

Session 182011: Part to Document Cummins Inc. Manage Associations Utility

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CUMMINS DATA CLASSIFICATION: PUBLIC

Business Scenario

There are multiple use cases for adding/removing Part to Document associations as an administrative change. Processing a full change to the Part's revision is undesirable due to significant effort/impact within and downstream of Engineering

- Most urgent need at Cummins is to have a method for adding/removing Part to CAD associations for Parts at valid controlled states (e.g. "Released" and "Limited Usage")

Scenario Background:

- All of our Part, CAD and Document data is being migrated into Windchill from separate source systems
- Associations are created as accurately as possible through mapping rules, but will not be 100% complete and correct
- Many Parts already at controlled states when migrated are unlikely to be revised in short term after migration, however...
 - Still need the ability to correct any gaps in associations created/not created at migration
 - Still need the ability to use those items as components of other structures with CAD > Part synchronization, but without the effort and impact of full Part revision

Manage Associations Utility

- Provides capability to add or remove Part to CAD associations when the Part is in the controlled lifecycle states of Released or Limited Usage
- Business scenarios where this capability would be utilized include:
 - Addressing gaps in the associations created/not created at the time of migration (based on mapping rules that are known to have unavoidable gaps)
 - Properly associating data to support CAD BOM to Part BOM synchronization (which entirely depends on the existence of Part to CAD associations)
- The utility is available:
 - To CAD users only (not available to non-CAD users)
 - From the Actions menu on the CAD object's details page (not available from Part)
- Users must ensure that there is a legitimate reason for adding/removing associations on Released/Limited Usage state Parts. The system records all associations added or removed by the utility in the Part object's History

Manage Associations Utility (Cont.)

- System functionality for the Manage Associations Utility:
 - The search action for Parts on the Add Association interface will only return Parts that are at Released or Limited Usage states
 - Adding an Owner association through the utility does not modify any Part attributes or structure (BOM) information (the API used by the utility only creates the association but does not execute a build)
 - The utility can only be initiated from one CAD object at a time
 - One CAD object can be associated to multiple Parts simultaneously (if permissible for the selected association type)
 - For example, a FT Generic could simultaneously be related to multiple Parts with the Content association by adding all applicable Parts in the Add Association interface

Manage Associations Utility (Cont.)

- To add an association using the utility, navigate to the CAD object's details page
 - In the example shown, a Part at Released state has an applied form CAD model that is not yet associated; the utility is used to relate the model to the Part with an Image association

The image illustrates the process of adding an association using the Manage Associations Utility. It consists of three main components:

- Actions Menu:** The 'Actions' menu is open, showing the 'Manage Associations Utility' option. The 'Add Association' option is highlighted in the sub-menu.
- Add Association Dialog:** The 'Add Association' dialog box is shown, with the 'Add Association' button highlighted. The dialog contains a table with the following data:

File Name	Number	Name	Association Type
A062V816_A1.PRT	a062v816_a1.prt		

- Part Picker Dialog:** The 'Part Picker' dialog box is shown, with the 'Number' field set to 'A062V816'. The search results table is displayed below, showing one object selected:

Number	Organization ID	Version	Name	State
A062V816	Power Systems	A.2 (Engineering)	SPRING,COMPRESSION	Released

The 'OK' button is highlighted in the bottom right corner of the Part Picker dialog.

Manage Associations Utility (Cont.)

(Example of Image association being added continued from previous page)

ADD ASSOCIATION (2 objects)

Number	Name	Association Type
A062V816_A1.PRT	a062v816_a1.prt	
A062V816	SPRING, COMPRESSION	Image

Do you want to submit

OK Cancel

CAD Object

Products > Parts Commercial Low Range Genset, Power Systems

CAD Part - a062v816_a1.prt, Power Systems, A.1

Details Content **Related Objects** Changes History Representations/An

Where Used | Parts | CAD/Dynamic Documents | Distribution Targets

Parts Default

Name	Actions	Number	Version	Association
SPRING, COMPRESSION		A062V816	A.4 (Engineering)	Image

Associate Part

Part - A062V816, SPRING, COMPRESSION, Power Systems, A.4 (Engineering)

Details Structure **Related Objects** Changes History Where Used Plants Upstream Engineering View Packages Supersedes Representations/Annotations Notes Rel

Version History | Timeline

Version History General

Organization ID	Version	State	Comments	Modified By
Power Systems	A.4 (Engineering)	Released		Site, Administrator
Power Systems	A.3 (Engineering)	Released	Manage Association Utility Checkin by Administrator-- association from A062V816_A1.PRT to A062V816	Site, Administrator

Manage Associations Utility (Cont.)

- To remove an association using the utility, navigate to the CAD object's details page
 - In the example shown, a Part at Released state has an applied form CAD model that should not be associated; the utility is used to remove the Image association from the Part to the model

The image illustrates the process of removing an association using the Manage Associations Utility. It is divided into three sequential steps:

- Step 1:** The user navigates to the CAD object's details page. In the 'Actions' menu, the 'Manage Associations Utility' option is selected, which opens a sub-menu where 'Remove Association' is highlighted.
- Step 2:** The 'Remove Association' dialog box is displayed, showing a table with two objects. The second object, 'A062V816 SPRING, COMPRESSION Image', is selected. The dialog includes a search bar, a table with columns for Number, Name, and Association Type, and a 'Submit' button.
- Step 3:** A confirmation dialog box asks 'Do you want to submit', with 'OK' and 'Cancel' buttons.

Number	Name	Association Type
A062V816_A1.PRT	a062v816_a1.prt	
A062V816	SPRING, COMPRESSION	Image

Manage Associations Utility (Cont.)

(Example of Image association being removed continued from previous page)

CAD Object

Products > Parts Commercial > Range Genset, Power Systems

Actions > CAD Part - a062v816_a1.prt, Power Systems, A.1

Details Content **Related Objects** Changes History Representations/Annot

Where Used | Parts | CAD/Dynamic Documents | Distribution Targets

Parts Default

Name	Actions	Number ↑	Version	Association
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No Associated Part

Actions > Part - A062V816, SPRING, COMPRESSION, Power Systems, A.5 (Engineering)

Details Structure Related Objects Changes History Where Used Plants Upstream Engineering View Packages Supersedes Representations/Annot

Version History | Timeline

Version History General

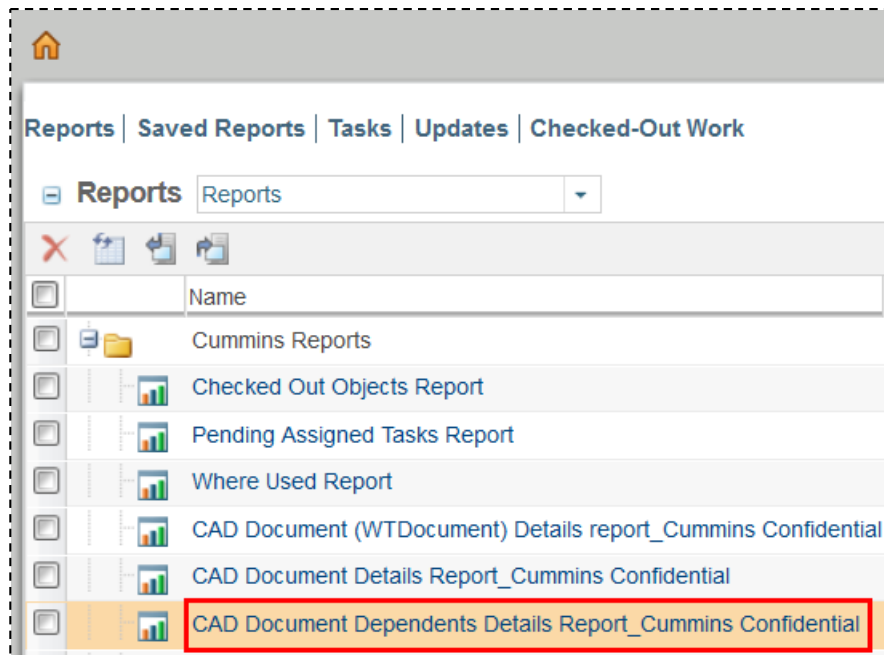
Organization ID	Version ↓	State	Comments
Power Systems	A.5 (Engineering)	Released	Manage Association Utility Checkin by Administrator-- association from A062V816_A1.PRT to A062V816

Related Need to Analyze CAD Assembly Component Associations

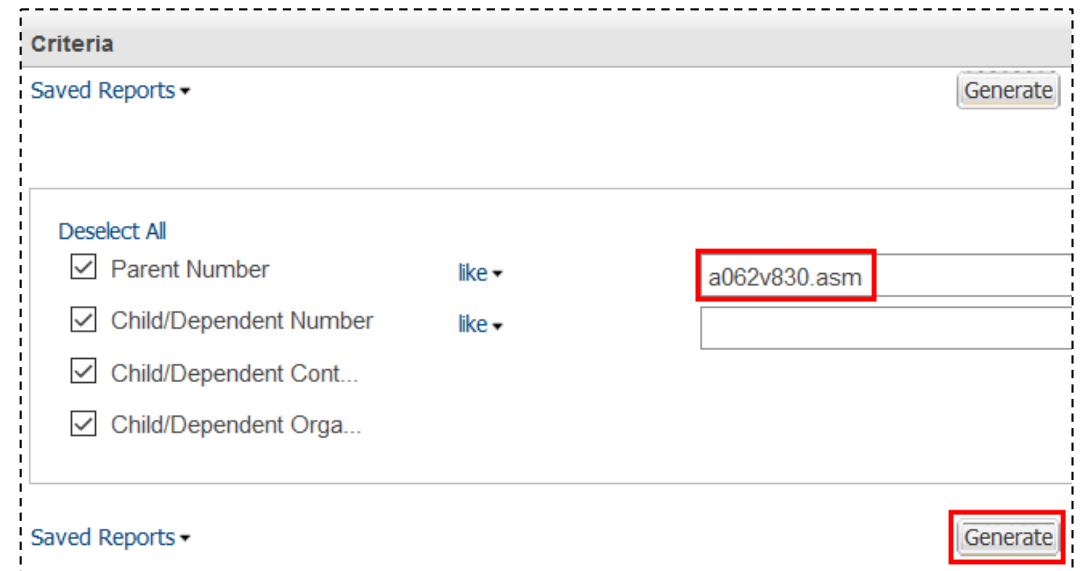
- Need the ability to efficiently review the Part to CAD associations for CAD assembly components to determine whether the associations needed to facilitate CAD to Part structure synchronization exist
- May be addressed by Part to Document Working Group top ten item for displaying the association type in PSB. Have requested consideration of displaying association types in CAD structure browser as well to enable both top down and bottom up review
- Currently handling through Reports capability

CAD Document Dependent Details Report to Evaluate Part to CAD Associations for a CAD Assembly

- 1) Navigate to the Reports section of the Home page and select the CAD Document Dependents Details report from the Cummins Reports folder



- 2) Enter the CAD assembly number and Generate the report



CAD Document Dependent Details Report to Evaluate Part to CAD Associations for a CAD Assembly (Cont.)

- 3) The Child Owner-Image Associated Part column shows whether each CAD assembly component has an Owner or Image association to a Part or not. For any components not having an Owner or Image association to a Part, that component would not synchronize from the CAD assembly BOM into the Part EBOM

Parent Number	Parent Owner-Image Associated Part	Child/Dependent Number	Child/Dependent Container Name	Child/Dependent Organization Name	Child Owner-Image Associated Part
A062V816.ASM	A062V816	A062W539.ASM	Parts Consumer	Power Systems	A062W539
A062V816.ASM	A062V816	A062W540.PRT	Parts Consumer	Power Systems	A062W540
A062V816.ASM	A062V816	A062W541.PRT	Parts Consumer	Power Systems	A062W541
A062V816.ASM	A062V816	A062W545.PRT	Parts Consumer	Power Systems	A062W545
A062V816.ASM	A062V816	A062W547.PRT	Parts Consumer	Power Systems	A062W547

- 4) Missing Owner or Image associations can be added using the Manage Associations Utility