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aras
to CAD Systems Connector

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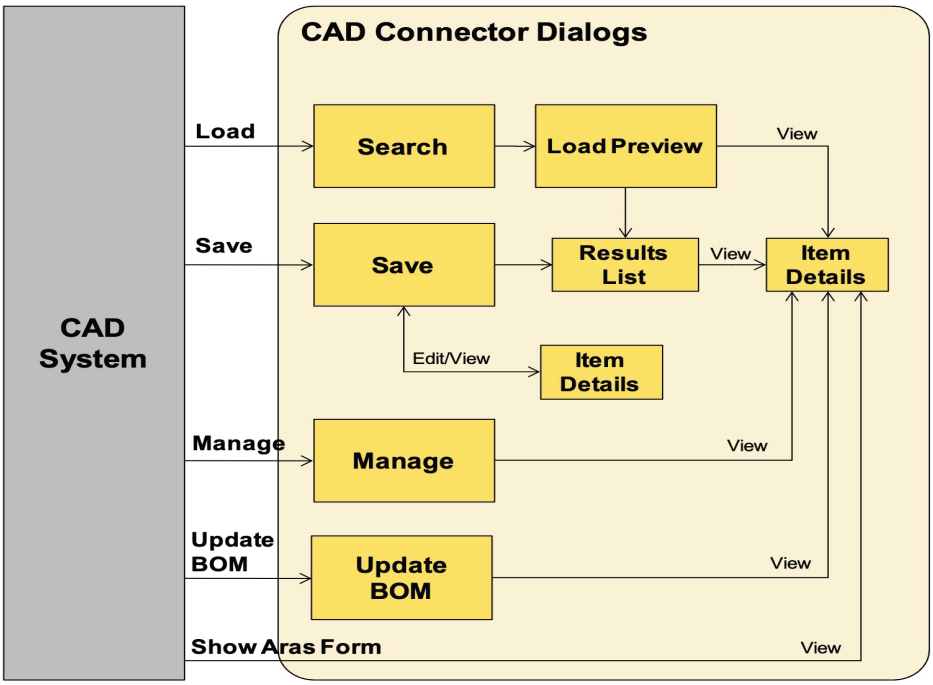
CAD Data Management

The DAIMIA Integration Platform effectively oversees CAD documents, files, items, and bill of materials, along with managing change and release processes through standardized functionalities. Within the broader context of PLM, efficient CAD data management plays a pivotal role. Explore the possibilities for your company to collaborate with Aras in delivering CAD Connectors that seamlessly integrate with the Aras CAD Integration Platform, ensuring smooth operations.

Highlights

- High quality of UX/UI
- Easy to install
- Easy to configure (no-code)
- 2 hours of training
- Aras SaaS compatible
- Supporting all new majors CAD Packages
- Support Top-Down approach
- Doesn't use Hoops to create thumbnail/viewable files
- Administration no code in Aras (No scripting/coding/XML files)
- Remarkable performance
- Document and file management
- Support of all relevant MCAD objects
- Management of complex MCAD structures
- Create and Update of items and BOM
- Workflow and release management
- Check-in and check-out from MCAD
- Automatic rename to unique file names
- Take and release ownership
- Management of multiple revisions
- Save preview before final saving
- Search in/load from PLM, direcly via MCAD
- Bidirectional exchange of properties
- Update PLM attributes from MCAD
- File conversion (e.g. Viewables)



Save Function: CAD Documents (items, structure, and associated files) and associated parts are created and/or updated in Aras.

Load Function: CAD files transferred from the Aras vault and displayed in CAD.

Manage Items Function: CAD files transferred from the Aras vault, and displayed in CAD.

Update BOM Function: Part BOM corresponding to the active model in CAD is successfully updated.

Show Aras Form Function: Item details are displayed.

Update Properties Function: Properties of the CAD files are updated, and as a result, drawing title blocks and similar displays in CAD (that are based on file properties) are updated as well.

Customization Ability: Easily modify configuration settings, for example property mappings and default save option.

Installation Requirements

DAIMIA Aras Connector Application

Component	Platform	Version
Operating System	Windows	7, 8, 10, 11
.NET	.NET Framework	4.8.0
.NET Core Desktop Runtime		6.0

DAIMIA Aras License Server

Component	Platform	Version
Operating System	Windows	7, 8, 10, 11
.NET	.NET Framework	4.8.0

License Server Installation Procedures

1. Run the License Server installer.
2. Allow the installation process to finish.
3. Completion of installation.

Main Application Installation Procedures

1. Verify that you possess administrator privileges.
2. Run the Main Application installer and authorize administrator permissions as prompted.
3. Input the Aras Innovator URL.
4. Provide the License Server address and port.
5. Allow the installation process to complete.
6. Completion of installation.

Aras Dependencies Setup

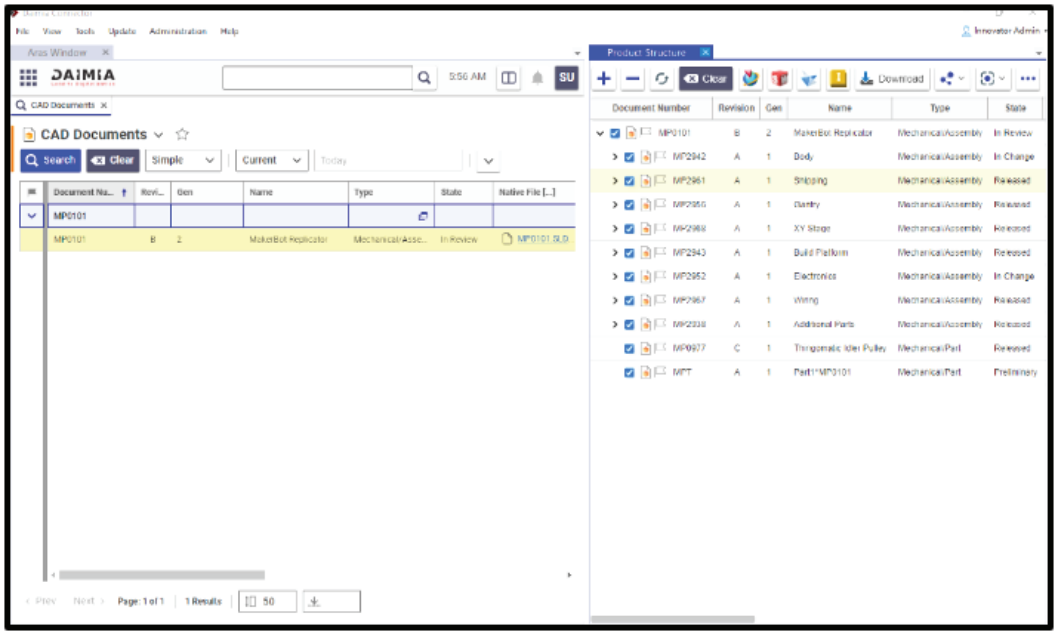
The Daimia Aras Connector relies on additional dependencies from Aras Innovator to manage global settings and enable extra functionalities such as property mapping. While the installation of Aras requirements is not mandatory, it is essential for accessing certain features.

Procedure

1. Access the connector application by logging in with a user account possessing administrator privileges in Aras Innovator.
2. Upon successful login, the administrator menu will be accessible from the menu bar.
3. Within the administrator menu, you can perform the following actions:
   - Install dependencies
   - Uninstall dependencies
   - Check the status of installed dependencies.

Getting Started

About Aras Connector New Modern UI



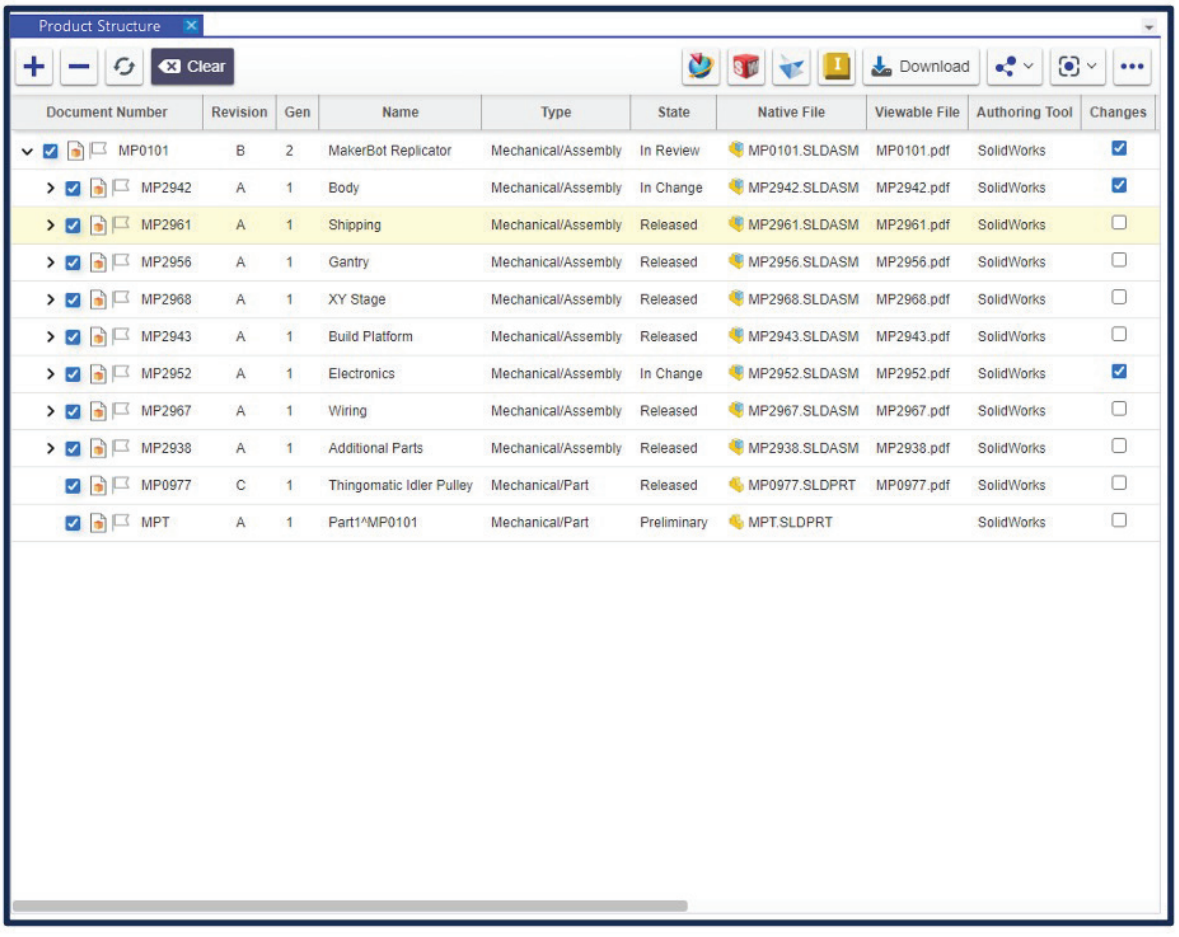
Aras Interface

The primary goal of the DAIMIA Aras Connector is to establish a seamless user experience that integrates seamlessly with Aras Innovator.

Central to achieving this objective is the Aras window, which serves as a pivotal component. This window facilitates navigation for users directly within the connector, eliminating the need to open Aras in a separate browser. Additionally, users can conveniently drag and drop Aras items from this window to another connector window.

Product Structure Window Functionality

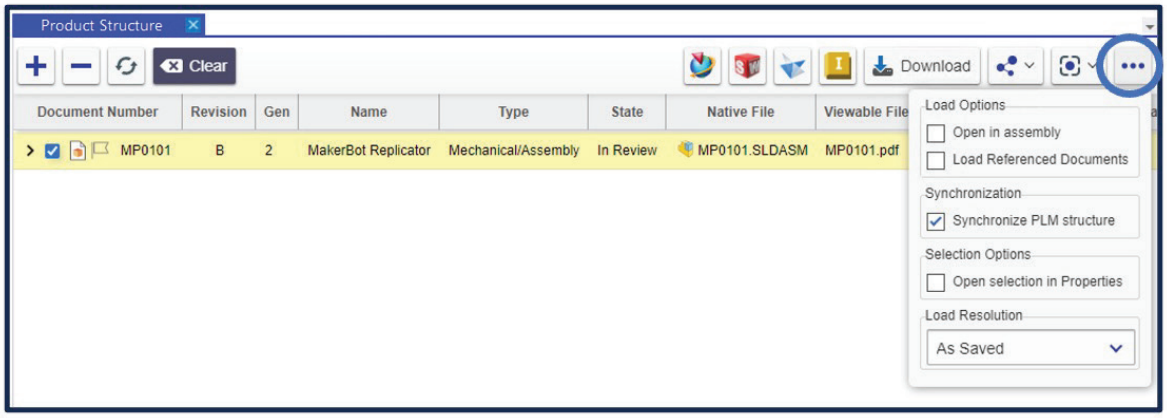
The Product Structure window serves as the conduit for transferring files from Aras to the local CAD system. To facilitate user control over the download process, the window displays the item structure within Aras. Each item in the structure is accompanied by a checkbox on the left side. By checking the checkbox for specific items, users indicate that only those selected items will be impacted by any actions performed within the Product Structure window. This checkbox functionality provides users with a granular level of control over the file transfer process, ensuring precision and efficiency in managing the product structure.



Document Number	Revision	Gen	Name	Type	State	Native File	Viewable File	Authoring Tool	Changes
MP0101	B	2	MakerBot Replicator	Mechanical/Assembly	In Review	MP0101.SLDASM	MP0101.pdf	SolidWorks	☑
MP2942	A	1	Body	Mechanical/Assembly	In Change	MP2942.SLDASM	MP2942.pdf	SolidWorks	☑
MP2961	A	1	Shipping	Mechanical/Assembly	Released	MP2961.SLDASM	MP2961.pdf	SolidWorks	☐
MP2956	A	1	Gantry	Mechanical/Assembly	Released	MP2956.SLDASM	MP2956.pdf	SolidWorks	☐
MP2968	A	1	XY Stage	Mechanical/Assembly	Released	MP2968.SLDASM	MP2968.pdf	SolidWorks	☐
MP2943	A	1	Build Platform	Mechanical/Assembly	Released	MP2943.SLDASM	MP2943.pdf	SolidWorks	☐
MP2952	A	1	Electronics	Mechanical/Assembly	In Change	MP2952.SLDASM	MP2952.pdf	SolidWorks	☑
MP2967	A	1	Wiring	Mechanical/Assembly	Released	MP2967.SLDASM	MP2967.pdf	SolidWorks	☐
MP2938	A	1	Additional Parts	Mechanical/Assembly	Released	MP2938.SLDASM	MP2938.pdf	SolidWorks	☐
MP0977	C	1	Thingomatic Idler Pulley	Mechanical/Part	Released	MP0977.SLDPRT	MP0977.pdf	SolidWorks	☐
MPT	A	1	Part1^MP0101	Mechanical/Part	Preliminary	MPT.SLDPRT		SolidWorks	☐

Buttons and Descriptions

- **Expand:** Expands the tree view to display all child nodes of the root node.
- **Collapse:** Collapses the tree view, showing only the root nodes.
- **Refresh:** Refreshes the tree view, updating the nodes with the latest information.
- **Clear:** Clears the tree view, removing all displayed nodes.
- **Open in CAD:** Opens the documents associated with the selected node in the chosen CAD system.
- **Download:** Downloads the documents linked to the selected node to the user's workspace without automatically opening them.
- **Export:** Exports item properties listed in the tree view to either an MS Excel sheet or an MS Word document. This function allows users to capture and document the information displayed in the tree view.



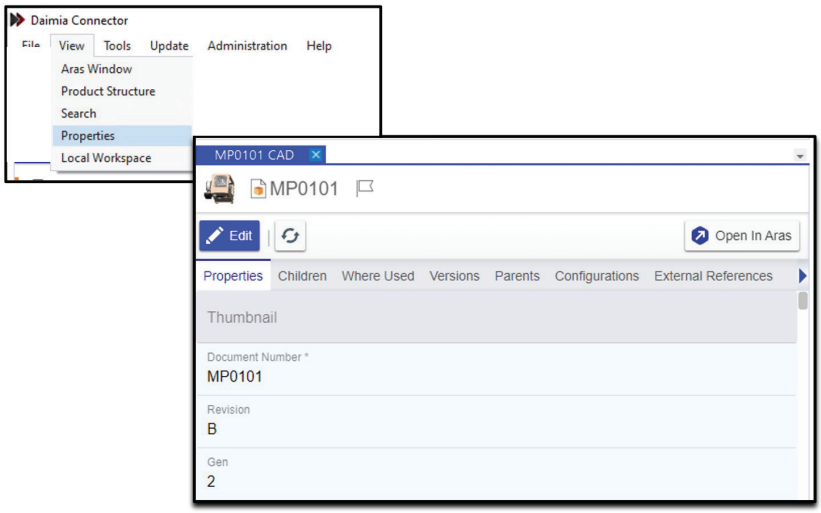
Load Options Descriptions

Opens the options menu for the Product Structure window. The available options are explained below.

- **Open in Assembly:** Initiates a dialog box during the download process, allowing the user to select an assembly CAD document in Aras. All root items selected in the Product Structure window will be added as children to the chosen assembly.
- **Load Referenced Documents:** This selection loads the referenced document.
- **Sync PLM structure:** Allows for automatic updates to the CAD assembly structure in accordance with changes in Aras relationships. This feature ensures that changes in Aras are reflected in the CAD assembly structure.
- **Open Selected in Property:** Opens items in the property window when the user clicks on the related node.
- **Load Resolution:** Enables the user to choose the desired model loading resolution, such as "As Saved," "Released," or "Current." This provides flexibility in selecting the version of the model to be loaded.

Property Window

Users have the capability to drag and drop Aras items into this window to access detailed information. The window features various tabs, each dedicated to showcasing a distinct aspect of the selected item. The descriptions for these tabs are provided in the table below.



Property Window Tabs and Buttons Descriptions Tabs:

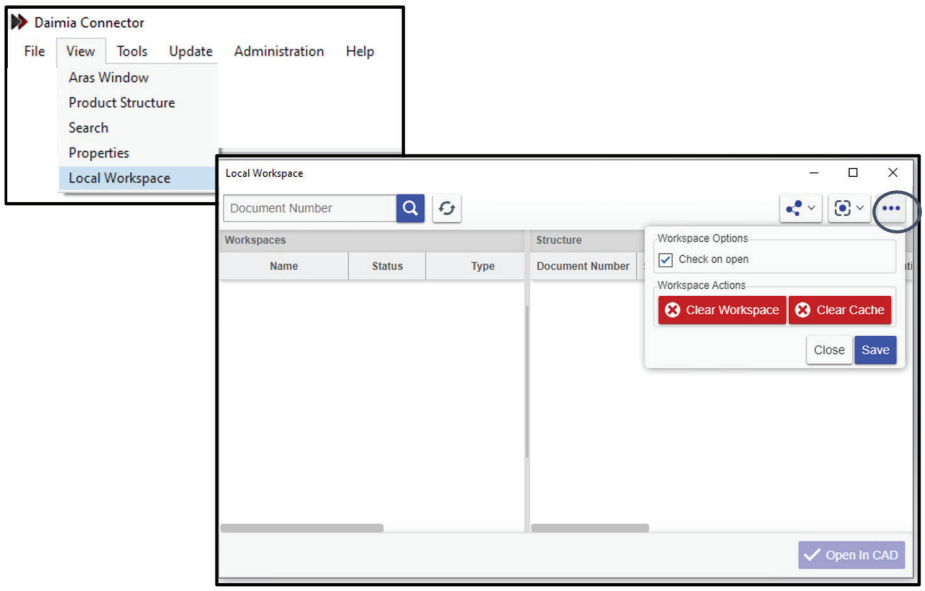
1. Properties: Shows item properties of the current item.
2. Children: Shows the item structure of the current item.
3. Where Used: Shows which items have a relationship with this item.
4. Versions: Displays the versions of the current item.
5. Parents: Shows parents of this item.
6. Configurations: Shows if the current item has CAD system configurations and configuration-specific parts.
7. External References: Shows if there are any CAD-based references associated with this item.

Buttons:

1. Edit: Claims the item and unlocks the Properties tab for making changes (Visible if the item is already claimed by the user).
2. Refresh: Refreshes the property window.
3. Open in Aras: Opens the current item's information in the Aras window.
** When edit mode activated, following options appears:*
4. Save: Saves the changes in the item (Visible if the item is already claimed by the current user).
5. Done: Saves the changes in the item and unclaims it (Visible if the item is already claimed by the current user).
6. Discard: Unclaims the item and discards the changes the user made in it (Visible if the item is already claimed by the current user).

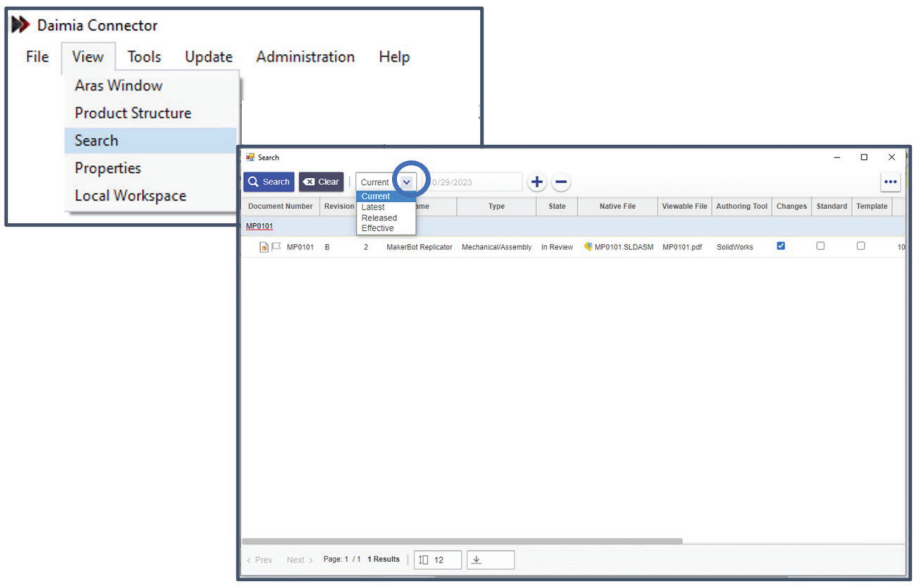
Local Workspace

The primary function of this window is to oversee the management of workspace files downloaded from PLM. Users have the ability to inspect both local and PLM properties of these workspace files. Additionally, users can claim workspace files, providing exclusive access for modifications, and have the option to clear either workspace or cached files.



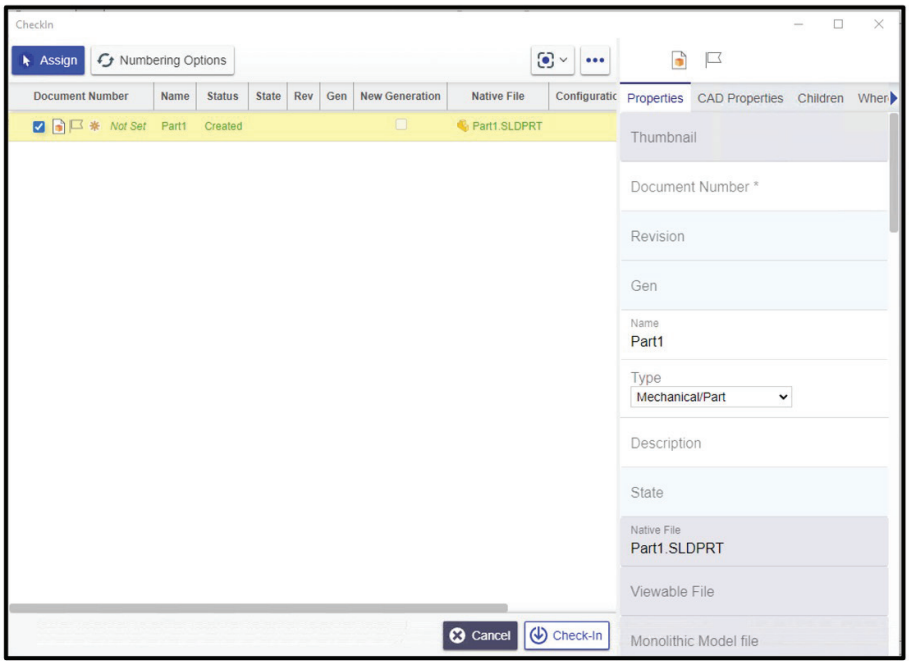
Search Window

Documents can be queried from the database within the connector.



Check in window

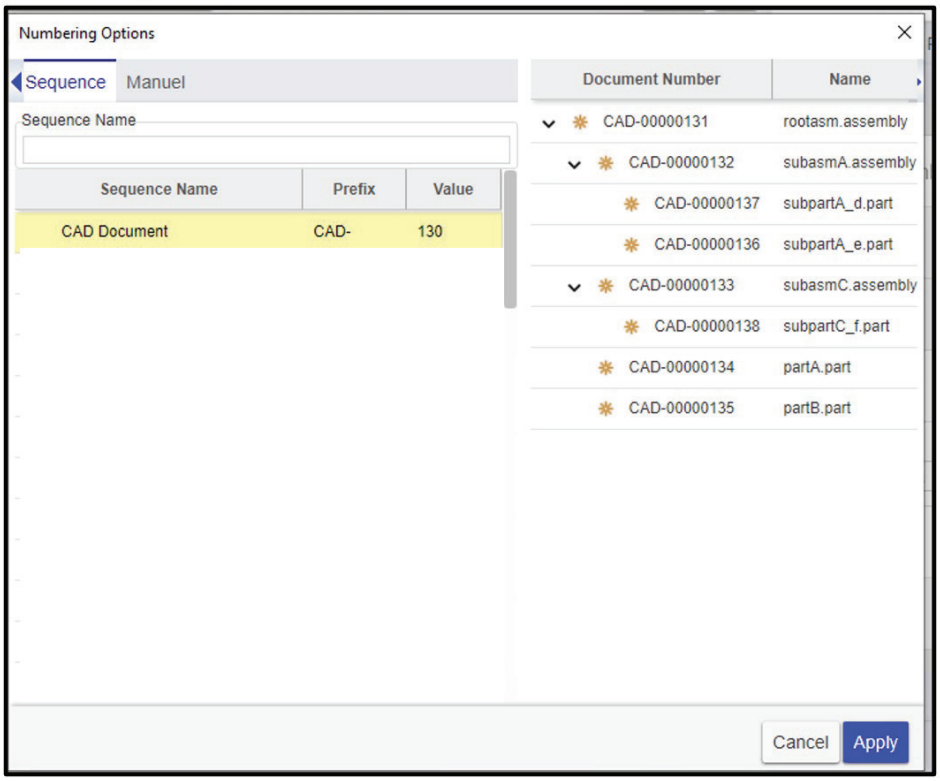
The Check-in window identifies the structure of all models in the CAD system and stores the collection of related files in Aras. This process involves creating a new item or utilizing an existing CAD document item. The Check-in dialog additionally provides users with the ability to observe the local and PLM status of these files, along with detailed properties for CAD documents.



Buttons and Descriptions

- **Assign:** This button allows you to assign an existing CAD item to a CAD file that is in the in ARAS PLM system.
- **Numbering Options:** Opens the numbering options dialog. This option is disabled if there are no items in the "created" state. (Refer to: numbering options)
- **Check-in:** Initiates the check-in process.
- **Cancel:** Cancels the ongoing check-in process.

Numbering

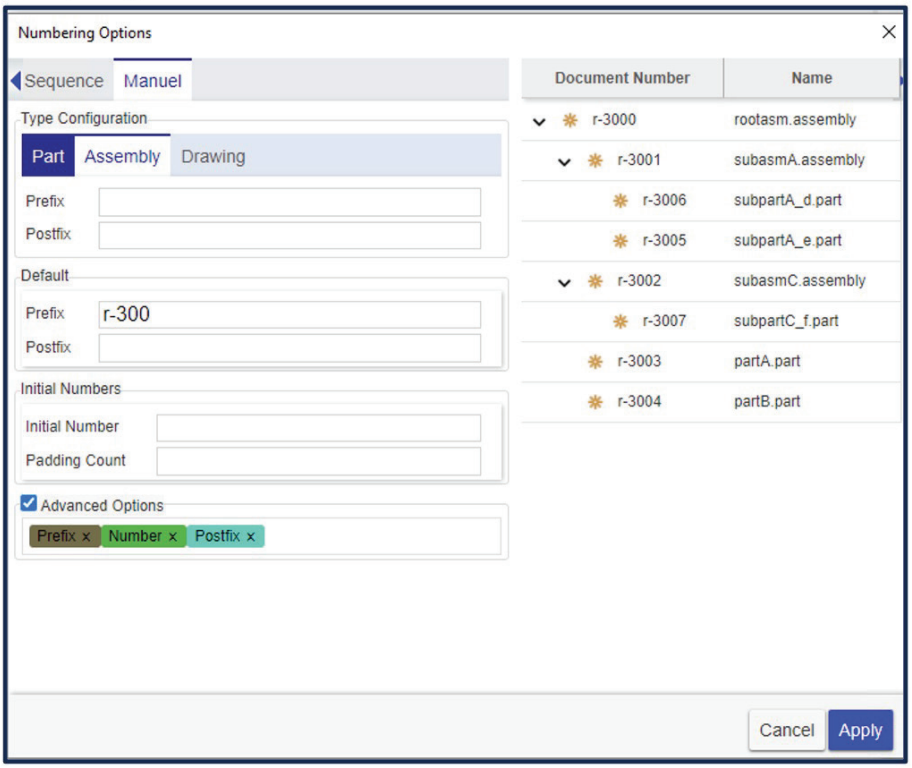


Numbering options

Options for numbering CAD Documents and Parts created by the CAD connector, such as:

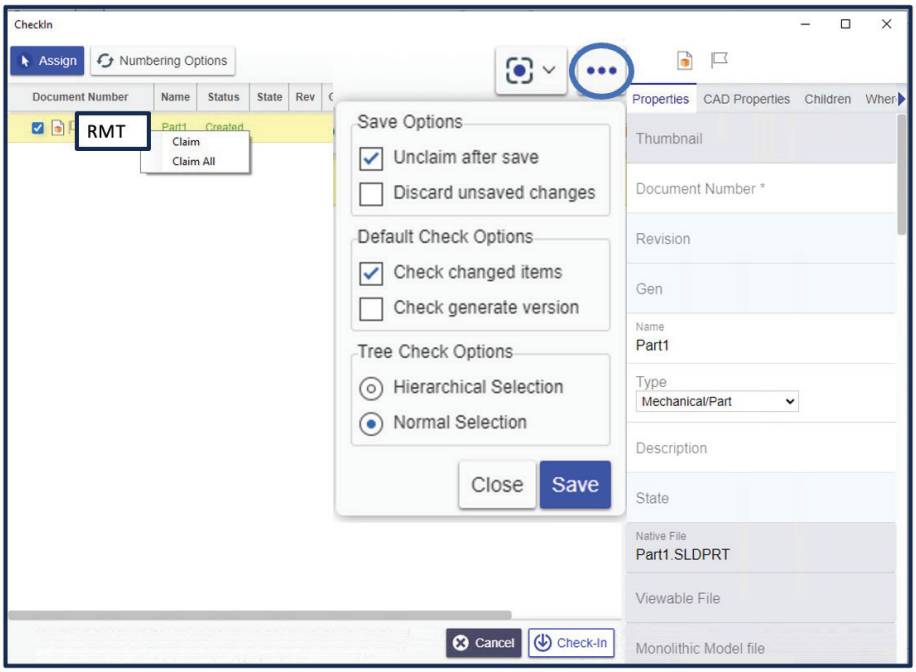
- Number based on the CAD filename (mainly for legacy data migration)
- Number based on a CAD property
- Independent numbering for CAD Documents and Parts (e.g. CAD Document = CAD12345, Part = P54321)
- Match assigned Part number (e.g. CAD Document = P54321, Part = P54321)
  We used the option 4 in our connector and used CAD sequence von aras innovator.

Customer Option



This function allows you to create a custom numbering system that aligns with your metholodology.

Check-in Options



Options and Descriptions

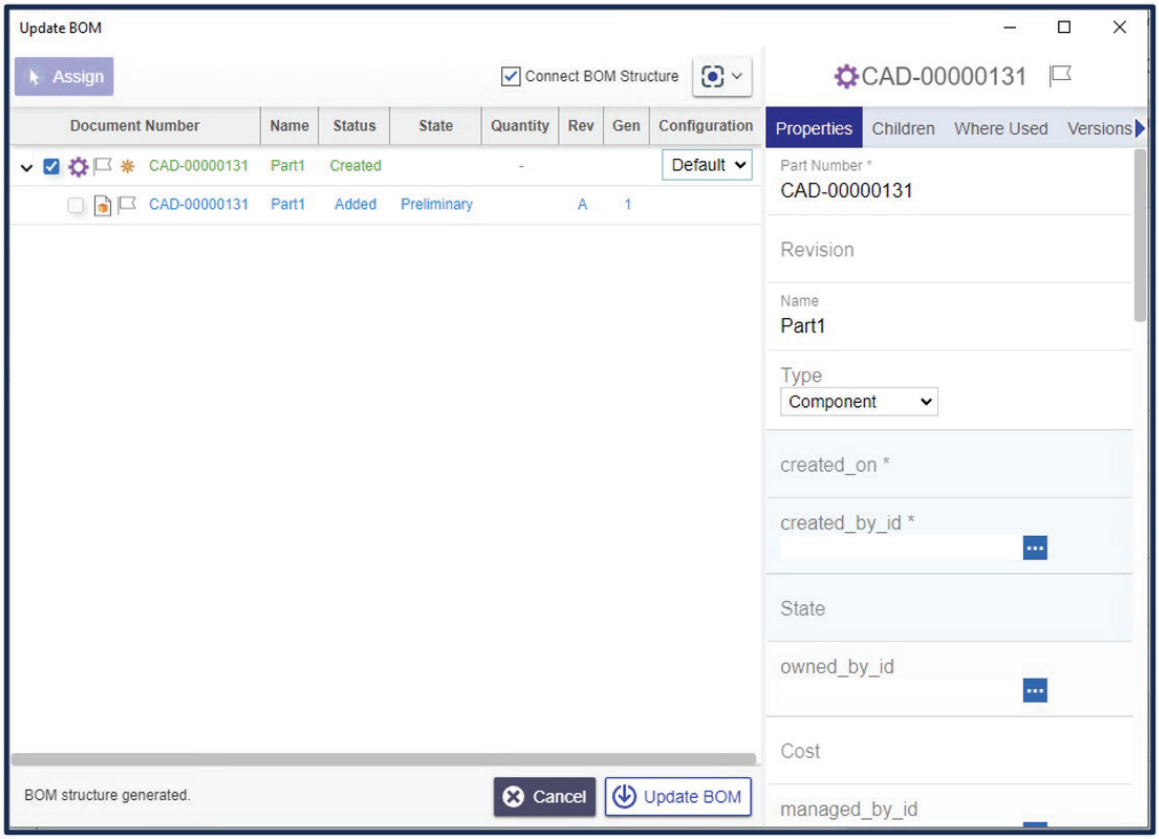
- **Unclaim after save:** If there are existing Aras items, they will be claimed in the check-in process. Activating this option will unclaim them after saving.
- **Discard unsaved changes:** Allows the user to decide which files are checked in. Activating this option will discard any changes made in the files that are not checked in.
- **Check changed items:** The connector automatically checks the checkbox of files with "changed" or "created" states.
- **Check generate version:** The connector automatically checks the "new generation" checkbox for files in the "changed" state.
- **Hierarchical Selection:** When this option is active, checking a child item will automatically check the assembly as well.
- **Normal Selection:** When this option is enabled, only the item you explicitly check will be selected for check-in.

Update BOM window

Steps in the BOM Update process include:

Automatically creating the Parts: This step involves the automatic creation of Parts if they do not already exist.
Linking the newly created or existing Part to the corresponding CAD Document: After creating the Parts, the next step is to establish a link between the newly created or existing Part and the corresponding CAD Document.
Setting properties on the Parts based on mapping from CAD properties: Properties on the Parts are set based on the mapping from CAD properties. This ensures consistency and accuracy in the data.
Creating or updating the Part BOM: The process involves creating or updating the Part Bill of Materials (BOM), providing a structured representation of the components and their relationships.

Users can utilize this window to assign an Aras part to the CAD document, either by creating a new part or using an existing one. It also creates relationships between Aras parts in accordance with the CAD structure. If the CAD structure already has related parts, the Update BOM window will update those parts instead of creating new ones.



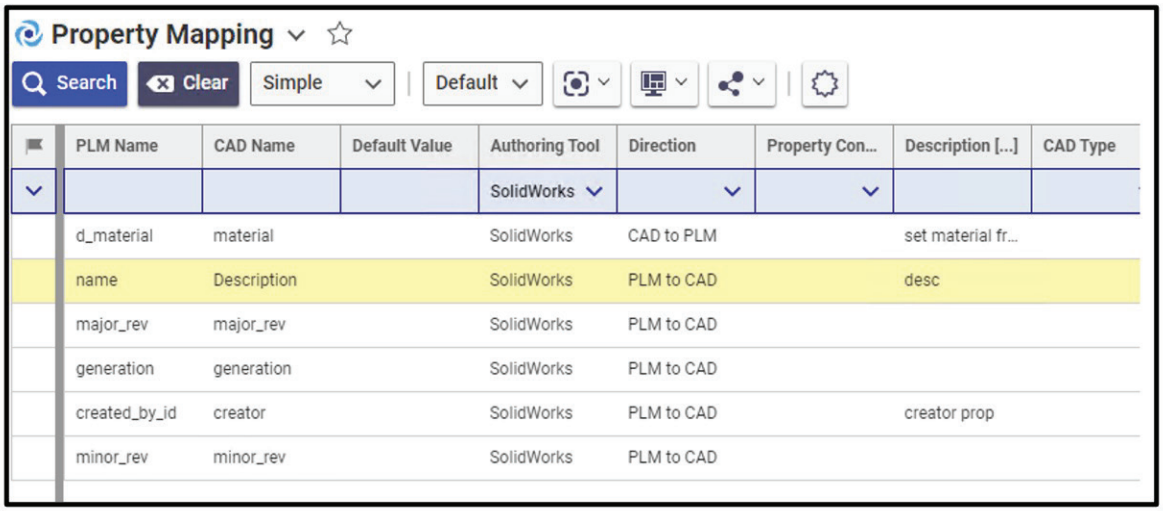
Buttons and Descriptions

- **Assign:** This button allows you to assign an existing part item to a part item that is in the "created" status.
- **Update BOM:** Initiates the update BOM process. This process involves creating or updating the Part Bill of Materials (BOM) based on the CAD structure and relationships.
- **Cancel:** Cancels the ongoing update BOM process.

Property Mapping for Custom Attributes

Update Properties:

The process involves bringing property values from PLM back into the CAD system. For instance, the current value of a property such as Revision is retrieved from PLM and integrated into the CAD system. This synchronization allows for the display of up-to-date information, such as Revision, on elements like a drawing title block in the CAD environment.



PLM Name	CAD Name	Default Value	Authoring Tool	Direction	Property Con...	Description [...]	CAD Type
			SolidWorks				
d_material	material		SolidWorks	CAD to PLM		set material fr...	
name	Description		SolidWorks	PLM to CAD		desc	
major_rev	major_rev		SolidWorks	PLM to CAD			
generation	generation		SolidWorks	PLM to CAD			
created_by_id	creator		SolidWorks	PLM to CAD		creator prop	
minor_rev	minor_rev		SolidWorks	PLM to CAD			

Icons

Icon	Description
 Open in Connector	**Opens Daimia Aras Connector instance:** This button initiates the launch of a new instance of the Daimia Aras Connector. If there is already an instance opened, this button becomes disabled to prevent the opening of multiple instances.
 Create New	**Opens a search dialog that searches template CAD documents:** Activating this button triggers the opening of a search dialog specifically designed to locate template CAD documents. Once the user selects a template, the connector copies the template file and opens it in the CAD system.
 Sync	**Sends local changes to the PLM system:** This button facilitates the transfer of local changes made in the CAD system to the PLM (Product Lifecycle Management) system. Upon pressing, the connector opens the check-in window and proceeds with the check-in process to synchronize changes.
 Save as	**Creates an existing part & assembly and its related CAD documents as a new CAD document assembly in PLM:** With this button, users can generate a new CAD document assembly in the PLM system based on an existing assembly and its associated CAD documents. This action contributes to the efficient creation of assemblies within the PLM environment.
 Load	**Opens a search dialog that searches CAD documents:** Upon activation, this button prompts the opening of a search dialog specialized in locating CAD documents. Once a CAD document is selected, the connector opens the native files associated with the chosen CAD documents in the CAD system.
 Update BOM	**Creates or updates the part BOM structure of CAD documents:** This button allows users to establish or update the part Bill of Materials (BOM) structure for CAD documents. Pressing this button opens the update BOM window, initiating the process of creating or updating the BOM structure based on the CAD documents.
 Discard Changes	**Cancels all local changes in the active CAD document and reloads its first downloaded version in the CAD session:** Activating this button cancels any local modifications made to the active CAD document and reloads the initial downloaded version of the document in the current CAD session..

Icons

Icon	Description
 Fetch Properties	**Fetches predefined PLM properties and links those properties with the corresponding custom CAD properties:** This action retrieves pre-defined PLM (Product Lifecycle Management) properties and establishes links between these properties and the corresponding custom properties in the CAD system. This synchronization ensures consistency and accuracy of property data.
 Show Aras Properties	**Opens the property window for the current CAD file:** This button launches the property window specifically for the currently active CAD file, providing a detailed view of the file's properties.
 Replace Components	**Allows the user to replace current assembly components with pre-existing CAD files from PLM or the file system:** Upon activation, this button enables users to replace existing components within the current assembly with pre-existing CAD files sourced either from PLM or the local file system.
 Insert Components	**Allows the user to insert pre-existing CAD files from PLM or the local file system into the active assembly structure:** Activating this button grants users the capability to insert pre-existing CAD files, either from PLM or the local file system, into the structure of the active assembly.
 Local Workspace	**Opens the local file management window:** This action launches the local file management window, providing users with tools and options for managing CAD files stored locally.
 Options	**Opens Solidworks Add-in options menu:** This button opens the options menu for the Solidworks Add-in, allowing users to customize and configure various settings related to the integration.
 Help	**Opens the help window:** Activating this button opens the help window, providing users with assistance and guidance on using the features and functionalities of the CAD system.

Icons

Icon	Description
 Claim	**Claiming or Unclaiming an Item:** You can claim or unclaim an Item if you have the required access rights. When you claim an Item, it prevents other users from making changes to it. After you unclaim the Item, other users will be able to claim it and make changes..
 Open Drawing	**Open Drawing:** This button opens the associated document file in PLM System.
 Refresh	**Refresh:** Refreshes and reloads the Item information on the CAD doc.
 Display	**Display PLM Names:** List the attributes from a PLM System.