	8	
B.1	Released	7	
B.1	Work in Progr...	6	
B	Work in Progr...	5	
B	Work in Progr...	4	
A	Released	3	
A	Work in Progr...	2	
A	Work in Progr...	1	

Vault Usability Enhancements – Clear Item and CO Locks Command

- Item & CO reservation tied to login
- Clears ALL Item and CO locks for current user
 - Unsaved edits lost
- Command disabled if editing an item



Summary

In this class we:

- Showed new Item BOM enhancements
- Explained Flexible Lifecycles for Items.
- Introduced Multiple BOM Rows and User Defined BOM Row Properties
- Gave an overview about Item BOM Reports

Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2014 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time







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