

# MWEngineeringChange 5.0.0

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# BEHAVIOR CHANGES

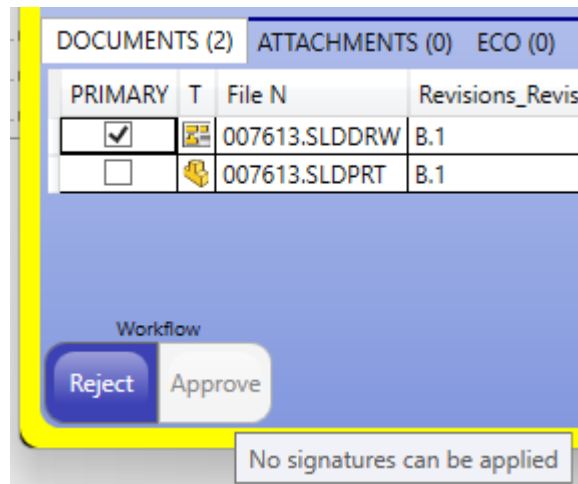
## *API Update*

Starting with R23 SP1.4, a new API called “GetSortedUIDListForProcessing” was released for MechWorks PDM. This API processes a list of UNIQUE\_IDs passed in random order. The API passes back the same list in order for life cycling (walking up the assembly’s structure). In short, “GetSortedUIDListForProcessing” allows approving documents in the correct order without using the Working Set API calls. Due to the use of Working Set API calls, approving IR or ECNs with more than one linked group was not allowed from the Task Manager.

The MWEngineeringChange tool checks the build of MechWorks PDM. If the build is older than R23 SP1.4, it will continue to use the Working Set API when approving documents. If the build is R23 SP1.4 or newer, the MWEngineeringChange tool will use the new “GetSortedUIDListForProcessing” API along with the standard “IncrementRevisionState” API to approve documents in order – making multiple linked groups compatible with the Task Manager.

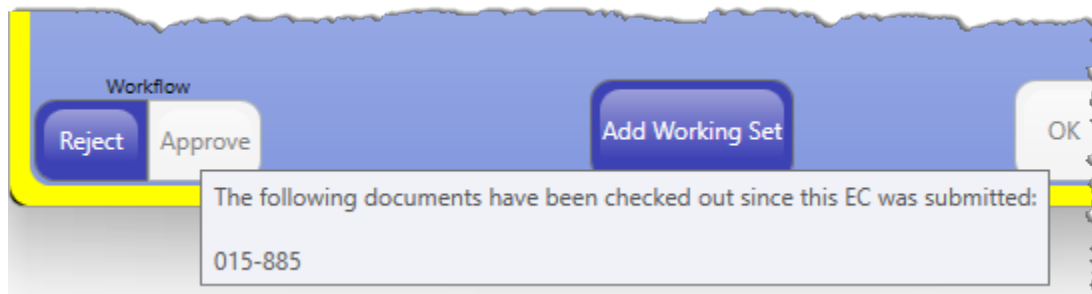
## *Group Review Approve Button*

If no signatures can be applied, the Approve button is disabled and displays a tooltip:



## *IR/ECN Last Check-In Verification*

When an IR or ECN in workflow loads, the approval button will check that none of the documents have a LAST\_CHECK\_IN\_DATE value that is newer than the WF\_SUBMITTED\_DATE. In other words, it verifies that no documents were somehow checked out and checked back in since the IR/ECN was submitted to workflow. If a document does have a more recent check-in date, the approval is not allowed:



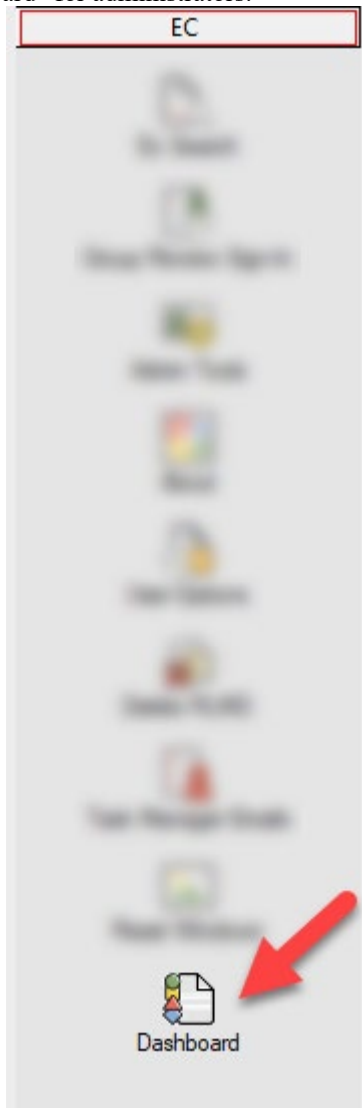
# ENHANCEMENTS

## Workflow Dashboard

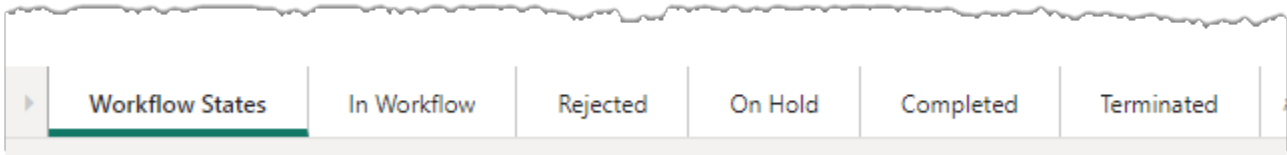
### *Workflow Dashboard*

NOTE: The Workflow Dashboard requires some configuration before use. See the separate documentation regarding configuring the Workflow Dashboard for first time use.

The EC shortcut bar includes a new “Dashboard” for administrators:

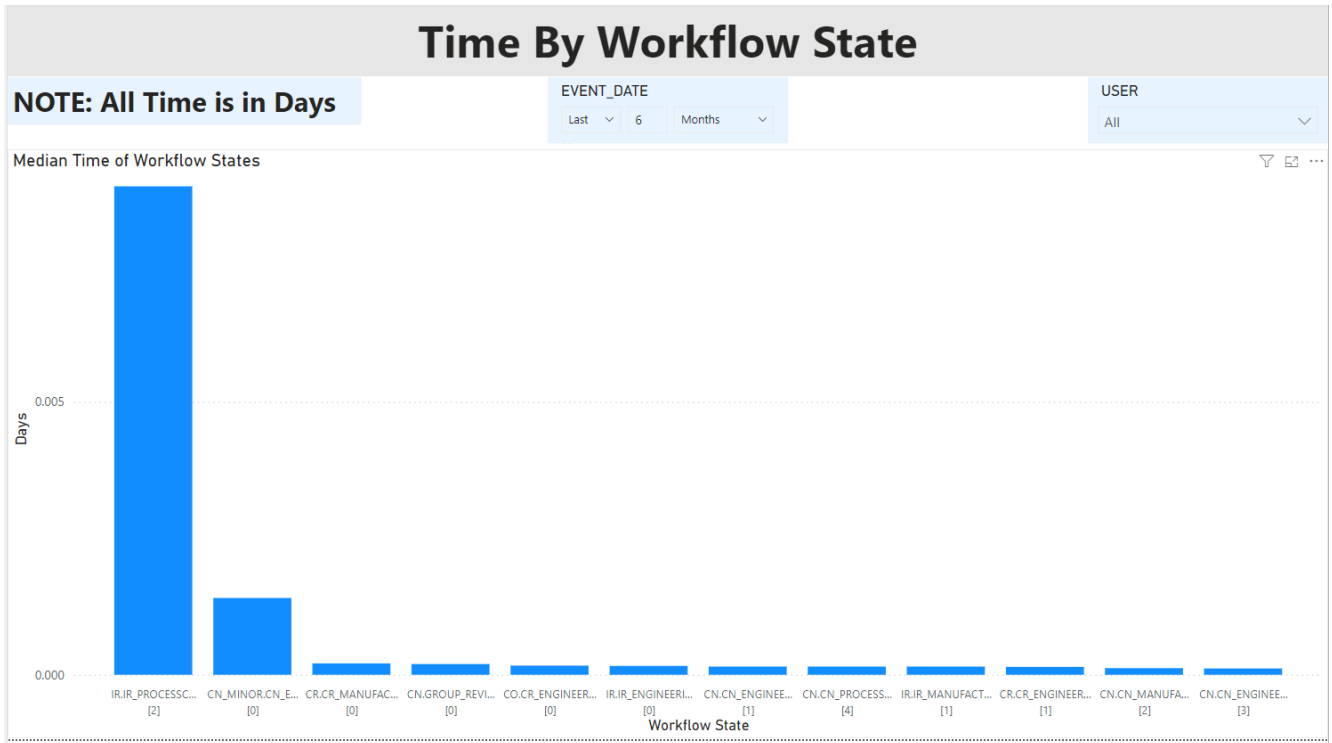


This “Workflow Dashboard” is a Power BI file displaying several reports regarding workflow. Power BI is a Microsoft application (available in the Microsoft APP store) for data visualization and reports. Similar to Excel, Power BI files are sorted into pages using tabs at the bottom of the interface:

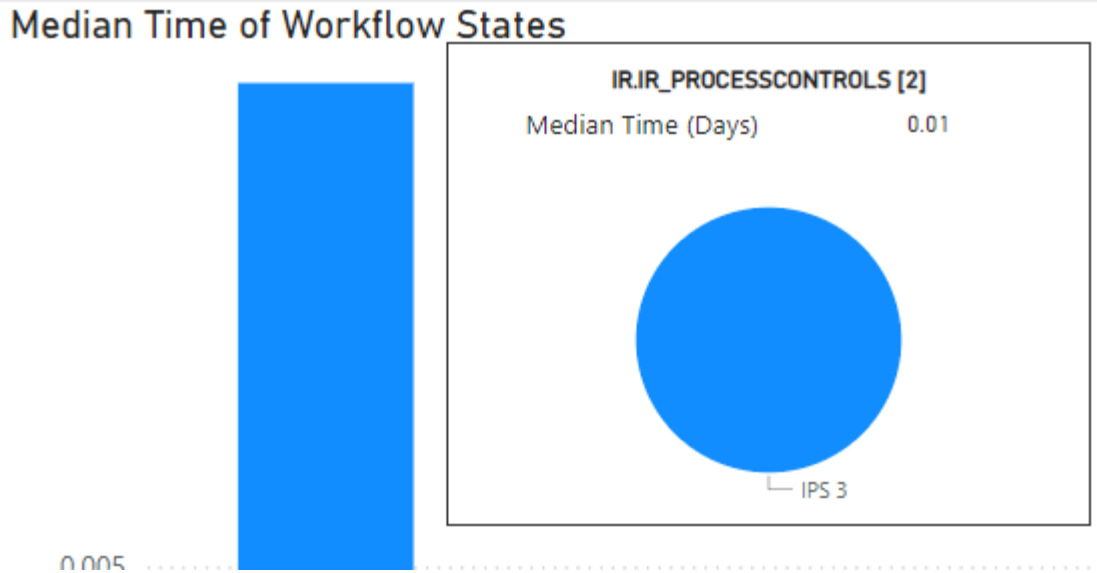


Each page/report is documented below.

The first page, “Workflow States” displays information about how long items are sitting in each workflow state:



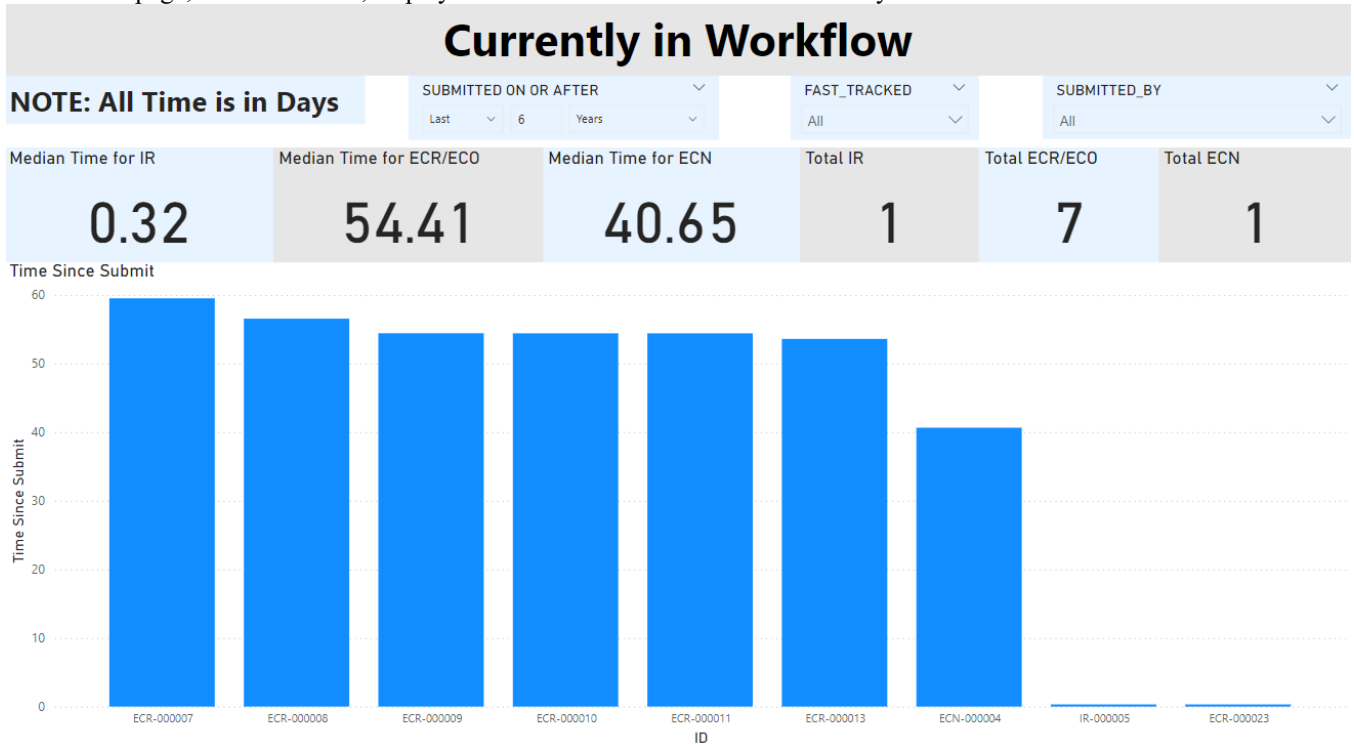
The graph displays each workflow state, organized from left to right, with the states taking the longest on the left. Hovering over a particular state will display further information about that state, including the median time items are sitting in that state, as well as the users who approved from that state:



At the top of the page, administrators can filter the report for a given timespan or user group as desired:



The second page, “In Workflow”, displays information about EC records currently in workflow:



The graph at the bottom of the page displays each EC record currently in workflow, ordered from left to right based on how long since the EC record was submitted to workflow. Hovering over an EC record displays further information about that record, including when it was created and submitted, as well as the primary document and description:

ECN-000004

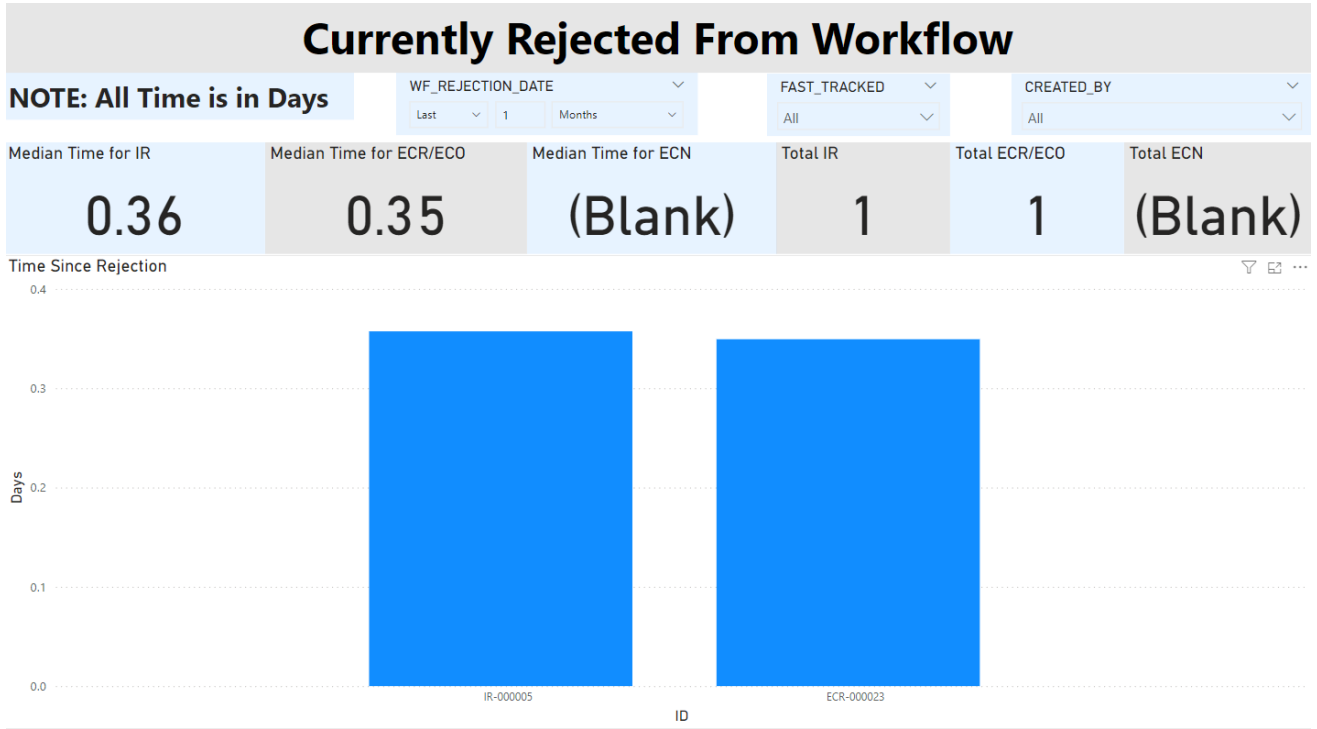
<u>CREATE</u> 8/14/2024 3:15:52 PM	<u>SUBMIT</u> 8/21/2024 8:25:24 AM
<u>TERMIN</u> (Blank)	<u>COMPLETE</u> (Blank)
<u>P.DOC</u> 000001	<u>REJECT</u> (Blank)

DESCRIPTION

drawing edits

The top of the page includes filters for time since submission, fast tracked status, and submitted by user. It also includes information about the median time each type EC has been in workflow, as well as a count of the total number of each type of EC currently in workflow.

The third page, “Rejected”, is very similar to the “In Workflow” page. Rather than displaying ECs in workflow, it displays information about ECs currently rejected from workflow:



The graph at the bottom of the page displays each EC record currently rejected from workflow, ordered from left to right based on how long since the EC record was rejected from workflow. Hovering over an EC record displays further information about that record, including when it was rejected, as well as the primary document and description:

**IR-000005**

<u>CREATE</u>	9/30/2024 1:47:00 PM	<u>SUBMIT</u>	(Blank)
<u>TERMIN</u>	(Blank)	<u>COMPLETE</u>	(Blank)
<u>P.DOC</u>	000001	<u>REJECT</u>	10/1/2024 3:25:33 PM

DESCRIPTION

test

The top of the page includes filters for time since rejection, fast tracked status, and created by user. It also includes information about the median time since each type of EC has been rejected from workflow, as well as a count of the total number of each type of EC currently rejected from workflow.

The fourth page, “On Hold”, is very similar to the “In Workflow” and “Rejected” pages. It displays information about ECs currently on hold in workflow:



The graph at the bottom of the page displays each EC record currently on hold, ordered from left to right based on how long since the EC record was placed on hold. Hovering over an EC record displays further information about that record, including when it was created and submitted, as well as the primary document and description:

**ECR-00023**

CREATE 9/30/2024 4:24:51 PM    SUBMIT 10/2/2024 11:35:59 A...

TERMIN (Blank)    COMPLETE (Blank)

P.DOC 000001    REJECT (Blank)

DESCRIPTION

Spelling error in notation

The top of the page includes filters for time since submission, fast tracked status, and submitted by user. It also includes information about the median time since each type of EC has been placed on hold, as well as a count of the total number of each type of EC currently on hold.

The fifth page, “Completed”, displays information about EC records which have been completed, specifically the total time it took between workflow submission and completion:

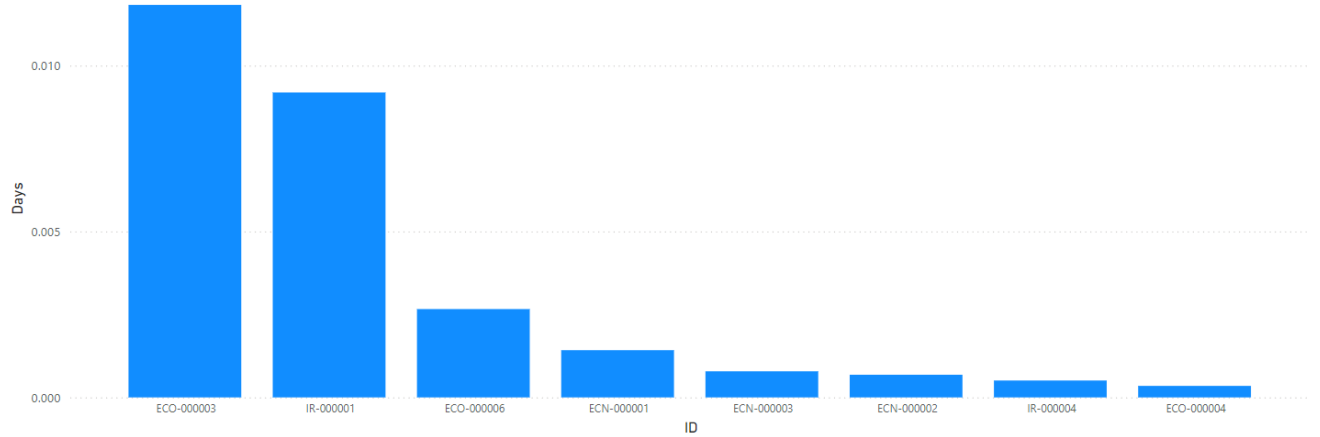
## Total Workflow Time: Submitted Until Completed

**NOTE: All Time is in Days**

CONFIRMED\_COMPLETED\_DATE: Last 1 Years  
 FAST\_TRACKED: All  
 SUBMITTED\_BY: All

Median Time for IR	Median Time for ECR/ECO	Median Time for ECN	Total IR	Total ECR/ECO	Total ECN
0.00	0.00	0.00	2	3	3

Total Time: Workflow Submit to Completed



The graph at the bottom of the page displays each completed EC record, ordered from left to right based on the amount of time between workflow submission and completion. Hovering over an EC record displays further information about that record, including when it was submitted and completed, as well as the primary document and description:

**ECN-00003**

[CREATE](#) 7/17/2024 2:15:33 PM     [SUBMIT](#) 7/17/2024 2:15:50 PM  
[TERMIN](#) (Blank)     [COMPLETE](#) 7/17/2024 2:16:58 PM  
[P.DOC](#) 000001     [REJECT](#) (Blank)

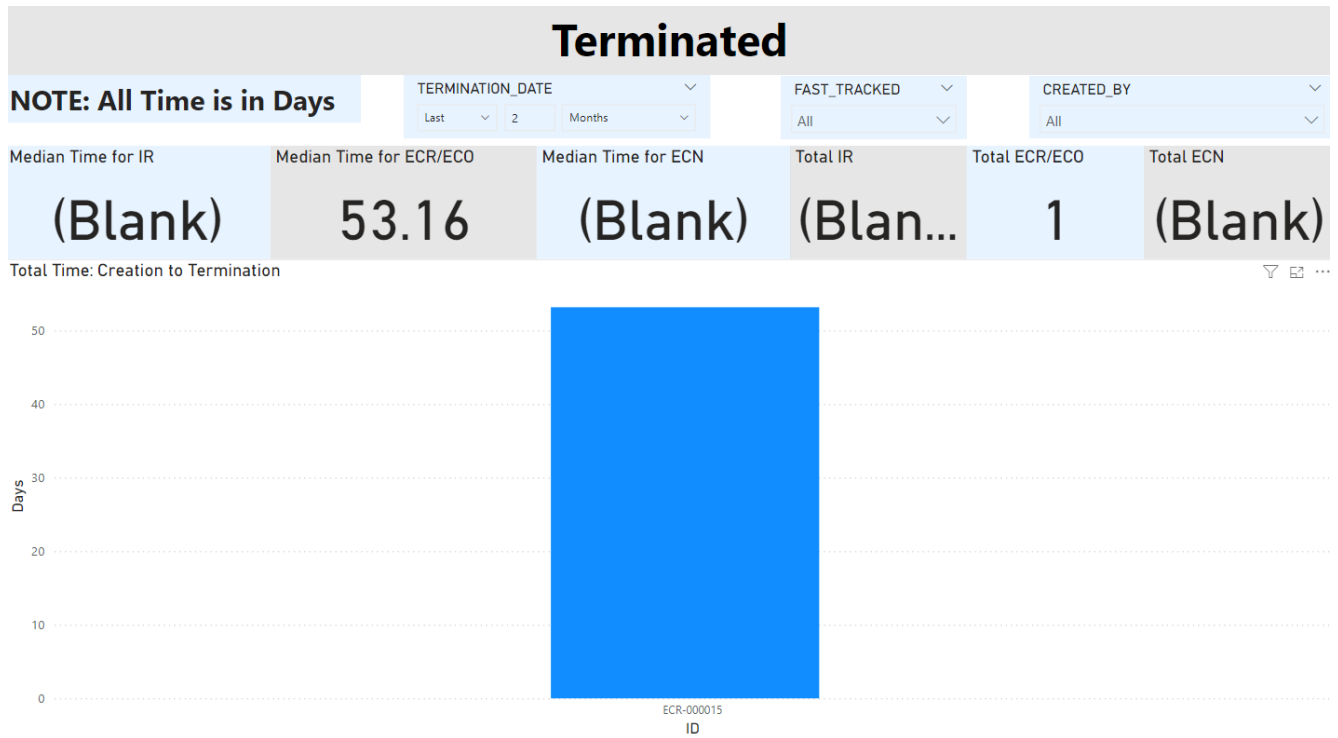
DESCRIPTION

Added hole

The top of the page includes filters for time since completion, fast tracked status, and submitted by user. It also includes information about the median time for each type of EC, as well as a count of the total number of each type of completed EC record.



The sixth and last page, “Terminated”, displays information about EC records which have been terminated, specifically the total time it took between creation and termination:



The graph at the bottom of the page displays each terminated EC record, ordered from left to right based on the amount of time between creation and termination. Hovering over an EC record displays further information about that record, including when it was created and terminated, as well as the primary document and description:

**ECR-000015**

<u>CREATE</u>	8/8/2024 9:52:58 AM	<u>SUBMIT</u>	(Blank)
<u>TERMIN</u>	9/30/2024 1:42:51 PM	<u>COMPLETE</u>	(Blank)
<u>P.DOC</u>	000001	<u>REJECT</u>	9/30/2024 1:42:15 PM

DESCRIPTION

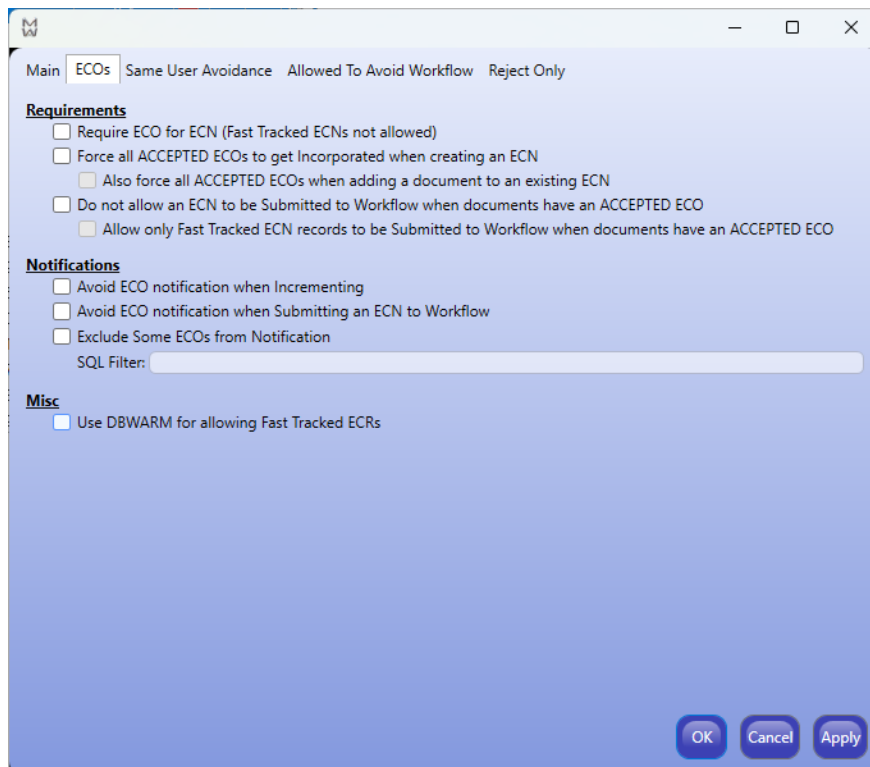
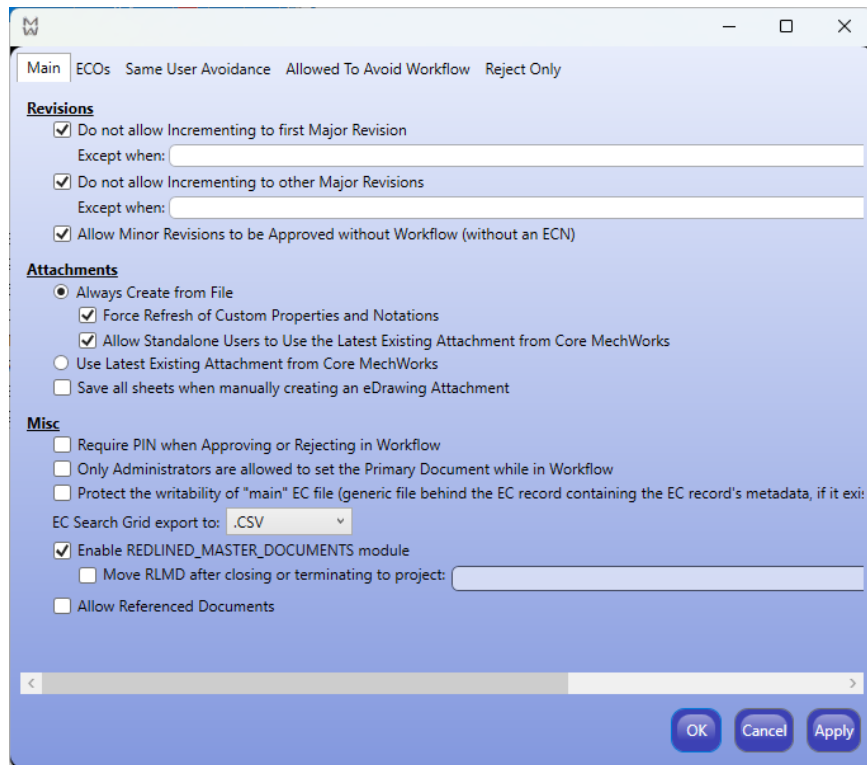
Spelling error in notation

The top of the page includes filters for time since termination, fast tracked status, and created by user. It also includes information about the median time for each type of EC, as well as a count of the total number of each type of terminated EC record.

# Global Options

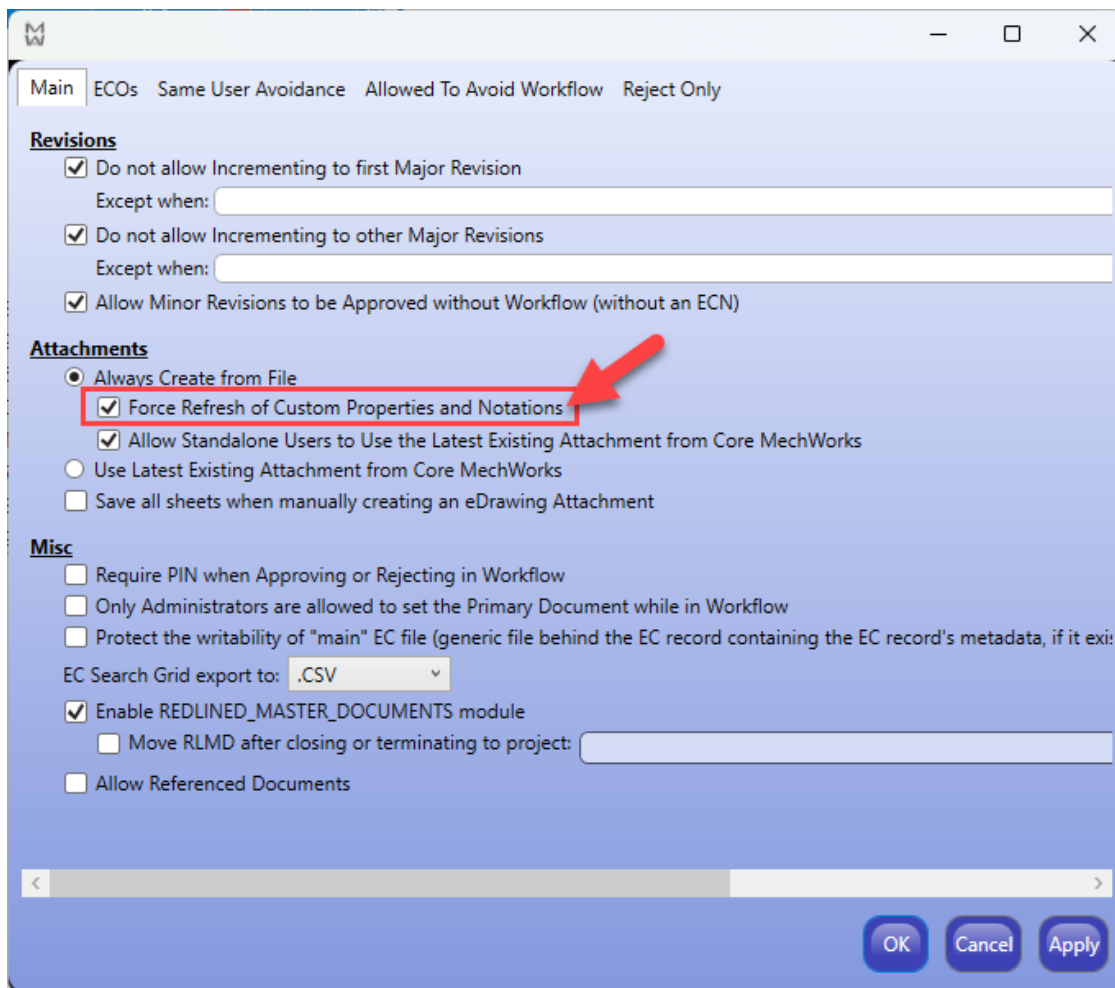
## UI Improvement

The user interface for the Global Options has been improved. ECO options have been moved to a separate tab, and options have been grouped by category:



## Updating Properties When Generating an Attachment

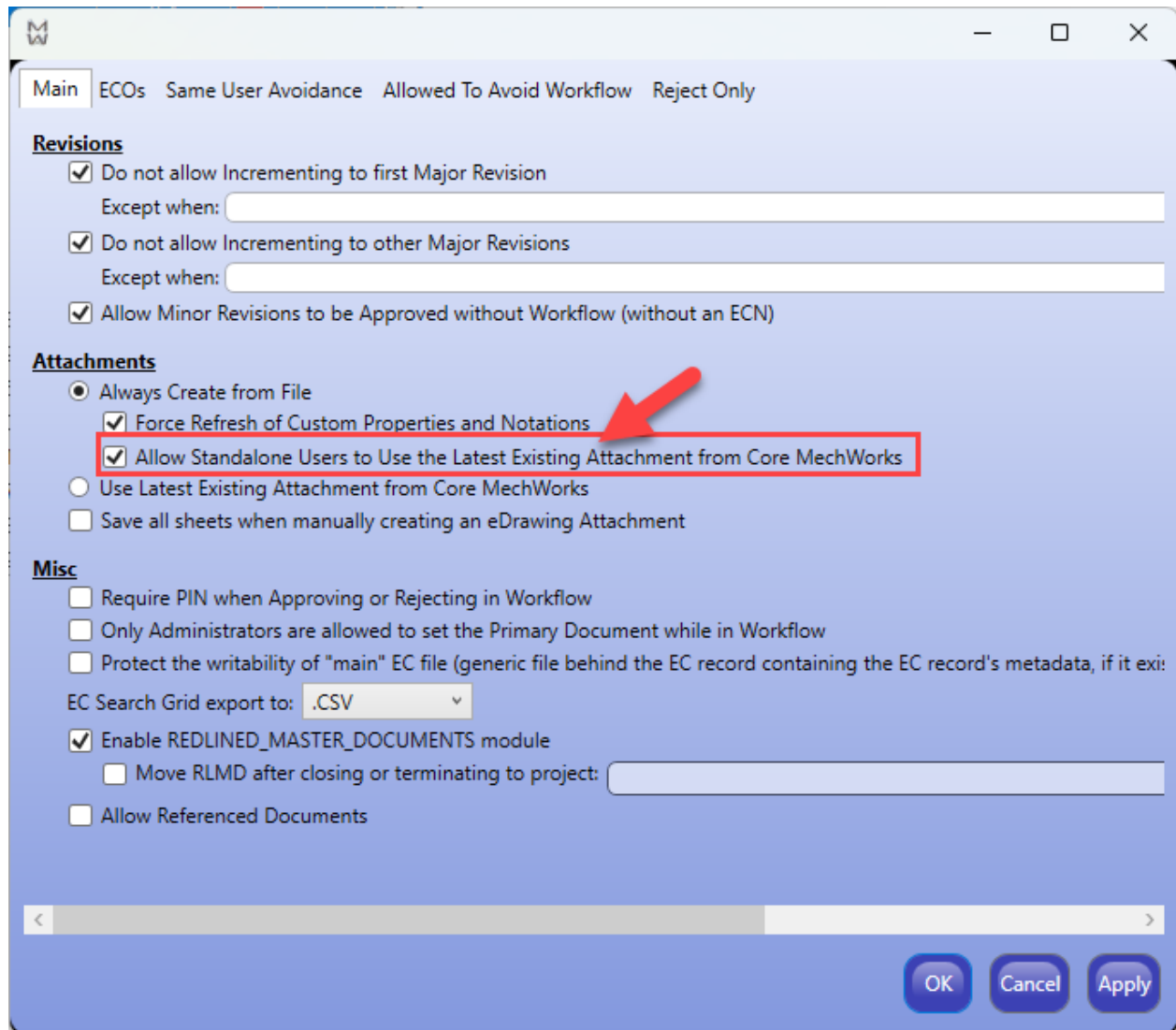
A new option to “Force Refresh of Custom Properties and Notations” has been added to the Attachments options:



If enabled, the custom properties and notations will always be refreshed before creating an attachment file.

## Standalone Users and Attachments

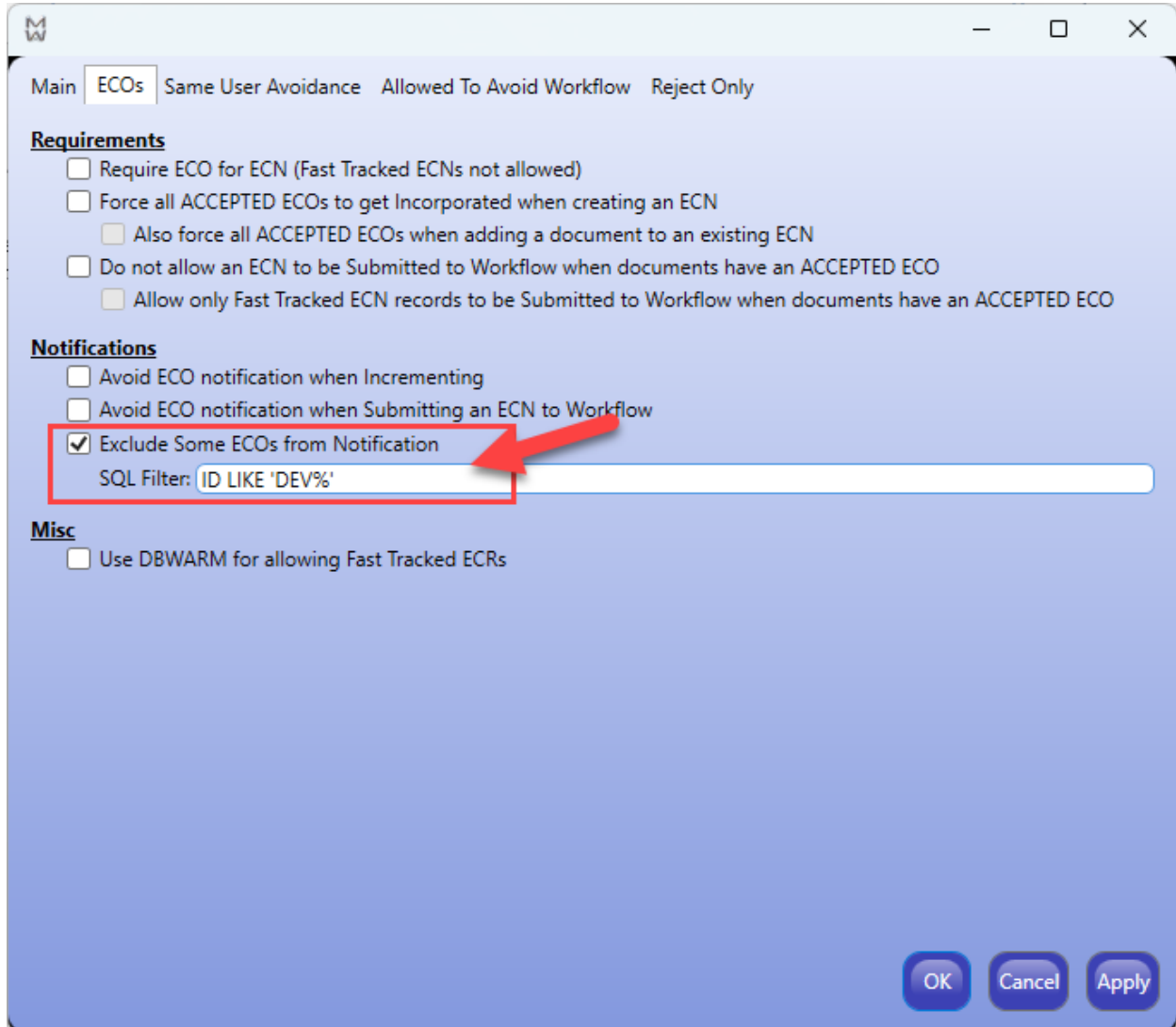
A new option to “Allow Standalone Users to Use the Latest Existing Attachments from Core MechWorks” has been added as a sub-option to the “Always Create from File” attachment option:



If disabled (default), Standalone users cannot generate attachments. If enabled, Standalone users will generate attachments by copying the latest existing attachment. (Integrated users will continue to generate attachments by opening the document and saving as the attachment type.)

## Excluding ECOs from Notification

A new ECO option to “Exclude Some ECOs from Notification” has been created:



The screenshot shows a configuration window with the following sections:

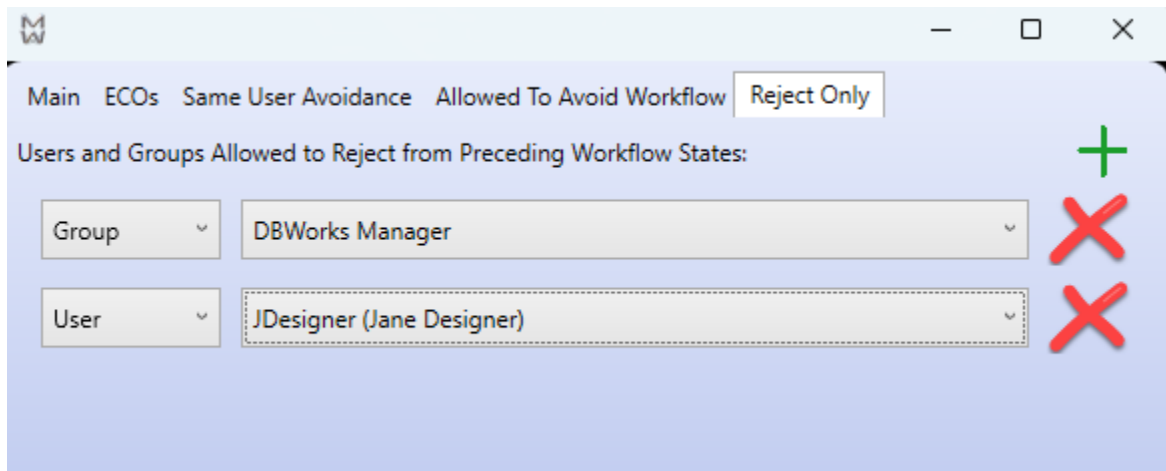
- Main:** ECOs (selected), Same User Avoidance, Allowed To Avoid Workflow, Reject Only
- Requirements:**
  - Require ECO for ECN (Fast Tracked ECNs not allowed)
  - Force all ACCEPTED ECOs to get Incorporated when creating an ECN
    - Also force all ACCEPTED ECOs when adding a document to an existing ECN
  - Do not allow an ECN to be Submitted to Workflow when documents have an ACCEPTED ECO
    - Allow only Fast Tracked ECN records to be Submitted to Workflow when documents have an ACCEPTED ECO
- Notifications:**
  - Avoid ECO notification when Incrementing
  - Avoid ECO notification when Submitting an ECN to Workflow
  - Exclude Some ECOs from Notification
    - SQL Filter: ID LIKE 'DEV%'
- Misc:**
  - Use DBWARM for allowing Fast Tracked ECRs

Buttons at the bottom: OK, Cancel, Apply

This option allows administrators to exclude specific ECOs from both notification dialogs. This includes the dialog that is displayed when incrementing the revision of a document, as well as the dialog that displays when creating a new ECN.

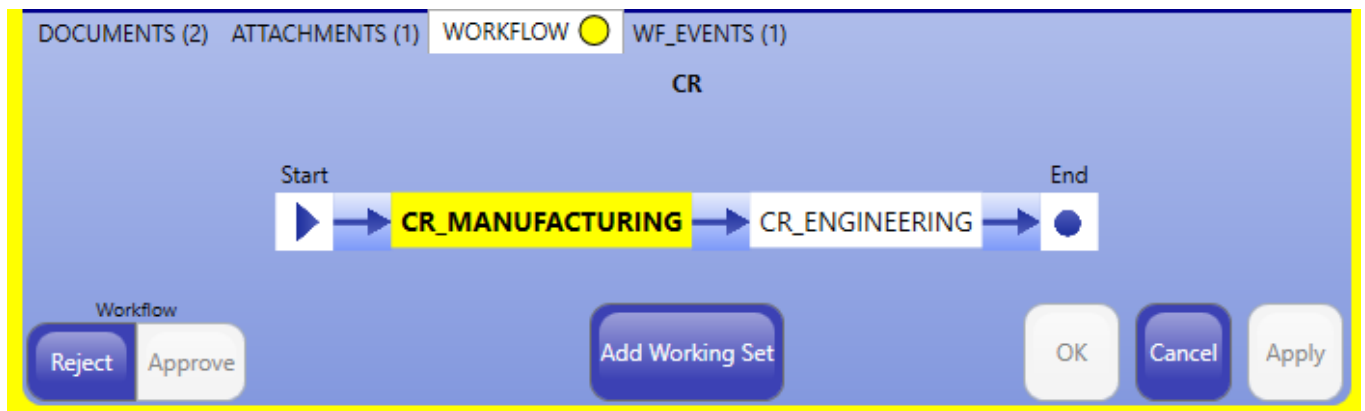
## Reject Only Roles

A new tab has been added to the global options to allow administrators to define specific users and groups as “reject only” users:



Users designated “reject only” are allowed to reject from workflow states previous to a workflow state the user is assigned to.

For example, in the following image, the user is assigned to the “CR\_ENGINEERING” state, but not the “CR\_MANUFACTURING” state. Because this user is designated a “reject only” user, they are allowed to reject from “CR\_MANUFACTURING”:



# EC Search Tool

## Search By Missing Group Review Signatures

If an environment uses any "Group Review" states, a new tab is available in the Advanced Search page:

The screenshot shows a web browser window titled "EC Search". The interface has a top navigation bar with tabs: "Common", "Advanced" (selected), and "Order By". Below this is a secondary navigation bar with tabs: "EC Fields", "DOCUMENT Fields", "Attachment Fields", "WORKFLOW\_EVENT\_LOG Fields", "RLMD Fields", and "Group Review States" (selected). The main content area is titled "Find EC records in the following states and missing the checked signatures:". It lists two categories: "CN\_ENGINEERINGLEAD" and "GROUP\_REVIEW". Under "CN\_ENGINEERINGLEAD", there are two checkboxes: "Quality Control" (unchecked) and "Engineering Management" (unchecked). Under "GROUP\_REVIEW", there are four checkboxes: "Quality Control" (checked), "Engineering Management" (unchecked), "Manufacturing" (unchecked), and "Checker" (unchecked). Below the checkboxes is an "SQL:" label followed by a text input field. At the bottom of the interface are four buttons: "Save", "Load", a yellow star icon, and "Search". A link "<< Main Search" is located at the bottom left.

In the above example, searching will return any EC records currently in the GROUP\_REVIEW state, but missing the Quality Control signature.

### Search in RLMDs

If an environment uses Red-Lined Master Documents, the Advanced Page of the EC Search tool now allows for easily searching against these RLMDs:



For example, in the above image, the EC Search tool will search for any EC records which have Red-Line Master Documents currently “In Progress”.



## Search Using Variables

The EC Search tool now allows searching using the same variables used in Action emails. For example:



The screenshot shows the EC Search tool interface. At the top, there are tabs for 'Common', 'Advanced', and 'Order By'. Below these are several field categories: 'EC Fields', 'DOCUMENT Fields', 'Attachment Fields', 'WORKFLOW\_EVENT\_LOG Fields', 'RLMD Fields', and 'Group Review States'. A blue 'Add Field' button is positioned above the search criteria. The search criteria is configured as follows: the field 'ACCEPTED\_BY' is selected from a dropdown, followed by the operator 'is exactly' from another dropdown, and the value '<%USER.CURRENT.INITIALS%>' from a text input field. A red 'X' icon is visible to the right of the value field. Below the search criteria is an 'SQL:' label followed by a large white text input field. At the bottom of the interface, there are buttons for 'Save', 'Load', a yellow star icon, and 'Search'. A '<< Main Search' link is located at the bottom left.

The above search will return any EC records where the ACCEPTED\_BY value is equal to the current user's initials. Using variables in this way can be especially helpful when creating saved searches or favorite searches meant to be used by multiple users. Administrators cannot hard-code these user values into the search, as the value will be different per user. Instead, these variables can now be used instead.

### Idle Time in Search Results

The search results can now include information about how long items in workflow have been idle (the time passed since the last workflow action):

The screenshot shows a software window titled "Search Results: Advanced Search". The window has a toolbar with icons for "Edit", "View", "Working Set", "Export", and "Export". Below the toolbar is a search bar and a table of search results. The table has columns: EC\_TYPE, EC\_STATE, ID, IDLE\_TIME (DD:HH:MM), WF\_PROCESS, and WF\_STATE\_NAME. A red box highlights the "IDLE\_TIME" column, and a red arrow points to it from above. The table contains several rows of data, including ECR and IR items with their respective states and IDs.

EC_TYPE	EC_STATE	ID	IDLE_TIME (DD:HH:MM)	WF_PROCESS	WF_STATE_NAME
ECR	WORKFLOW_REVIEW...	ECR-000008	15:01:21	CO	CR_ENGINEERING
IR	COMPLETED	IR-000004			
ECR	WORKFLOW_SUBMIT...	ECR-000009	12:10:18	CR	CR_MANUFACTURING...
ECR	WORKFLOW_SUBMIT...	ECR-000010	12:10:07	CR	CR_MANUFACTURING...
ECR	WORKFLOW_SUBMIT...	ECR-000011	12:10:02	CR	CR_MANUFACTURING...
ECR	NEW	ECR-000012			
ECR	WORKFLOW_SUBMIT...	ECR-000013	12:50:31	CR	CR_MANUFACTURING...
ECR	NEW	ECR-000014			
ECR	WORKFLOW_SUBMIT...	ECR-000015	12:50:26	CR	CR_MANUFACTURING...

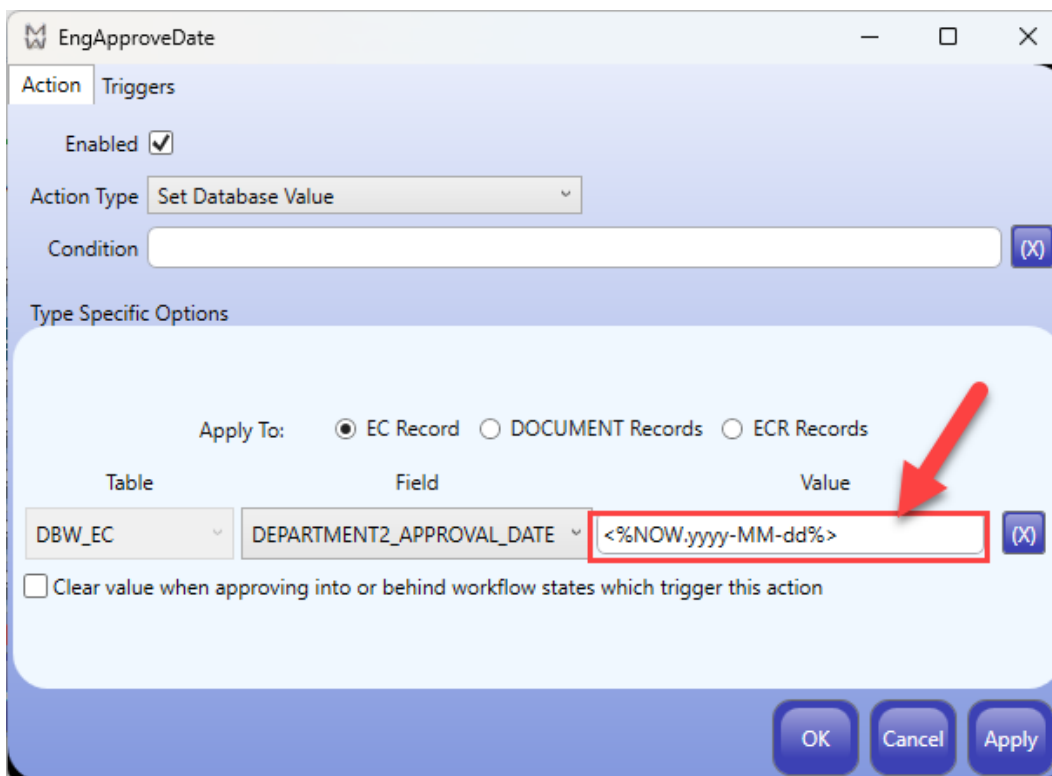
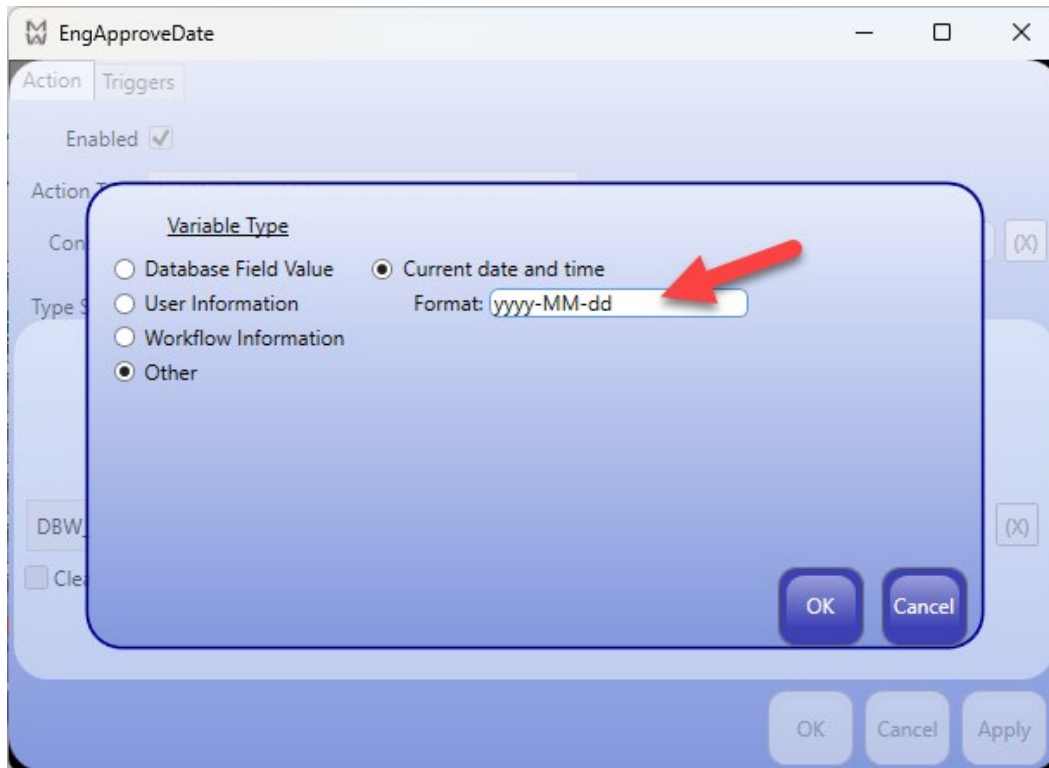
NOTE: In order to see this field, you will need to add it to the following line to the "EC\_SEARCH\_FIELDS.PAR" file (located in the DBWORKS\_SERVER\PAR\MW ENGINEERING CHANGE folder):

```
14 ID
15 DESCRIPTION
16 SPECIAL.PRIMARY_DOCUMENT
17 WF_PROCESS
18 WF_STATE_NAME
19 SPECIAL.IDLE_TIME
20 INCORPORATING_ECN
21 CREATED BY
```

## Other

### *Date Time Format in Actions*

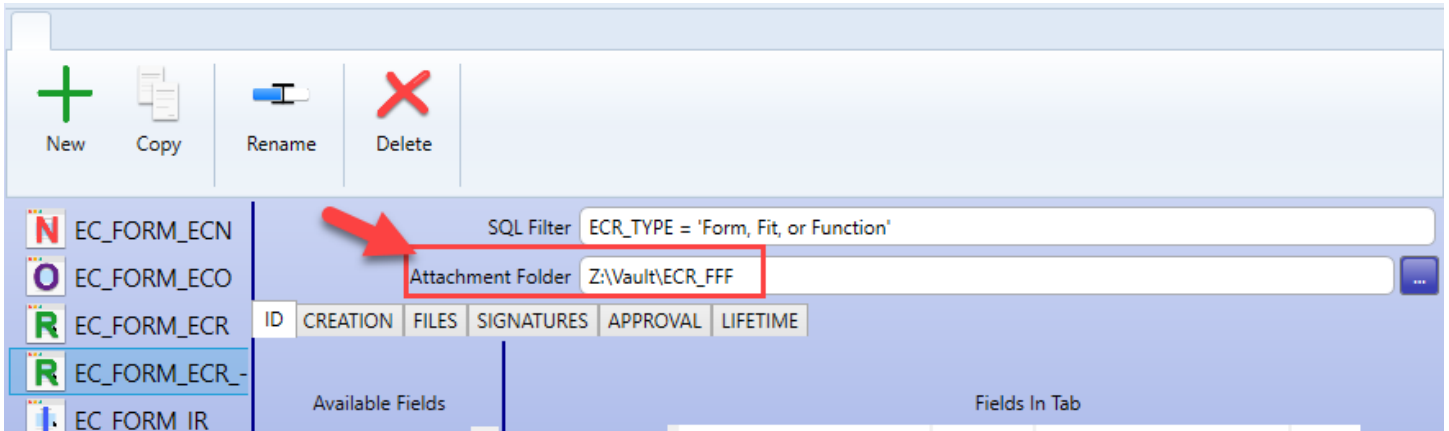
When configuring an Action to add a datetime stamp to a field, administrators can now format the datetime value. For example:



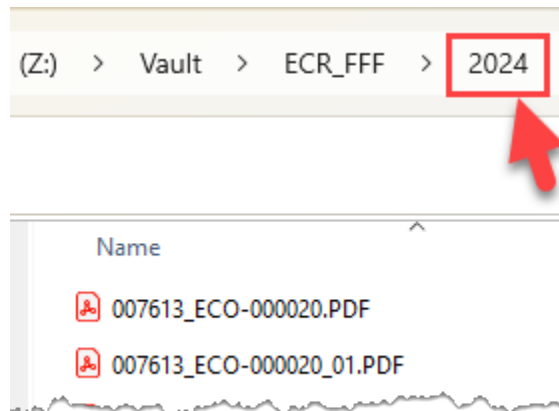
The date will now be entered into the DEPARTMENT1\_APPROVAL\_DATE field in yyyy-MM-dd format.

## Attachment Folder Per Data Card

Each data card now allows defining a specific folder for attachments:



Attachments will still be sorted into sub-folders by year:



NOTE: Any data cards without a defined attachment folder will continue to use the folder defined by the format type's options.


### ***RLMD Incorporation Prompt Improvements***

In the prompt to incorporate Red-Lined Master Documents, file last modified data has been added. Additionally, any RLDM that has a more recent modified date than the main document will be highlighted in yellow to bring the RLMD to the attention of the user:

**Red Lined Master Documents**

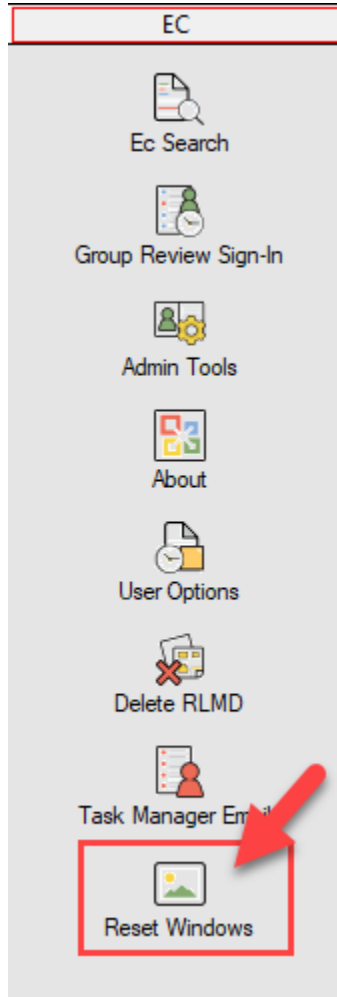
Which of the following RLMD documents have been incorporated?

Incorporate	DOCUMENT	RLMD	Comments	RLM Last Modified	DOCUMENT Last Modified
<input checked="" type="checkbox"/>	007613	007613.B.4.RLMD.PDF	Fix dimension	8/16/2024 1:43:36 PM	8/16/2024 1:40:59 PM



## Reset Windows Tool

A new tool has been added to reset the various windows:



By default, the MWEngineeringChange tool remembers the location and size of a window when it is closed. The next time the user opens the window, it opens in the same place at the same size. Most of the time, this improves user experience, but occasionally, this behavior is not desired. For example, if the user switches to a much smaller screen, this behavior can cause the window to try to open in a location off screen. If this happens, the user can use the “Reset Windows” tool to reset the size and location of all the windows to their default settings.

## Bug Fixes

- The email CC option (in the Action Administrative Tool) was displaying the email To option instead.
- The <%REQUIRE\_PROJECT\_MANAGER%> variable Condition was not working
- The EC Search tool would not work if there was a dash in the user's name
- If the DBW\_EC.DESCRPTION field was larger than the DOCUMENT.DESCRPTION field, this was causing issues creating EC records
- Filters allowing only some docs to increment to major revisions was not working
- The prompt letting users know about ACCEPTED ECOs on increment was not being displayed
- When branching into a new process, the Assign Active Reviewer functionality was not working
- If an EC record had a NULL DESCRIPTION, the View EC History dialog would freeze when loading
- When the option is set to protect the writability of the "main" EC file, only .xlsm files were working correctly. Other file types were never writable.
- After modifying an action, reloading the action caused the old properties to get loaded into the dialog
- If all documents were deleted from the database, an EC would not fully open