TEAMCENTER

Change Management on Active Workspace — Usage

Teamcenter 2412

SIEMENS

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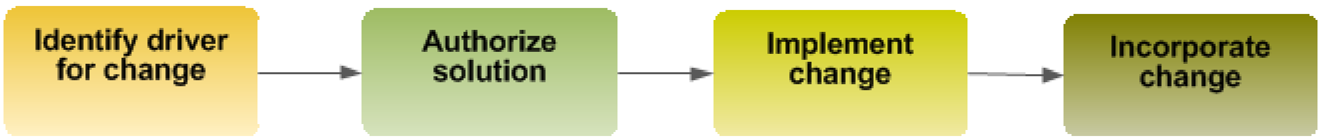
1. Overview of change management in Active Workspace

Managing Changes in Active Workspace

Change Management enables your organization to ensure the quality of every change made to a product. This is done through mechanisms for problem identification, change authorization, coordination and planning, cost and benefit analysis, and record keeping.

By automating your change process, you can minimize change-related rework and coordinate tasks to be performed by individuals across your organization. You can evaluate the impact of changes, track the status and completion of tasks, and maintain a comprehensive history of product changes throughout the lifecycle. Change Management is also tightly integrated with Schedule Manager and Workflow so you can schedule implementation activities and guide a change through its phases.



You can manage the work required to:

- Implement a change.
- Assess its impact on any managed business items, such as parts or documents.
- Notify participants about proposed and authorized changes.
- Track progress and completion of work.
- Compare before-and-after product configurations.

Where do I go from here?

Change Administrator/Change Specialist	Change administrators and specialists facilitate and manage movement of a change through the appropriate processes.
Configure specific Change features.	Configure Change Management
Learn about managing the change process.	• Create workflows with Workflow Designer. • Create work breakdown structures with Schedule Manager to plan and schedule changes.

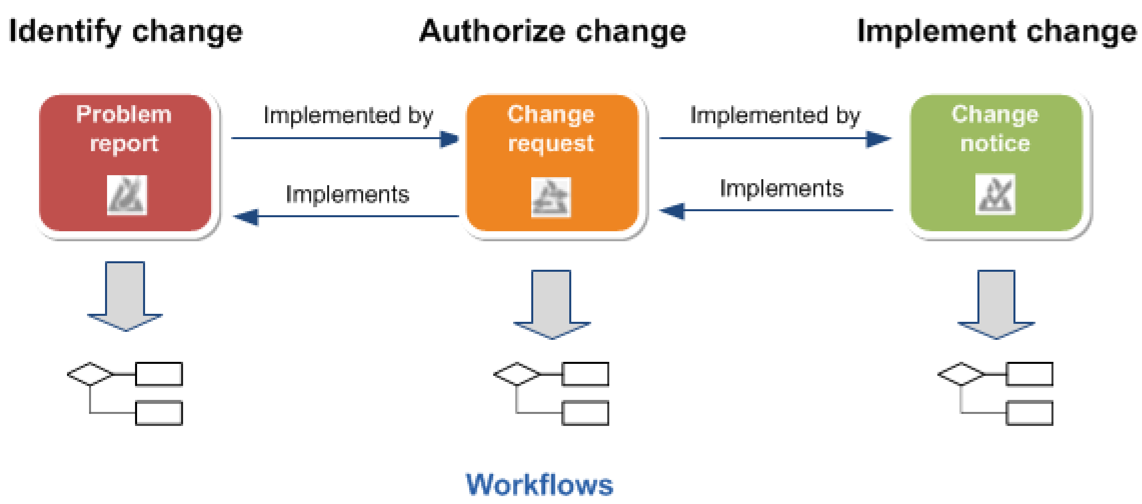
	• Assign or replace participants.
Change Analyst/Change Contributor	A change analyst elaborates the details of a change by providing a technical recommendation, performing an impact analysis, and planning the implementation. A change contributor can create solutions for the change notice just like an analyst and functions as a secondary analyst.
Show me the basics of using Active Workspace.	Refer to: Active Workspace Fundamentals
Learn more about team member participation in Change Management on Active Workspace — Usage.	See the section on: Who are the participants in a change?
Identify a problem and create a change.	See: • Create a change and send it for resolution • View your changes • Create a change in the context of an object and attach it to the change • Edit a change • Derive a change from another change
Other features	
Show me other important features that work with Change Management on Active Workspace — Usage.	See: • Workflows and Tasks • Schedule Manager • Structure Management on Active Workspace — Usage • Design and BOM Alignment — Usage

2. Exploring Change Management on Active Workspace — Usage

What is a change?

Using Teamcenter, you can manage changes to support the continued evolution of released product data. Typically, the change process includes identifying the goal (problems or enhancements), assigning them to users who analyze and identify the impacts, develop solutions to address the goal, and the approval steps to authorize and validate the change.

Three main types of changes shown in the figure implement the key elements of Change Management:



These objects are Item types in the business model, and are therefore revisionable in Teamcenter. Each object type encapsulates the data for a phase in the change process. For example, a problem report contains the data that defines the problem, the change request contains the analysis of the impact of the problem, and the change notice contains the data for the implementation of the solution.

The **Implemented By** and **Implements** relationships associate the change objects with each other. Each object type can be optionally associated with a workflow that defines the sequence of tasks and moves each object through a set of states to bring the problem to a resolution.

Using Teamcenter, you can create a problem report to identify and formally track an issue with your product information. Others who are involved in the change process can review and confirm the problem and provide input into what business objects must be updated to resolve the issue. Members of a change review or change implementation board can review and approve or disapprove the changes.

What are the types of changes?

The following change objects are used to manage a change:

Change object	Description
Problem report	Initiates a change. A problem report (PR) captures information about a problem or an enhancement. It includes the information necessary to confirm and reproduce any problems observed or to document the specifics of a request for an enhancement. Additional attributes document the perceived severity of the problem and set the priority for addressing the issue relative to other PRs. The processing of a PR sometimes leads to the creation of an change request. Creating a PR is an optional step in the change process. Depending on the conventions at your site, you may first identify a problem or enhancement with a change request or change notice, not a PR. A PR may be implemented by one or more change requests.
Change request	Initiates a proposal that recommends a change and captures business decisions associated with the change. A change request (CR) proposes a solution to the problem, populates impacted items, and performs impact analysis, with cost estimates and benefits of making the change. The actual solution (for example, a new item revision) is implemented in the change notice. A CR is typically a response to a problem report unless the problem report stage is skipped. A single CR may logically group and address issues identified in multiple PRs. A CR may be implemented by one or more change notices.
Deviation request	A deviation request is a type of a change request. Seeks consent to deviate from a solution in production to resolve a set of problems to initiate improvements. Typically, there are two types of deviation requests: • Request for deviation Seeks consent to deviate from a part solution.

Change object	Description
	• Request for waiver Seeks consent to accept a non-conforming part.
Change notice	Implements a change. It provides authorization to generate solution items and a detailed work plan to resolve one or more change requests or a portion of a single change request. A change notice (CN) identifies all items and documents affected by a change and authorizes the actions that address a change.
Simple change	Identifies a problem and implements a change. A simple change (SC) is designed for minor changes and a reduced number of change participants. A simple change cannot be derived from another change type.

What are the states of a change?

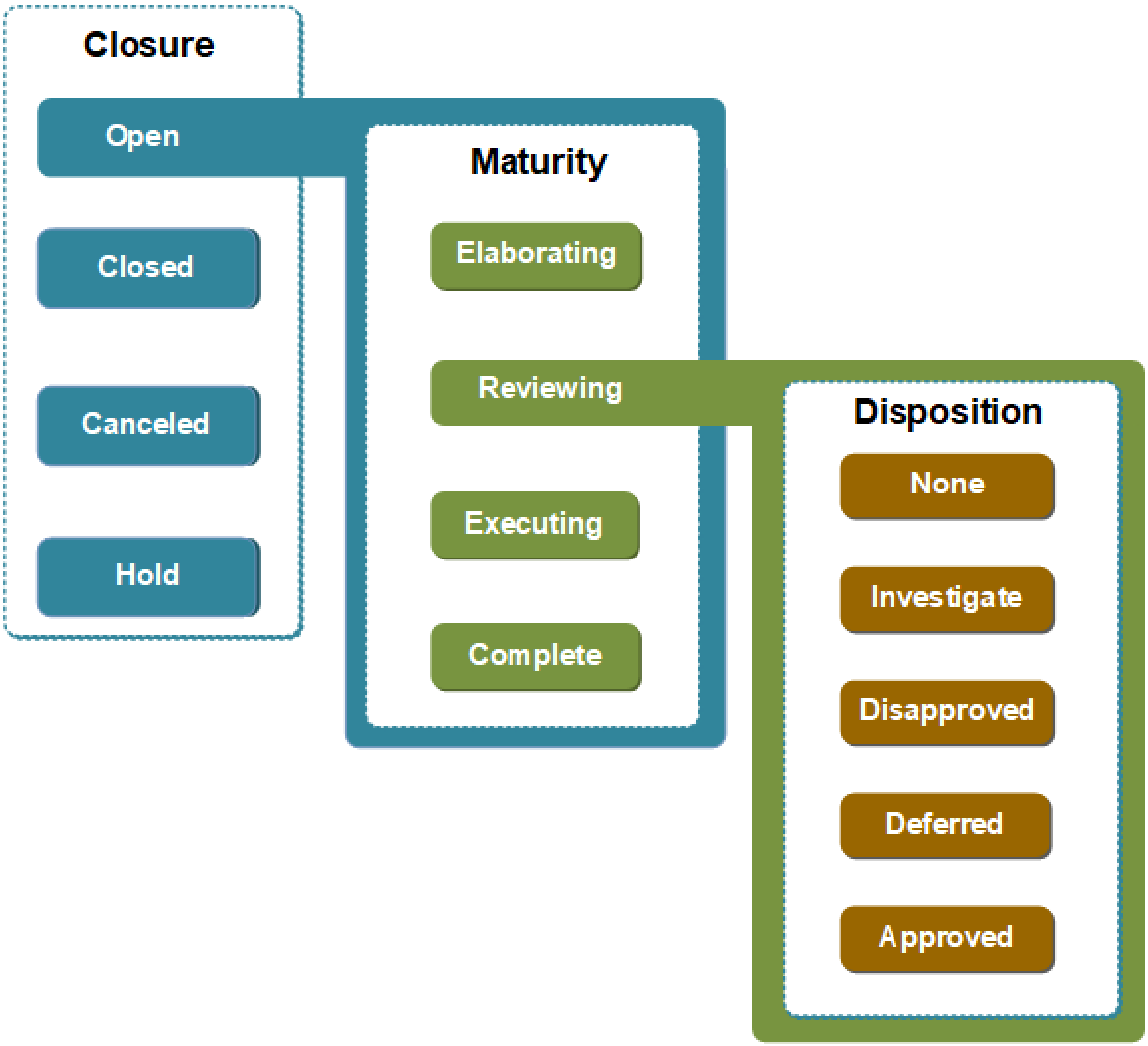
A change has three key change states that capture where in the change process it is and what decisions about the change have been made.

- Its status or *Closure* (for example, Open or Canceled).
- The degree of completion of the overall change process, its *Maturity*.
- The technical, business, or implementation decision by a person or review board about a change object's approval, its *Disposition*.

The change states interconnect and are dependent on the other change states. For example, Maturity is a substate of the *Closure* state and *Disposition* is a substate of *Maturity*. The states of a change are set during the workflow process. To move a change to the next phase of the change process, for example, to move a problem report to a change request so a solution can be determined, the states of a change must be appropriate.

You can view the states of a change in the **Overview** tab.

The following graphic illustrates the change states. For detailed information on change states, see *Change Management —Deployment and Rich Client Usage* in the Teamcenter help.



What are the contents of a change?

The **Affected Items** tab displays and organizes the contents of the change.

The change types, the relationships they define, and the permissions and change states required to add an object to a change are as follows:

Contents of a Change	Information adding the objects
Problem Items	
Contains item revisions with the problems that the change is to address. This could be the parent assembly.	To create a relationship between an item revision and a change object (problem report, change request, change notice), add the item revision to the change object's **Problem Items** table.

Contents of a Change	Information adding the objects
	You must be an assigned participant and the change object settings must be as follows. **Assigned participant** / **Closure property settings** All participants / **Open**
Impacted Items	
Contains item revisions that are being changed as a result of the change process.	Creates a relationship between an item revision that a change request or change notice affects and the change request or change notice. To add the item revision to the change request or change notice's **Impacted Items** table, you must be an assigned participant and the change request or change notice property settings must be as follows. **Assigned participant** / **Closure property settings** Must have an Author license level and be the Requestor, Analyst, or Change Contributor / **Open**
Solution Items	
Contains item revisions that are generated as a result of the change (for example, the new piece parts and the new revision of the parent assembly to contain them).	To create a relationship between an item revision and the change notice that implements the change, add the item revision to the change notice's **Solution Items** table. You must be an assigned participant and the change notice property settings must be as follows. **Assigned participant** / **Closure property settings** Must have an Author license level and be the Analyst or / **Open**

<table>
<tr><th>Contents of a Change</th><th>Information adding the objects</th></tr>
<tr><td></td><td><table><tr><th>Assigned participant</th><th>Closure property settings</th></tr><tr><td>Change Contributor</td><td>Note:
The Maturity must not be equal to Reviewing.</td></tr></table></td></tr>
<tr><th colspan="2">Reference Items</th></tr>
<tr><td>Contains any object that references related information (such as analysis documents and system logs).</td><td>To associate related information (such as analysis documents and system logs) with a change, add any object to the Reference Items table.
You must be an assigned participant.</td></tr>
</table>

The **Reference Items** tab displays and organizes the following contents.

<table>
<tr><th colspan="2">Plan Items</th></tr>
<tr><td>Contains schedules that define tasks in a work breakdown structure.</td><td>To associate related work breakdowns (schedules) with a change request or change notice, add any schedules to the Plan Items table.
You must be an assigned participant and the property settings for the change request or change notice must be as follows.<table><tr><th>Assigned participant</th><th>Closure property settings</th></tr><tr><td>Must have an Author license level</td><td>Open</td></tr></table></td></tr>
<tr><th colspan="2">Implements</th></tr>
<tr><td>Contains change object revisions that reference this change object. A change request implements problem reports. A change notice implements change requests.</td><td>Note:
A problem report does not have an Implements table because it only identifies problems.
Usually, the Implements table is automatically populated as part of the change process, but you can add items to it if you are an assigned participant and the property settings are set as follows.<table><tr><th>Assigned participant</th><th>Closure property settings</th></tr><tr><td>Must have an Author license level</td><td>Open</td></tr></table></td></tr>
</table>

Implemented By

Contains change object revisions that are referenced by this change object. For example, a problem report is *implemented by* a change request and a change request is *implemented by* a change notice.

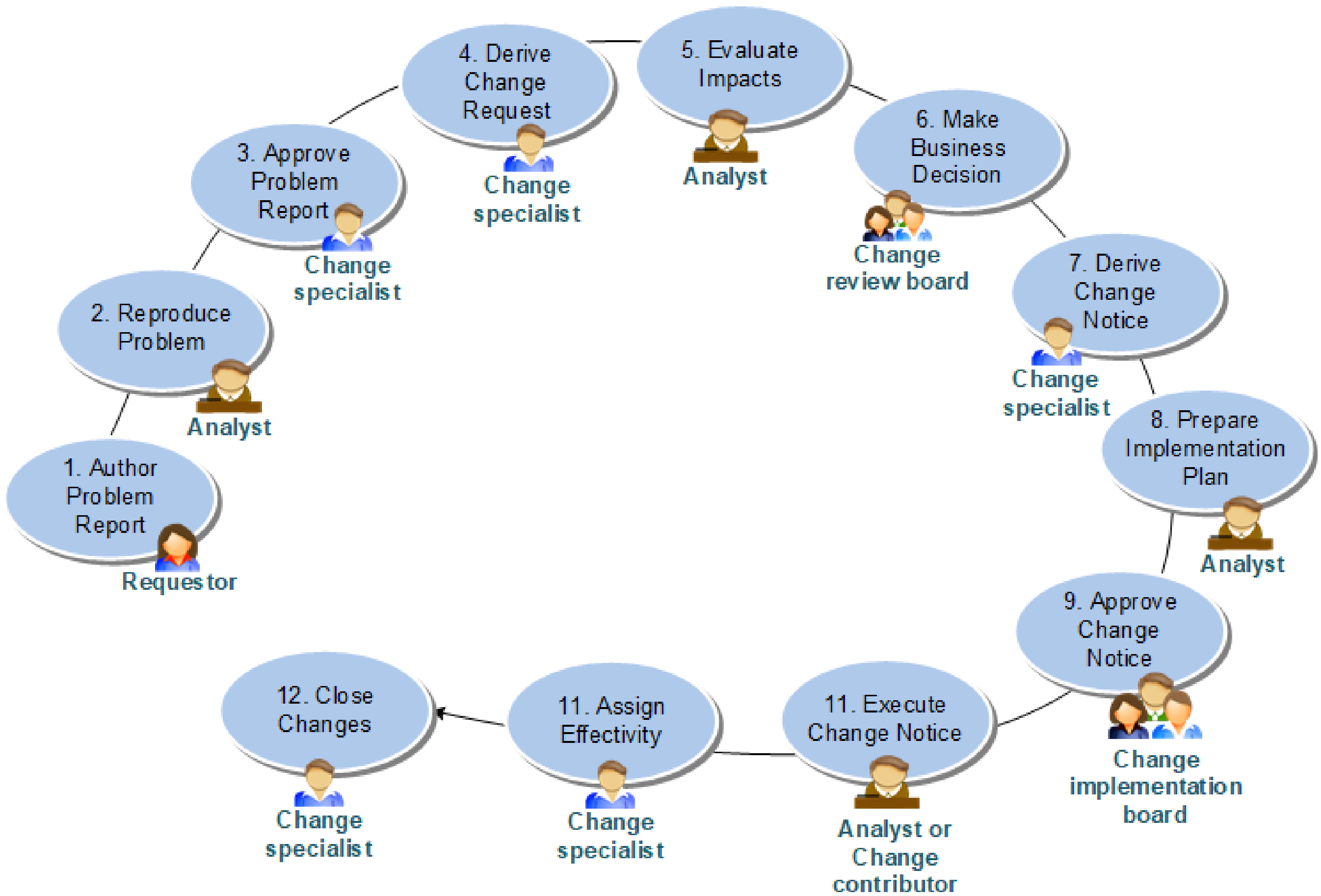
Note:

The **Implemented By** table is automatically populated as part of the change process by objects in the **Implements** table.

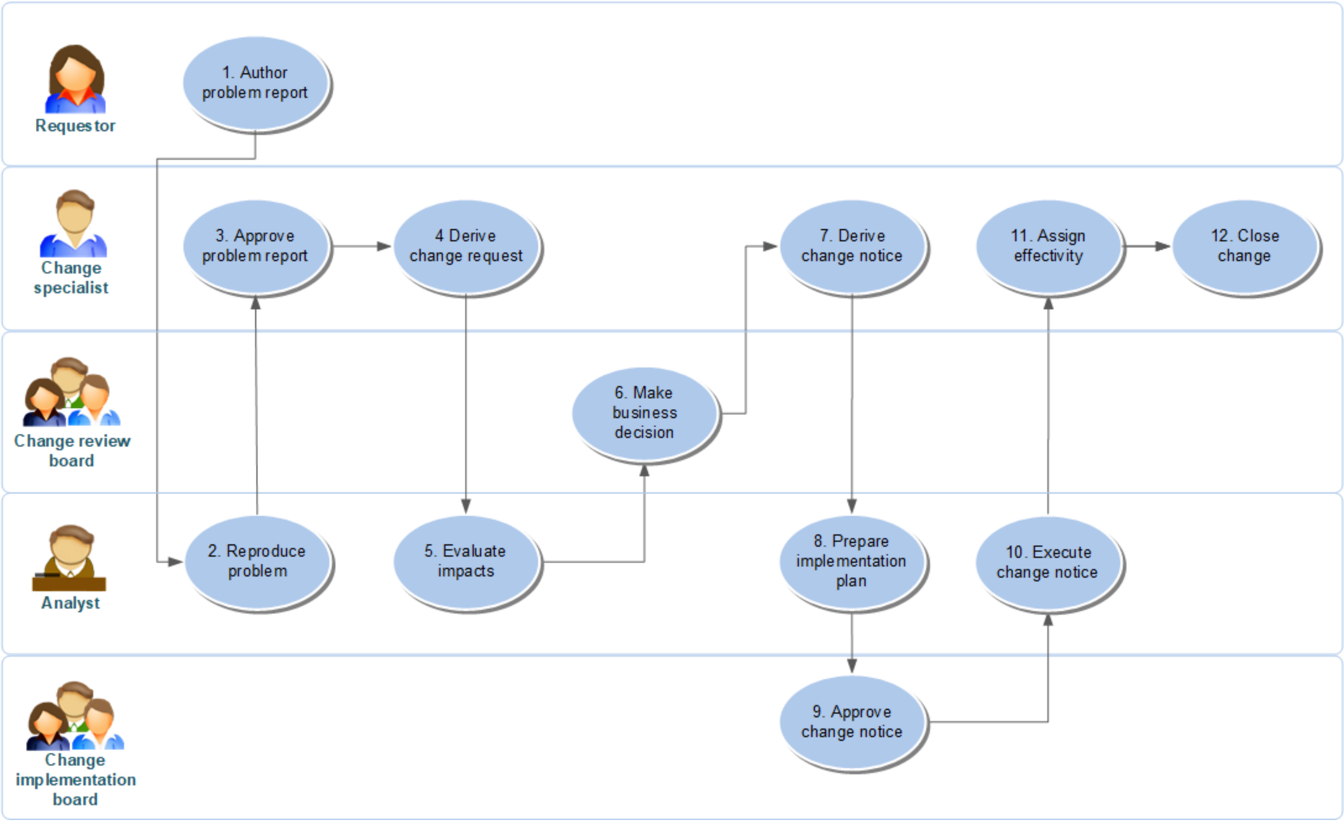
Defining your change management process

You can manage your changes in the way that works best for your company's processes. You should define a change process that is flexible enough to impose the appropriate level of rigor and control based on the level of risk, cost, and the business items impacted by the change. You can classify a change as fast or standard track. In a fast track process, the change does not go through a formal review process, while a standard track follows a more rigorous process, and may include a schedule to manage the required tasks.

The following graphic shows a typical standard track process along with the associated roles.



The following graphic shows the tasks performed by each role in the Change Management process.



1. Author a problem report (PR).

   A requestor creates a PR to identify a problem or enhancement, provide a preliminary assessment, and show the steps necessary to reproduce the problem.

2. Reproduce problem.

   A change analyst performs the steps to reproduce the problem as detailed by the requestor.

3. Approve a PR.

   A change specialist assigns a priority to the PR and assigns it to an analyst for technical review. The specialist or analyst recommends a disposition, such as **Approved**.

4. Derive a change request (CR).

   A change specialist creates a CR to address the PR.

   At this stage, the analyst develops a solution or several alternative solutions. The analyst does this by creating markups on documents, Word documents, presentations, and so on. No decision has been made at this stage about whether to proceed or what new items or item revisions may be required.

Sometimes the PR may propose a solution if the problem is simple to fix. However, the solution would still be formally documented in the CR. Typically, though, the requestor is unlikely to be in a position to know what the solution should be and may likely have no idea at all.

> Note:
>
> The CR can address more than one PR.

5. Evaluate the impacts.

   The analyst identifies the items impacted by the change, prepares supporting documentation, and prepares a high-level proposal for the actions required to implement the change.

6. Make a business decision.

   A change specialist submits the change request to a change review board who decides if the change will be made. The change review board can approve the change request, reject it, or require additional investigation. If this is a fast track change, the review board is the owner of the change and the process moves to the execute change step.

   At this stage, a decision is made about whether to revise or create new items, according to the form, fit and function and interoperability.

7. Derive a change notice (CN).

   The change specialist either derives a new CN to address the approved CR or associates the CR with an existing CN. The CN addresses the implementation details of the change. It may address multiple CRs. The requestor can delegate responsibility for elaborating the details of the implementation plan.

   > Note:
   >
   > A CN is always derived to implement a solution, even for a CN that went through a fast track process. However, the workflow for the fast track CN is very short, with a minimal number of steps. It is necessary to create an CN so the analyst can add solution items, which is not possible in the CR, whose purpose is only to define a proposed solution, and perform impact analysis.

8. Prepare an implementation plan.

   The analyst develops a detailed plan to address the set of approved CRs addressed by the CN.

   At this stage the agreed solution is implemented in the new/revised items.

9. Approve the CN.

For a standard track process, the change implementation board reviews and approves the plan to address the change. For a fast track process, the approval is informal and may just require the change specialist managing the change.

10. Execute the CN.

    The analyst implements and tracks the detailed plan for addressing the change. A change specialist tracks the implementation progress at a high level. The analyst and/or change contributors will generate solutions to implement the change.

11. Assign an effectivity.

    A change specialist can assign effectivities to the CN. The effectivities specify the timing of when the change takes effect.

12. Close changes.

    The change specialist closes the change after all the actions associated with each level of the implementation plan are complete.

About managing the change process through a workflow

Workflows guide a change through the different phases of a change process: authoring, review and approval, execution, and closure. These phases are modeled as states of the change.

For example, a workflow process moves the **Disposition** attribute of a change from **Investigate** to **Approve**. Change states cannot be manually updated. Using Change Management with Workflow Designer, therefore, tracks the evolution of changes through your organization according to a controlled, repeatable process. In addition, you can:

- Tie a workflow to a scheduled task so as tasks are worked on and updated in Teamcenter workflow, the information is sent to Schedule Manager where the corresponding information is updated. You can also configure a Teamcenter scheduled task so the associated workflow can be initiated when certain conditions are met.

- Set up a workflow to automatically assign review members from assigned participants by configuring the workflow for dynamic participants.

To do this, you need to use the following workflow action handlers:

- The **EPM-set-property** handler to set the change state properties when they change during the workflow.

- The **EPM-auto-assign** handler to assign a single, appropriate participant on the change object as the responsible party for the current task.

- The **EPM-adhoc-signoffs** handler to assign review tasks.

> Note:
>
> Use the **EPM-assign-responsible-party-dynamic-participant** and **EPM-assign-signoff-dynamic-participant** handlers to automate the assignment of participants.

These Change Management preferences determine which workflows start when a change revision is submitted:

Preference	Change Object
ChangeNoticeRevision_default_workflow_template	Change Notice Revision
ChangeRequestRevision_default_workflow_template	Change Request Revision
Cm0SimpleChangeRevision_default_workflow_template	Simple Change Revision
ProblemReportRevision_default_workflow_template	Problem Report Revision

> Note:
>
> A default workflow process template is used when **Submit** is selected on the **Create** panel. For a change revision submitted *after* creation, the default template is pre-selected for the matching change type, making it easier to submit to the default workflow on pre-existing change revisions.

Examples of the workflow process for changes

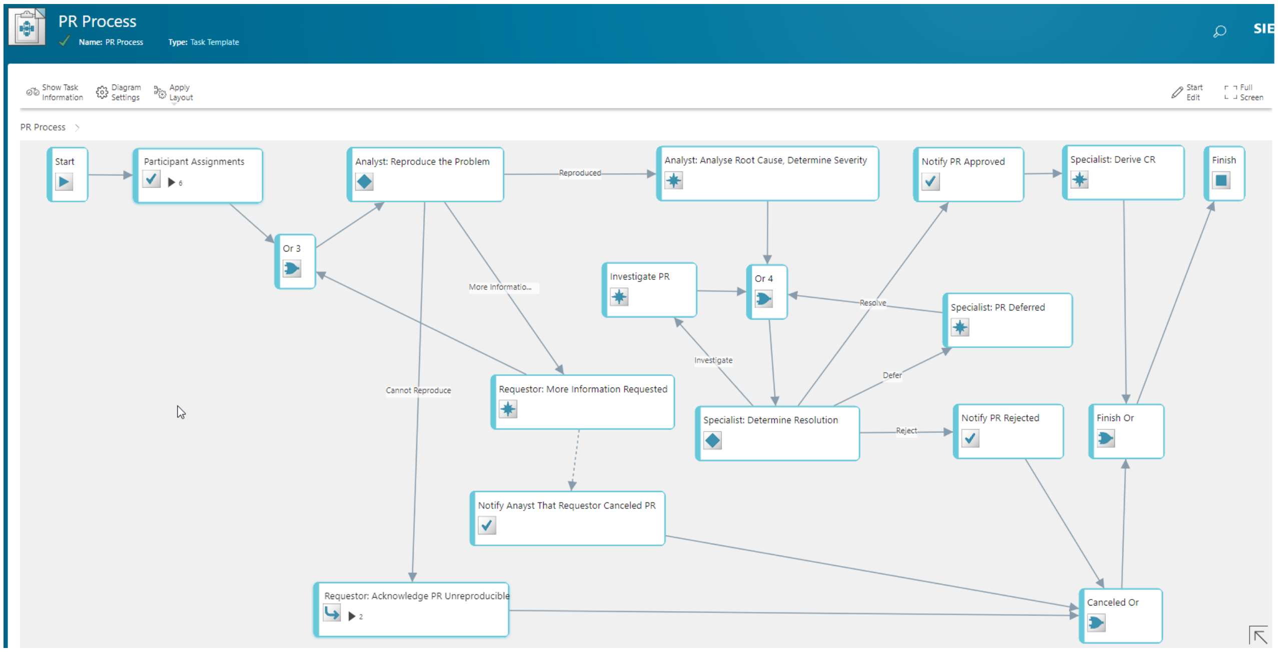
The following examples are default workflow process templates for changes. A default workflow process template is used when **Submit** is selected on the **Create** panel.

For a change revision submitted *after* creation, the default template is pre-selected for the matching change type, making it easier to submit to the default workflow on pre-existing change revisions.

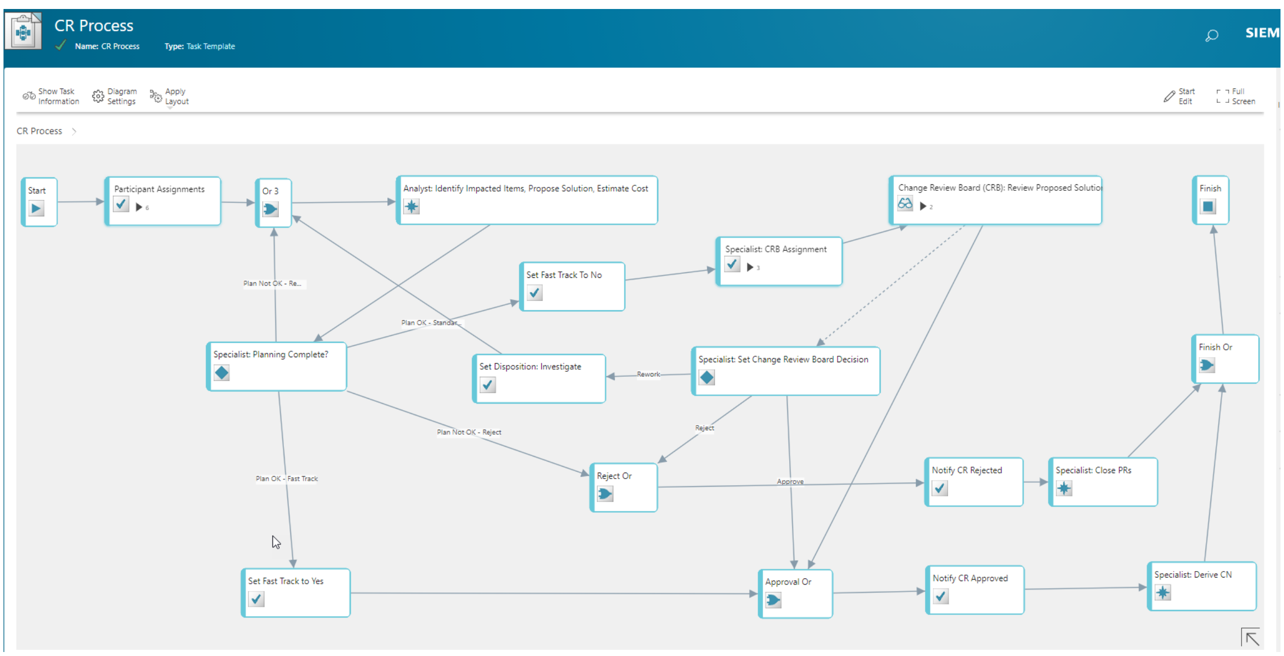
The following workflow examples for a problem report, change request, simple change, and change notice are the default workflow process templates in Workflow Designer. These examples illustrate the automated and interactive steps, along with the associated participant (if available). In Workflow Designer, you can select an individual task to view the specific participant instructions.

> Note:
>
> For more information on workflow templates refer to the Workflow Designer documentation.

Problem report default workflow process template

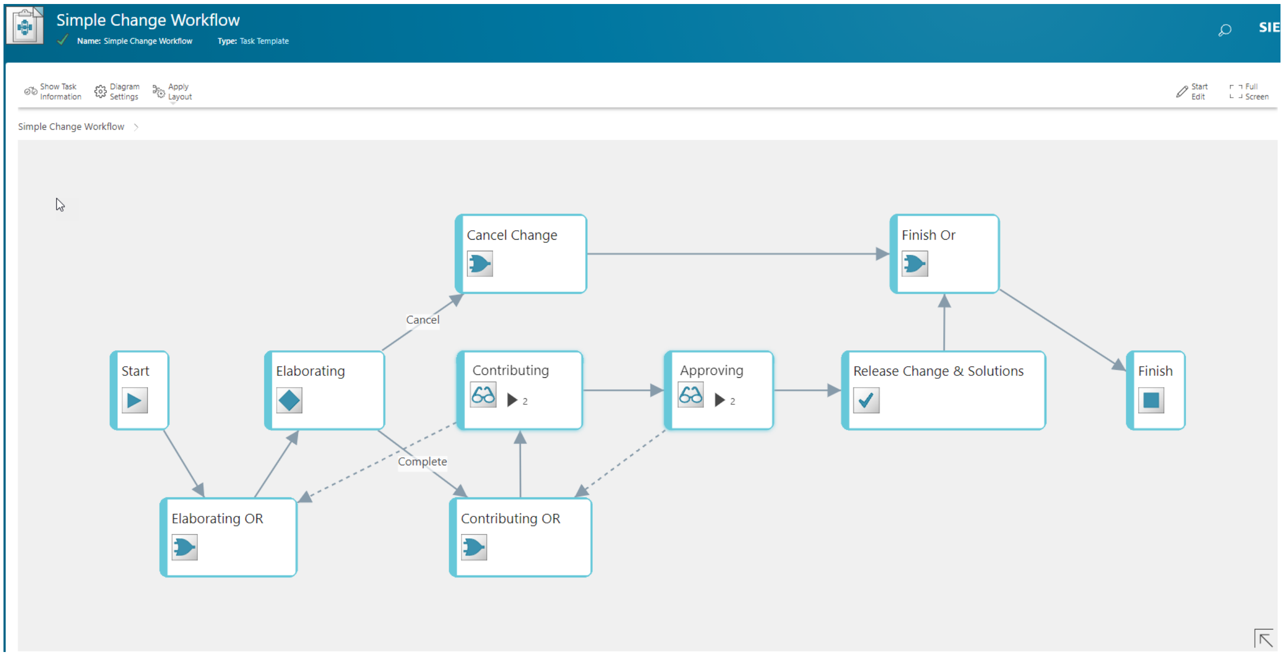


Change request default workflow process template

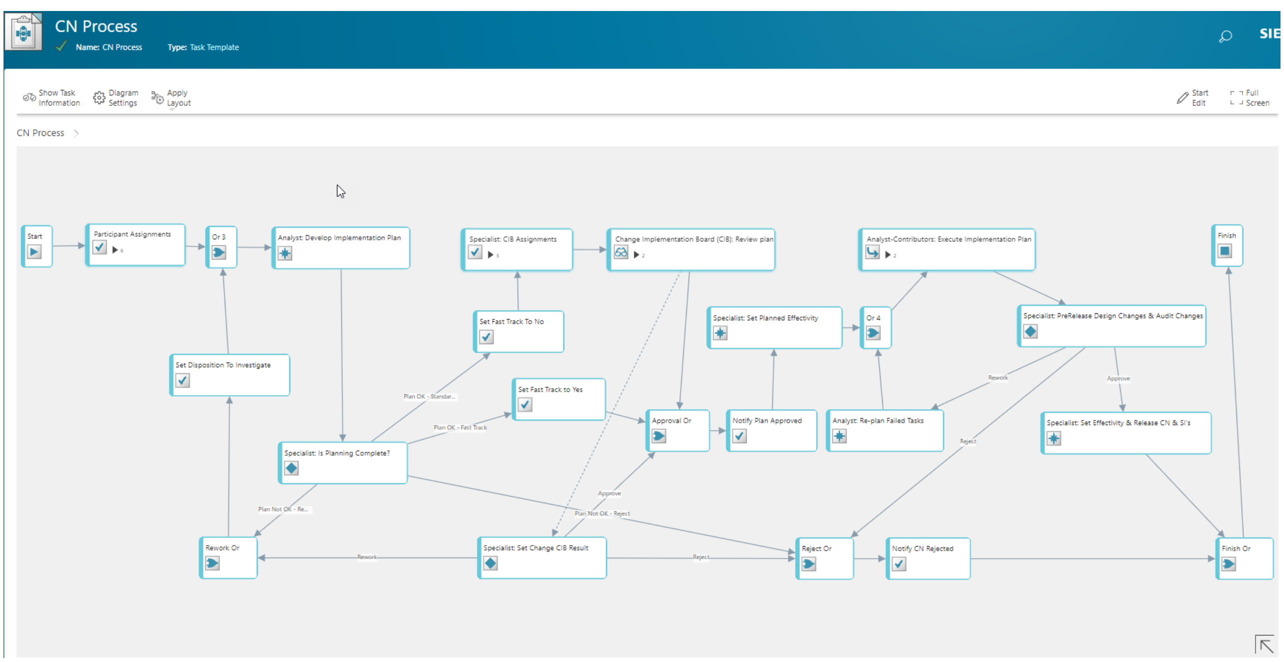


Simple change default workflow process template

> Note:
>
> Simple change automates the assignment of contributors and approvers. The requestor may assign change contributors and approvers, or a single participant may perform all of the tasks.



Change notice default workflow process template



Change participants

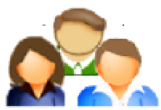
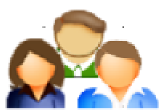
Who are the participants in a change?

When a change workflow begins, often participants need to be assigned, which generally includes the following roles. Other roles may be included based on the type of change and your company's change process. The participant type of *requestor* is assigned automatically to the user who created the change. You can change this, for example, if you created a change on behalf of someone else.

> Note:
>
> If you created a custom participant or a custom user profile, you must add the new attribute to the **Search Criteria** section for the **My Change Notices** query.

Some workflows automatically assign participants. For example, a workflow can automatically assign the analyst to implement the change. Users who are automatically assigned are referred to as *dynamic participants*.

Participant	Does the following
 **Requestor**	Creates a change object or is delegated a change object by another requestor. The requestor is responsible for elaborating the definition of a change and for providing as much detail as possible to define the problem or request at hand. A requestor may perform the elaboration, or a change specialist may delegate responsibility for elaborating a change to another user (an analyst or requestor).When you create a change object, you are its requestor. If responsibility is delegated to another user, that user becomes the current requestor and you are no longer the requestor.
 **Specialist**	Facilitates and manages movement of a change through the appropriate processes. The specialist is responsible for reviewing and approving the change object and determines if more planning is required. The specialist assigns the analyst and the change implementation board and audits all changes. The specialist may set the effectivity, as well.
 **Analyst**	Assesses the technical feasibility of a change or the technical feasibility of implementing the low-level details of a change. An analyst elaborates the details of a change by providing a technical recommendation, performing an impact analysis, and planning the implementation. The analyst may perform the implementation or delegate the work to others. During the implementation phase, the analyst monitors the change execution and is ultimately responsible for ensuring the implementation is performed correctly and according to the plan. This person is generally a senior technical person with knowledge of technical issues and a site's products and business goals.

Participant	Does the following
 **Change review board**	Reviews, approves, and authorizes engineering change requests and deviation requests. The review board makes a business decision about whether a change or deviation request should proceed. Review board members are generally senior individuals from various functional areas within a site or individuals who have expertise in some aspect of a change or deviation.
 **Change implementation board**	Reviews whether a change notice is to be executed or canceled. The change implementation board makes a business decision about how the change notice should proceed. The implementation board members are generally senior individuals from various functional areas within a site or individuals who have expertise in the context of a this change or deviation.

Use the **Participants** tab in **Changes** to view the participants in a particular change.

> Note:
>
> Assigning participants is not the same as selecting a signoff team in a workflow. It is a separate task for a change only. The change does not have to be in a workflow to assign participants.

Reassign participants

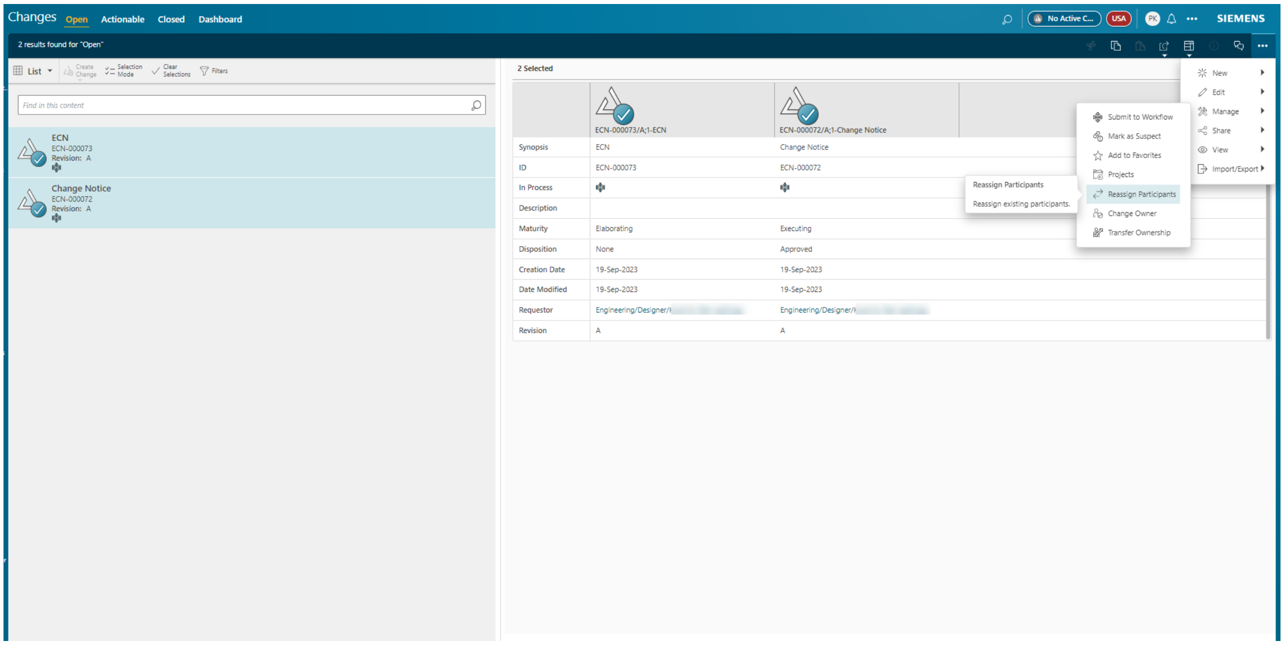
You can select multiple changes from the **Changes** tab or the search results and reassign a selected participant, such as a Change Specialist, from one user to a different user. The assignable participants depend on the types of changes you select and the common set of participants available for these changes. For example, if you select a mix of change notices and change requests, the **Participant** list only displays the participants common to the selected change requests and change notices.

You can modify the participants for a large number of changes assigned to a user that has left your organization, moved to a different department, or needs the workload balanced across other members of the team.

The participants you can reassign are dependent on your privileges and your participant type in the change process.

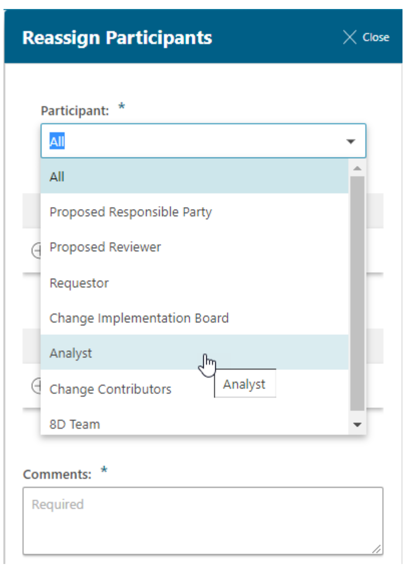
1. Use **Ctrl+click** or **Shift+click** to select two or more changes from the **Changes** tab or the search results.

2. Go to **More Commands** ••• > **Manage** > **Reassign Participants**.



The **Reassign Participants** panel appears on the right.

3. Select the participant type. If there is more than one common type, you can select **All** to change the participants for all.



4. In the **From** section, click **Add** ⊕.

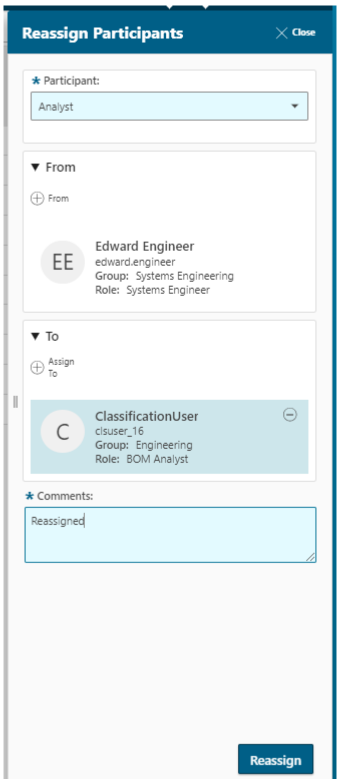
5. Select a participant to reassign. Or, type the name of the participant to whom you want to reassign the change in the top search box and press **Enter** or click **Search** ⌕ to see results. You can enter a partial name or wildcard characters.

Filters are defaulted to **Type**, **Group**, or **Role**. A search box narrows your search to a specific property.

You can increase the size of the panel by dragging the two bars on the left side of the panel to the left.

6. Once selected, click **Add**.

7. Repeat for the **To** section and select the new participant.



8. Comments are required for reassignment. Enter any comments, such as the reason for reassigning the participants, and then click **Reassign** to finish.

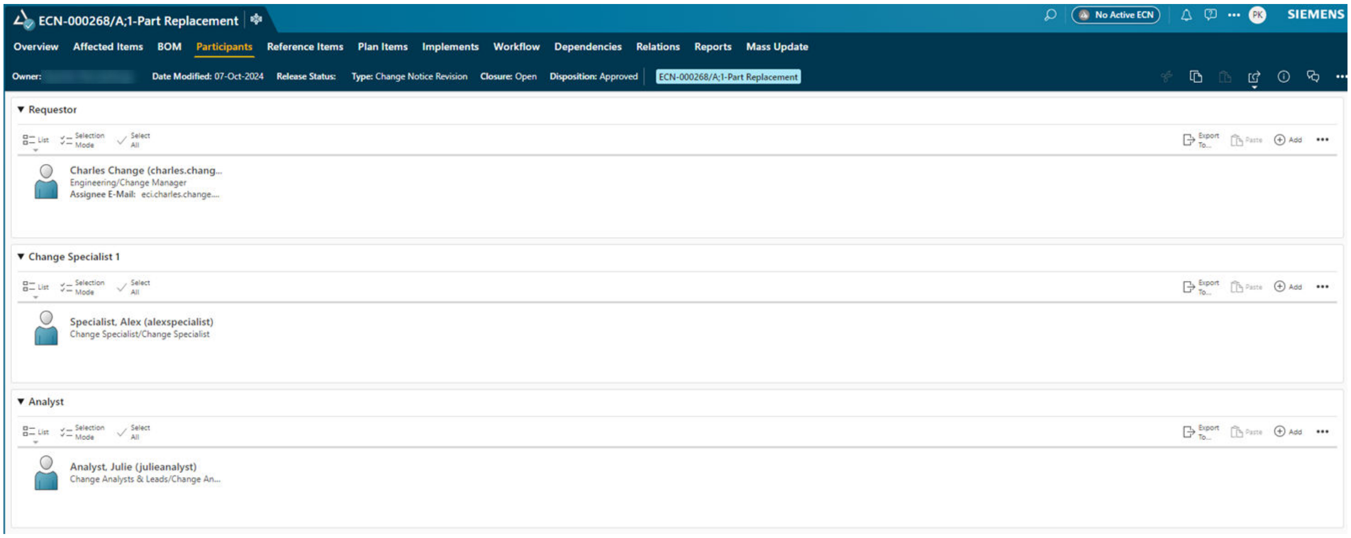
   A message appears at the bottom of the browser informing you how many of your selections were reassigned. For example, if you selected five changes and Alex was the change specialist on four of them, the message states that four of the five selected changes were reassigned. The change that Alex was not the specialist on had no actions taken on it.

Assign or replace participants

The **Participants** tab contains all assigned participants for a change object. You can change, assign, or replace various participants.

You can select more than one user when assigning a review board.

Select a change and click the **Participants** tab to view or manage assignments.



Add or replace participants in a change object

Use the **Participants** tab to add or replace participants in a change object.

Procedure

1. To add a participant, select **Add** ⊕.

2. Select one or more users to assign. Or, you can type the name of the participant to whom you want to assign the change in the top search box and press **Enter** or click **Search** to see results. Enter a partial name or wildcard characters.

   Filters are defaulted to **Type**, **Group**, or **Role**. A search box narrows your search to a specific property.

   You can increase the size of the panel by dragging the two bars on the left side of the panel to the left.

3. Once selected, click **Add**.

   The change object displays the assigned participants in the table.

Multiple change contributors

Change contributors can create solutions for the change notice just like the analyst. In effect, they function as secondary analysts. The **Cm0ChangeContributors** and **fnd0IsParticipant** operators handle this operation, verifying that the user is a participant of the change notice. The change analyst can add other users as change contributors, who can then add solutions to the change notice.

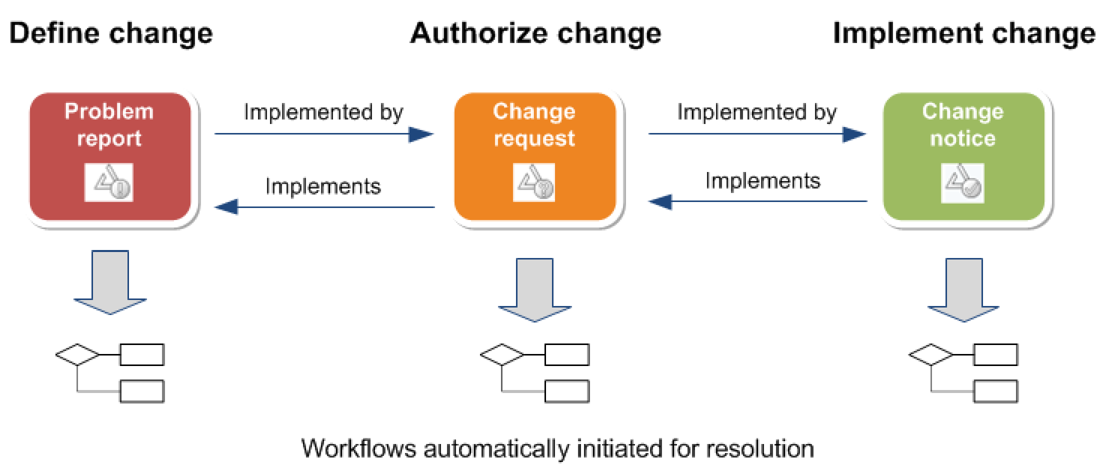
3. Creating a change

How to identify problems as changes

When you identify a potential problem that needs investigation, capture it as a change. Four change object types are available by default to represent the different stages of a change. Your company can also create its own types of changes. When you create a change, you are the *requestor*.

Create the change	To
Problem report	Identify a problem and initiate a change process.
Change request	Initiate a proposal to recommend a change and capture business decisions associated with the change.
Change notice	Implement a change.
Deviation request	Seek consent to deviate from a solution in production so you can resolve a set of problems and initiate improvements.

The following graphic shows how the three main change object types work together to solve a change.



You create a change in **Changes** or create it in the context of a reference object. The types of changes you can create depend on your permissions and the current state of the change. **Changes** can be configured to show you only the types of changes that you have permission to create.

Once you capture a problem as a change, you can:

- Automatically submit the change to a workflow process that routes it through your company's business process to resolve the change. Siemens Digital Industries Software provides a default workflow for each change object type. The default workflow automatically assigns you as the requestor of the change. Your organization can create its own workflow process. Check with your administrator for the default workflow set up for each type of change object in your organization.

- Save your change for later editing and resolution.

- Derive a change from another change to move it along in the process. For example, you can derive a change request to plan the solution from the problem report that identified the problem. The earlier figure shows how derived objects are related using the *Implements* and *Implemented by* relationships. An administrator sets up how the changes are derived and by whom.

> Tip:
>
> If you only want to create a problem report, use **Report a Problem**.

Create a change and send it for resolution

Create a change and send it for resolution

A change identifies the issues and components that require resolution. Submitting the change to the appropriate workflow for its specific change type provides the mechanism to resolve the change.

1. You can create a change using any of these methods.

    - Create a change from an object in a folder or in a list.

      Select an object in a list or folder, go to **More Commands** ••• > **New** > **Create Change**.

      This includes items in any folders, including custom folders.

    - Create a change from within an object.

      Open an object and go to **More Commands** ••• > **New** > **Create Change**.

    - Click the **CHANGES** tile on the **Home** page or click the **Changes** icon to view all changes.

        - Click **New** > **Create Change**.

        - Click **Create Change** on the top toolbar, then select the change type. The available subtypes of the change display, where you can further your selection. Skip to step 3.

2. Select the type of change you want to create.

- **Change Notice**
- **Change Request**
- **Deviation Request**
- **Problem Report**
- **Simple Change**

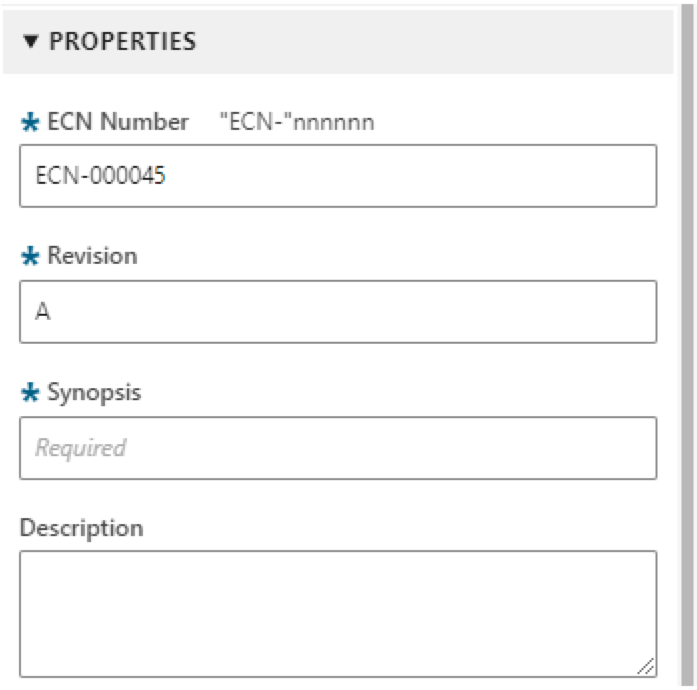
3. On the **Create Change** panel, enter the properties for the object:

   Step 1: Specify the item ID.

   Step 2: Enter the **Revision**.

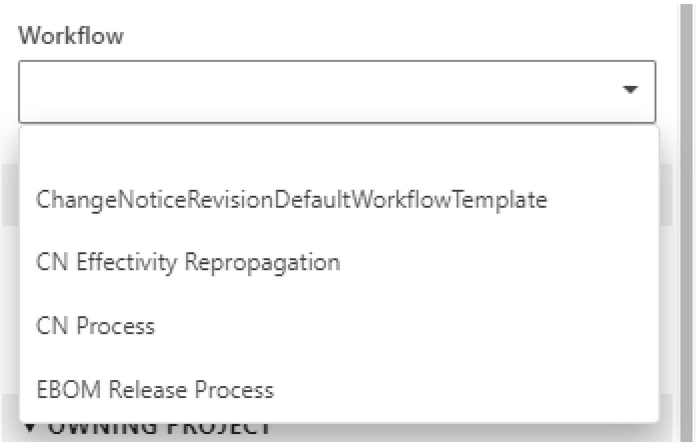
   Step 3: Enter the **Synopsis**.

   Step 4: Enter a **Description**.



> Note:
>
> In Active Workspace 6.2/Teamcenter 14.2, the **Description** is optional. In all other versions, it is required.

4. (Optional) To submit the new change to a workflow, select the workflow template from the **Workflow** drop-down list. Templates display based on the type of the object selected.



If a default workflow exists for the content type, it is automatically specified as the workflow template. You may also choose to leave this blank and not select a workflow.

5. (Optional) Click **Add** ⊕ under **Attachments** to add supporting objects and reference documents to the change.

6. If applicable, the project the object is owned by is listed under **Owning Project**.

   To assign a new project to an object, click **Add Project** to search for and select a project.

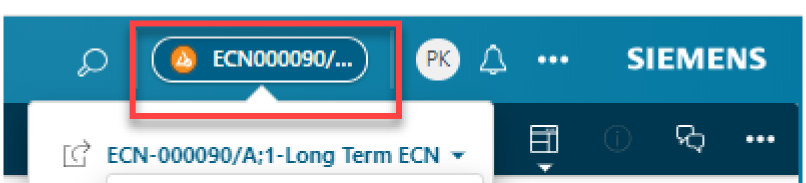
7. Select **Open New Change** to open the change once it has been created.

   Open New Change is checked if the preference **CM_open_change_on_create** is set to true.

8. Select **Set as Active Change** to set the newly-created change notice as the active change. The current user is added as an **Analyst**.

   Set as Active Change is checked if the preference **CM_set_active_change_on_create** is set to true.

   Once the change is created, the **Active Change** indicator is highlighted in the global navigation toolbar and the newly created change is listed as the active change.



9. Click the **Participants** tab to include any members who participate in the review and execution of the change. The participant types are based on type of the change object selected in the first panel.

   > Note:
   >
   > This tab is not available for a simple change.

10. Expand the participant section, then click **Add Participants** under each section to add the required participants.

11. Select one or more users to assign.

    Optionally, you can type the name of the participant to whom you want to assign the change in the top search box and press **Enter** or click **Search** to see results. Enter a partial name or wildcard characters.

    Filters are defaulted to **Type**, **Group**, or **Role**. A search box narrows your search to a specific property.

    You can increase the size of the panel by dragging the two bars on the left side of the panel to the left.

12. Once selected, click **Add**.

13. Do one of the following on the **Create** tab:

    - If you want to continue editing later, click **Create**.

      The change is created and displayed in edit mode.

      You can send it for resolution later.

    - If you want to send it for resolution immediately and a workflow has been selected, click **Create and Submit**.

      The change is sent through the workflow. Participants to review and approve the change may be automatically assigned depending on how your organization’s change process workflow is configured.

> Note:
>
> Depending on how your organization is configured, the **Create and Submit** button may be the only button available. The business object constant **Awp0EnableCreateForCreatePanel** controls display of the**Create** button. The default value is **true**.

> Tip:
>
> If a task is assigned to you as part of the change workflow, **Perform Task** appears on the tools and information bar. You can perform the task as you do from your Inbox.

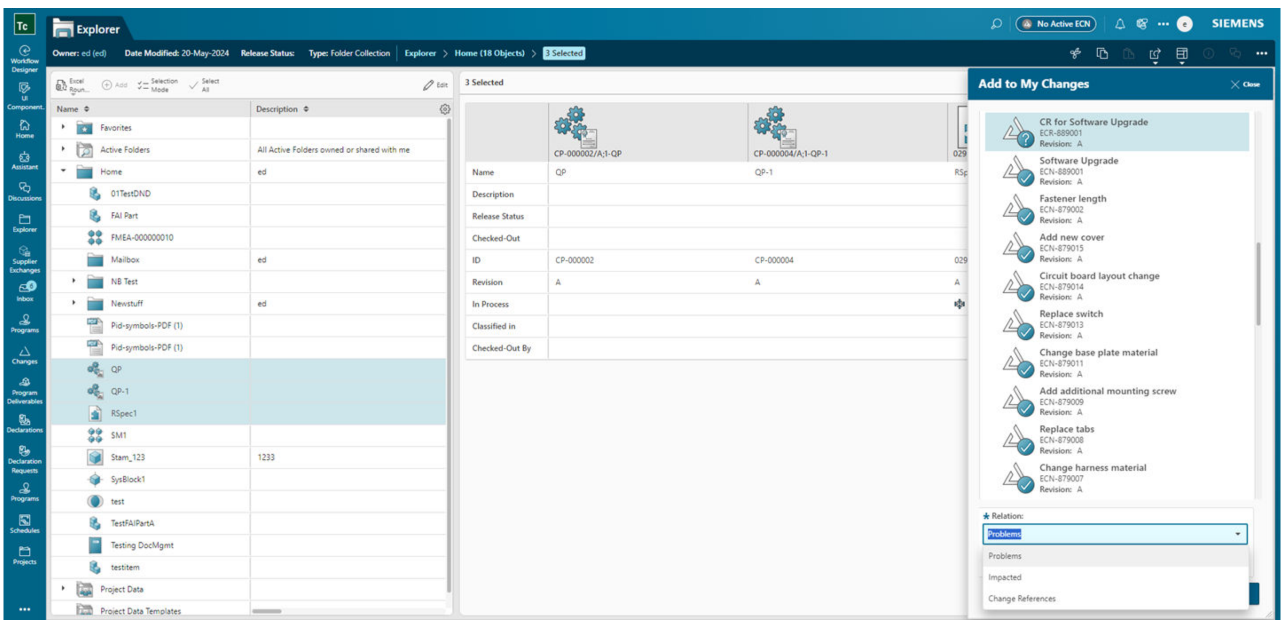
Add an object to a change

You can add an object to an existing change using **Add to My Changes**.

1. Select the object you want to associate with a change.

   You can select multiple items at one time. Selected items are highlighted.

2. Go to **More Commands** ••• > **Manage** > **Add to My Changes**.



   You can select an existing change from the list, or use the filter to find a specific change.

3. Select the type of **Relation** for the object.

   Relation options include **Problems**, **Impacted**, **Solutions**, or **Reference Items**.

4. Click **Add** to add the object to the selected change and apply its appropriate relation.

   Objects added to a change appear in the **Affected Items** tab of the selected change.

   Depending on the type of change and the relation, the added object also appears in the **Overview** tab.

Copy and paste objects in a change

You can copy and paste objects from the clipboard into the **Affected Items** or **Reference Items** sections of a change. Adding change objects depends on your role and access.

You can also copy and paste an object from one section to another. For example, you can copy an object from **Problem Items** into **Impacted Items**, or select an object from any of your folders and paste it into the appropriate section.

> Note:
>
> You cannot paste an object into the **Solution Items** table.

1. Select the change object and click **Copy** in the toolbar.

2. To include the copied change object, select a change from the list of **Changes** and click the **Affected Items** or **Reference Items** tab.

3. Click **Paste** on the appropriate change object section.

   > Note:
   >
   > If you are copying an object from **Problem Items** into **Impacted Items**, you must first clear the checkbox against the problem item before pasting it into the **Impacted Items** table.

   The change object is included in the table. You can associate multiple change objects in the same manner.

Make a copy of a change

If you have authoring privileges, you can make a copy of a change. Copying a change saves time by copying attributes and supporting information to ensure consistency across changes.

Depending on how Active Workspace is set up, you can choose to copy the supporting reference documents and problem items or participants.

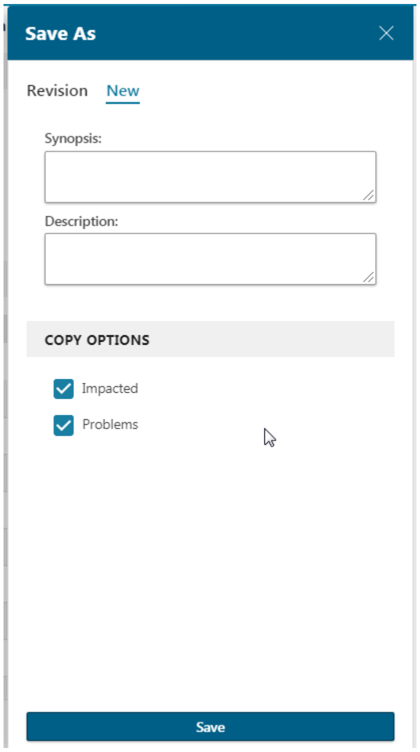
Unlike changes you create new, a copied change is not automatically submitted to workflow.

1. If necessary, search for the change you want to copy.

   > Tip:
   >
   > Be sure to select the correct revision of the change prior to copying.

2. Click **New** > **Save As** .

3. In the **Save As** panel, select **New**.



4. Enter the synopsis and description.

5. Choose **Copy Options** to copy into the new change.

6. Click **Save**.

   The new change is created and displayed in edit mode.

7. (Optional) Specify additional properties for the change, and click **Edit** > **Save Edits**.

   The edits are saved and the revision is displayed in read-only mode.

Copy a change item to a change notice working environment

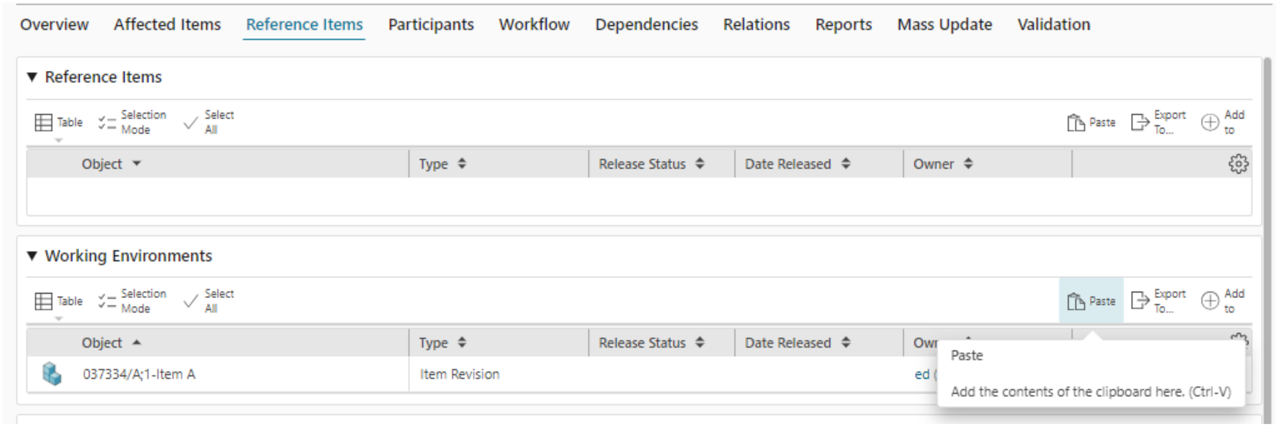
If you are an authorized user, you can add a copied change object to the working environment of a change notice.

1. If necessary, search or filter for the change object to copy.

2. Select the change object and click **Copy** in the toolbar.

3. To include the copied change object in the working environment of a change notice, select a change notice from the list of **Changes** and click the **Reference Items** tab.

4. Select paste in the **Working Environments** section.



The change object is now included in the table. You can associate multiple change objects in the same manner.

Edit a change

During the change process, you can edit the properties of a change and relate other objects to it to aid in the analysis and resolution of the change. For example, you may need to add reference documents to a problem report or specify which objects are impacted by a change.

Different phases of a workflow process may require you to edit a change or add objects to it. For example, many workflow processes start with a **Prepare Package** phase that asks you to review the current change and add any objects needed for its analysis.

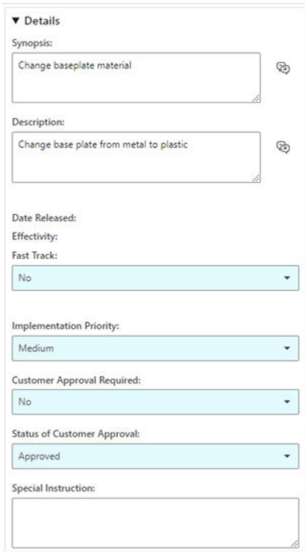
You can edit the properties of the change itself and its attachments. You can also edit in the table view.

1. If necessary, search for the change.

2. In the **Overview** tab, edit the properties for the change. Click **Edit** in the top right.

3. The **Overview** tab contains an editable **Details** section.

   Editable fields in the sections are surrounded by a bounding box.



4. Click the appropriate tabs to associate reference, impacted, or other documents (add attachments) to the change. You can also remove objects.

5. Click **Save**.

   The edits are saved, and the change is displayed in read-only mode.

> Note:
>
> Modification of change objects is permitted only when **CMClosure** is set to **open**.

Create a change in the context of an object and attach it to the change

You can create a change directly from an object in a folder or a list to automatically add it during change creation.

1. Select an object with which you want to associate a change.

   You can use search to find and select multiple objects in any view.

2. Go to **More Commands** ••• > **New** > **Create Change**.

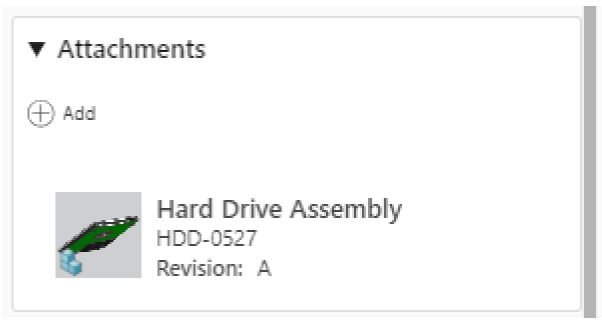
   The common change types are displayed for the items you select. If only one type is available, the create box for that type is displayed. If you select multiple items for which there is no common change type, a message appears indicating that a change type cannot be created because no common change types are available.

3. Select the type of change you want to create.

   Only changes that you can create are listed.

- **Change Notice**
- **Change Request**
- **Deviation Request**
- **Problem Report**
- **Simple Change**

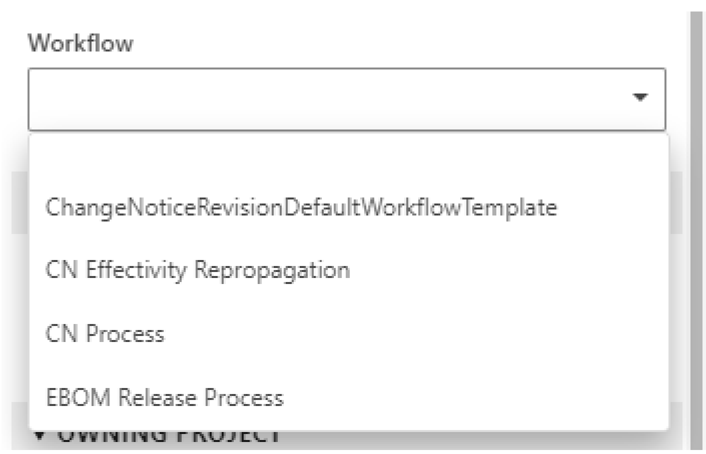
The object is automatically added as a reference document on the **Reference Items** or **Affected Items** tab, depending on preference settings.



4. Enter the properties for the object.

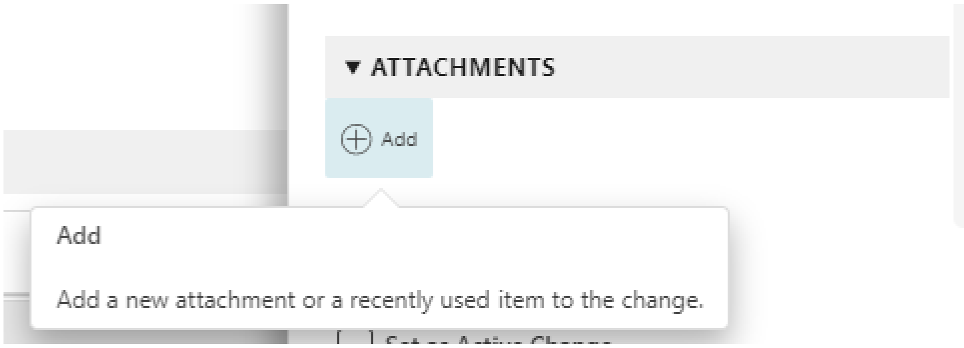
   For example, specify the item ID, revision, synopsis, and description for a problem report.

5. (Optional) To submit the new change to a workflow, select the workflow template from the **Workflow** drop-down list. Templates display based on the type of the object selected.



If a default workflow exists for the content type, it is automatically specified as the workflow template.

6. (Optional) Click **Add** ⊕ under **Attachments** to add supporting objects and reference documents to the change.



7. If applicable, the project the object is owned by is listed under **Owning Project**.

   To assign a new project to an object, click **Add Project** to search for and select a project.

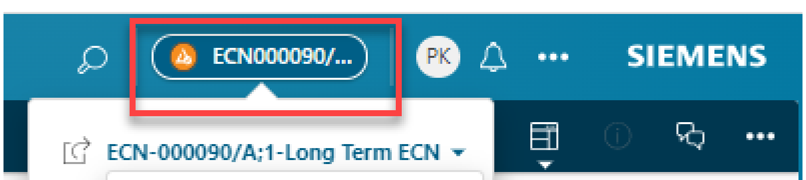
8. Select **Open New Change** to open the change once it has been created.

   Open New Change is checked if the preference **CM_open_change_on_create** is set to true by your administrator.

9. Select **Set as Active Change** to set a newly-created change notice as the active change. The current user is added as an **Analyst**.

   Set as Active Change is checked if the preference **CM_set_active_change_on_create** is set to true by your administrator.

   Once the change is created, the **Active Change** indicator is highlighted in the global header and the newly created change is listed as the active change.



10. Click the **Participants** tab to include any members who participate in the review and execution of the change. The participant types are based on type of the change object selected in the first panel.

> Note:
>
> This tab is not available for a simple change.

11. Expand the participant section, then click **Add Participants** ⊕ under each section to add the required participants.

12. Select one or more users to assign.

    Optionally, you can type the name of the participant to whom you want to assign the change in the top search box and press **Enter** or click **Search** to see results. Enter a partial name or wildcard characters.

    Filters are defaulted to **Type**, **Group**, or **Role**. A search box narrows your search to a specific property.

    You can increase the size of the panel by dragging the two bars on the left side of the panel to the left.

13. Once selected, click **Add**.

14. Do one of the following on the **Create** tab:

    - If you want to continue editing later, click **Create**.

      The change is created and displayed in edit mode.

      You can send it for resolution later.

    - If you want to send it for resolution now, click **Create and Submit**.

      The change is sent through the default workflow for resolution. Participants to review and approve the change may be automatically assigned depending on how your organization's change process is configured.

    Depending on how your organization is configured, the **Create and Submit** or the **Submit** button may be the only button available. The business object constant **Awp0EnableCreateForCreatePanel** controls the display of the **Create** button. The business object constant **Awp0EnableSubmitForCreate** controls the display of the **Submit** button. The default value of either constant is **true**.

    A thumbnail from the problem item is automatically attached to the change object, if it exists.

    > Note:
    >
    > If you prefer that the thumbnail is derived dynamically from the items related to change, your administrator can set the **CM_derive_thumbnail_from_relations** preference to true. **False** is the default option.

Cancel a change

You can cancel an engineering change notice (ECN) prior to its approval at any stage of the workflow. Before canceling an ECN, you can move any solution items that you wish to keep to another location to clone and reuse. However, once an ECN is canceled, any remaining solution objects become canceled and cannot be reused.

> Note:
>
> To be able to mark an ECN’s solution Items as **Canceled**, the CM-cancel-change-notice-handler must be included on the workflow template that routes the ECN through the approval process. The **EBOM Release Process**, **Simple Change Workflow**, and **CN Process** workflow templates all contain this handler out-of-the-box to provide the ability to cancel solution items. Solution item types to be canceled can be specified as a handler argument.

Procedure

1. Open the ECN that you want to cancel.

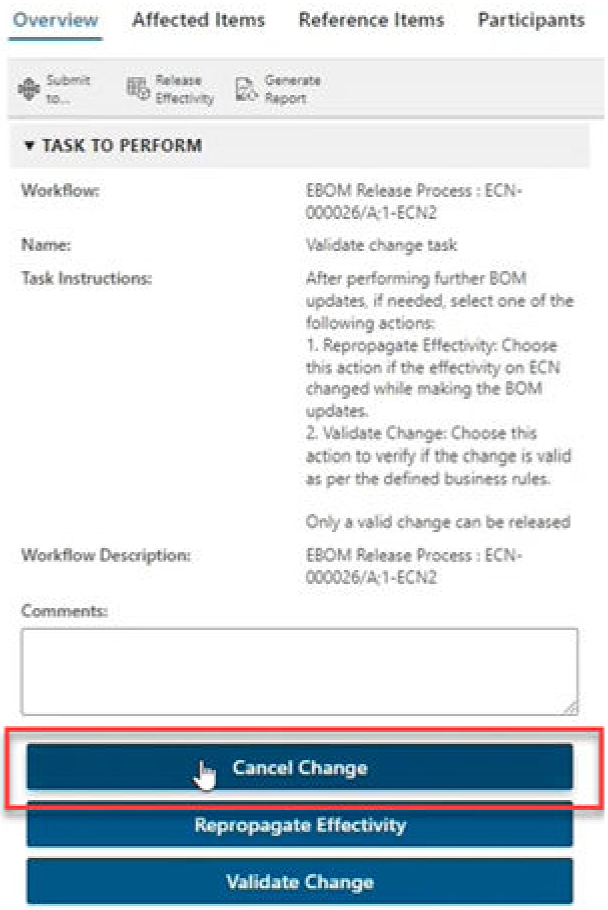
2. To preserve any of the revised solution items it contains, do the following:

    a. Click the **Affected Items** tab of the ECN.

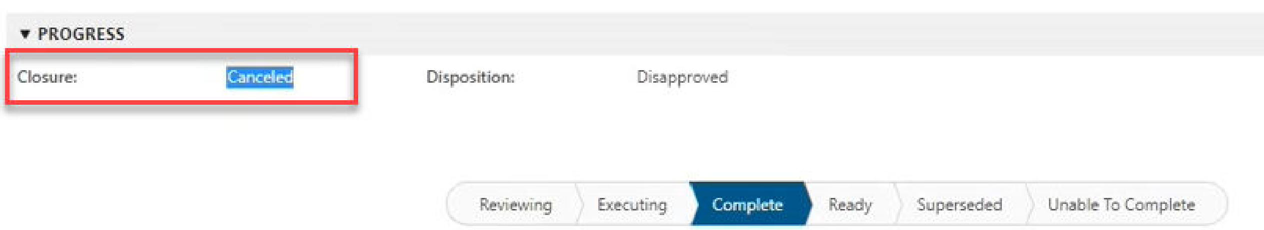
    b. Select the revised item(s) from the **Solutions Items** folder to keep, then click **Cut** > **Paste** from the primary toolbar to move the item to another location (such as **Explorer** or another change).

       You can also clone the canceled solution item (click **New** > **Save As** and consume the newly created/revised non-canceled object.

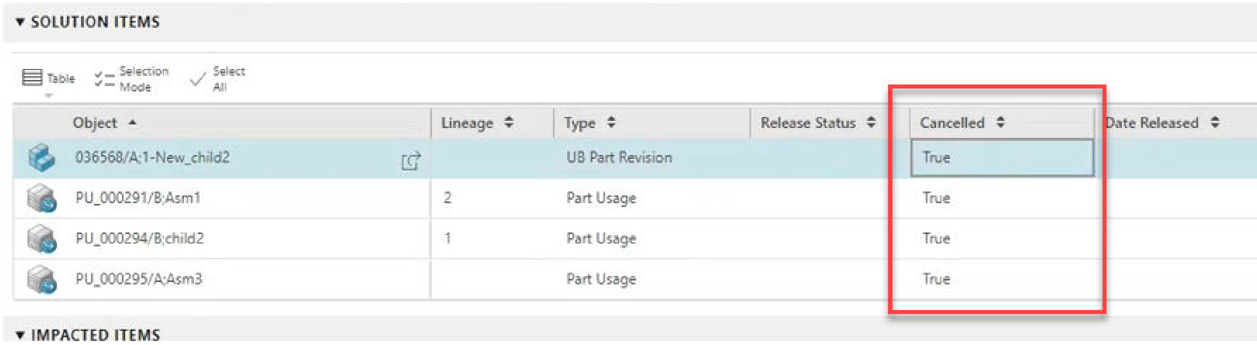
3. From the ECN's **Overview** tab, click **Cancel Change**.



Any objects that are part of the solutions items are permanently canceled and cannot be reused. The **Canceled** property is set as true on these solution items.

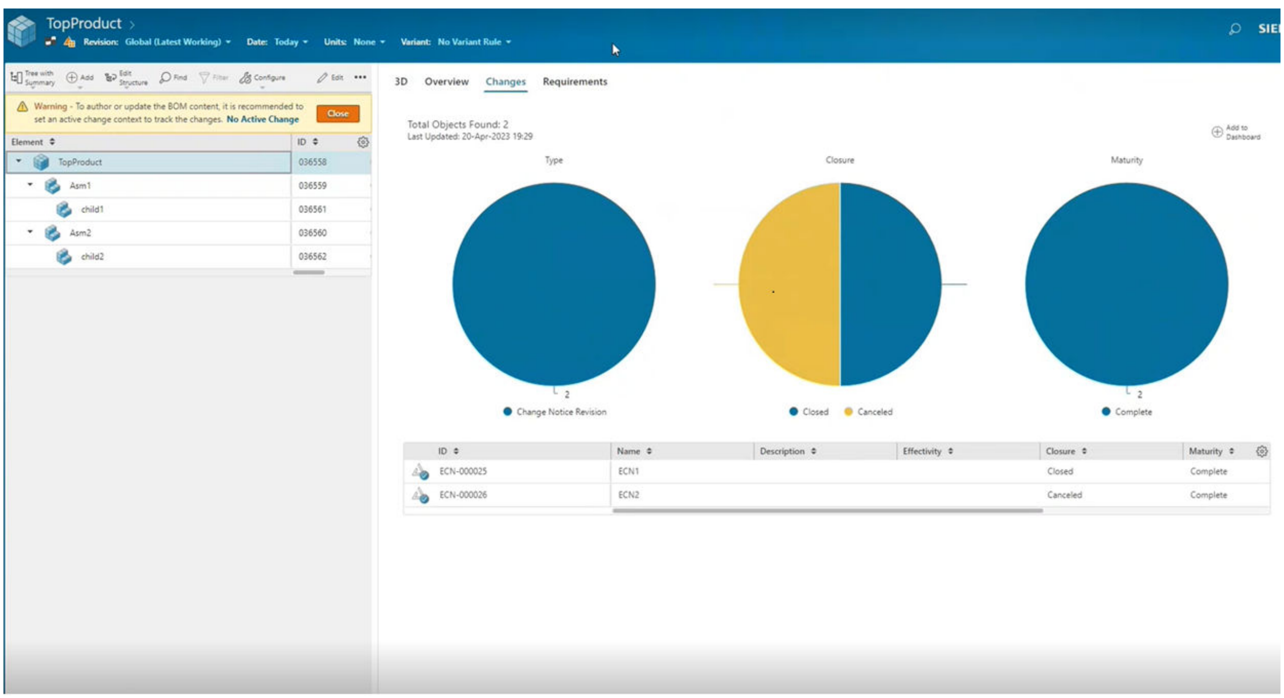


Solution items contained in the canceled change now contain a **Cancelled** state of **True** and cannot be modified.



The **Revision History** for the canceled item(s) also displays the **Cancelled** state of **True**. The canceled objects are always filtered out from all of the structure configuration.

In the **Changes Dashboard**, the top-level product displays a pie chart that includes all of the ECNs associated with that collaborative product. Canceled changes are displayed here as well. Click a pie chart to filter your changes.



Effectivity dates are listed for any canceled ECN in the **Effectivity** column. You can compare dates to determine the progression of the ECN's effectivity.

Note:

When an ECN contains solution items that include an effectivity range, and an ECN is canceled, any effectivity cutbacks on the canceled item are restored in full.

Send a change for resolution

Send a change for resolution

If you chose not to submit your change to a workflow process when you created it, you can send it later. For example, you can send the change later after you have added more supporting reference documentation. You must know the name of the workflow you want to submit it through.

1. If necessary, find and display the change you want to send for resolution.

2. Go to **More Commands** ••• > **Manage** > **Submit to Workflow**. Or, click **Submit to Workflow** from the toolbar. Follow the instructions to start a workflow for an object.

3. Click **Submit**.

The change is sent through the workflow process. Check your Inbox for tasks to perform.

Specify impacted item disposition

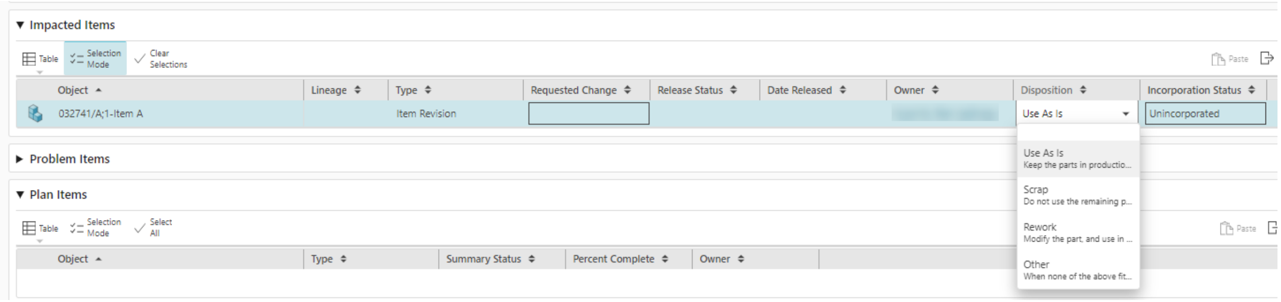
If you are a user allowed to make changes to a change notice, you can specify the disposition of impacted items being revised or replaced in a change notice.

1. Open the change notice you want to work with.

2. Click **Affected Items**.

3. Go to **More Commands** ••• > **Edit** > **Start Edit**.

4. In the **Impacted Items** row, select the object and a disposition from the drop-down list:



- **Use As Is**: Keep the parts in production
- **Scrap**: Do not use the remaining parts.
- **Rework**: Modify the part, and use the modified parts going forward.

- **Other**

  Other values may be available depending on your customization.

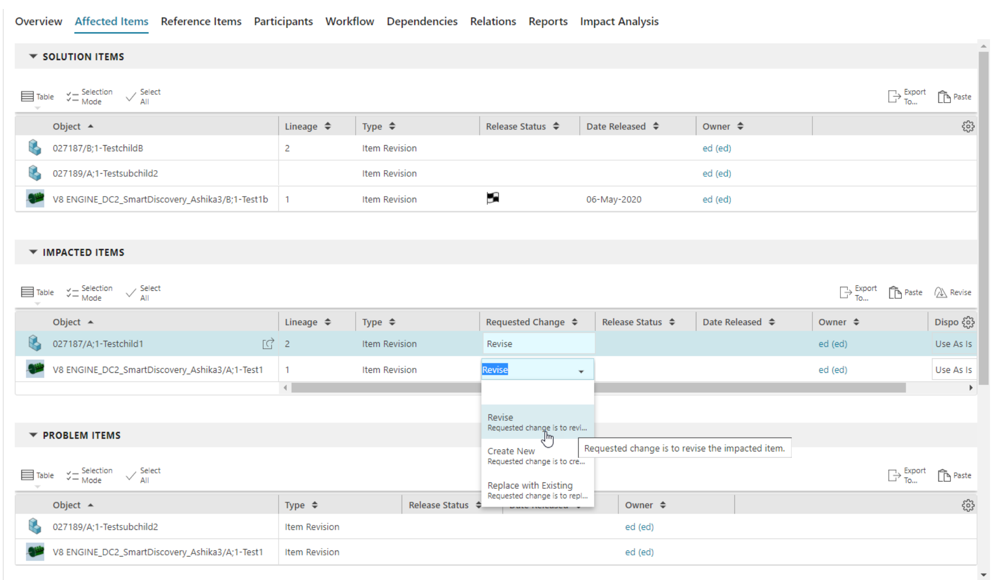
5. Go to **More Commands** ••• > **Edit** > **Save Edits**.

Specify the requested change type for impacted items

The **Impacted Items** table contains an option to specify the **Requested Change** type.

1. After adding an object to the **Impacted Items** table, go to **More Commands** ••• > **Edit** > **Start edit** to add or modify the requested change type.

2. Click within the editable **Requested Change** column of the impacted item, and click the down arrow to view a list of the available change types.



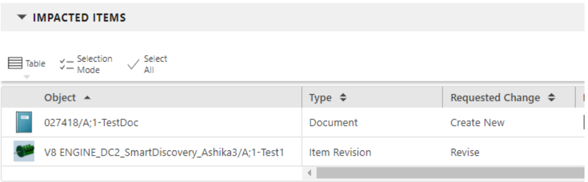
3. Select the appropriate change type. Repeat for other impacted items.

   The default list of values (LOV) includes:

   - **Revise**
   - **Create New**
   - **Replace with Existing**

4. Go to **More Commands** ••• > **Edit** > **Save Edits**.

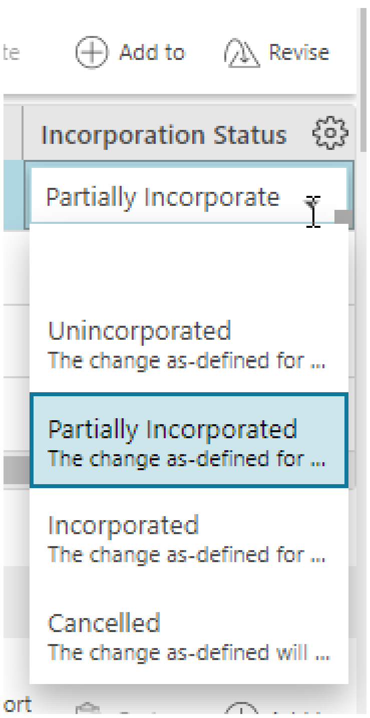
The updated **Requested Change** column displays the change types for the associated impacted items.



Specify the impacted item incorporation status

The **Impacted Items** table contains an option to specify the **Incorporation Status** of a change object in relation to a solution item.

1. After adding an object to the **Impacted Items** table, click the **Incorporation Status** column to show a list of incorporation statuses.



2. Select the appropriate status type. Repeat for other impacted items.

   The default list of values (LOV) includes:

   - **Unincorporated**
   - **Partially Incorporated**

- **Incorporated**
- **Canceled**

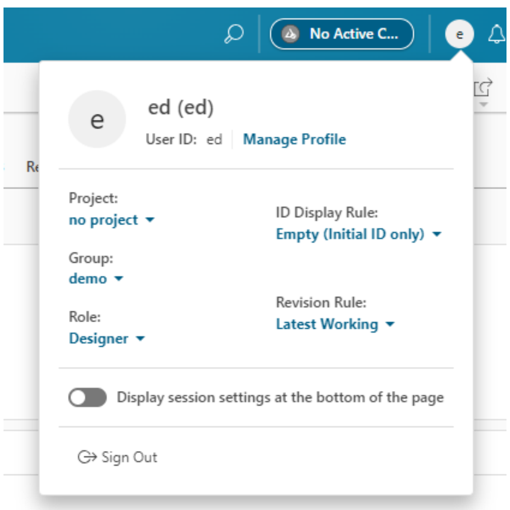
Note:

For more information, refer to About incorporating changes.

Set change notice revision rule in user profile

Access the user profile by selecting the user icon or picture in the global navigation. The user profile shows the current user's role and capabilities, along with access to project and revision settings.

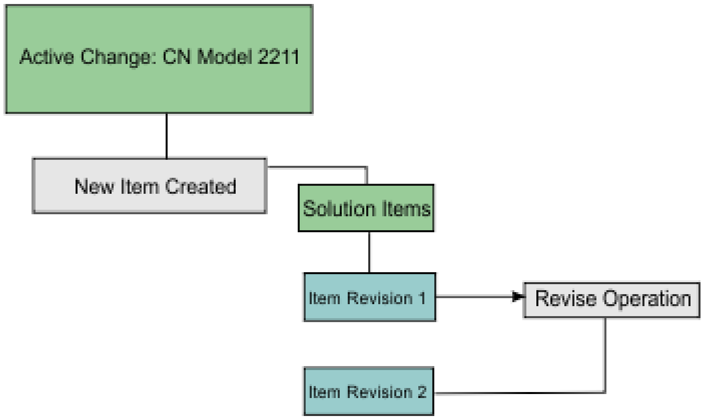
You can set the **Change Notice Revision** by selecting from the **Revision Rule** list in the user profile.



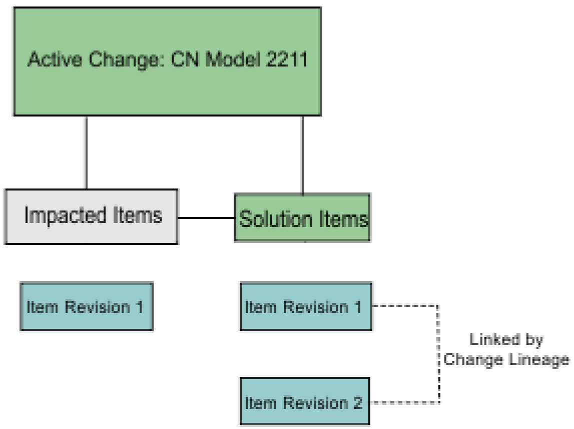
1. Open the user profile.
2. Under **Revision Rule**, select a rule from the list to apply the revision rule.

Example:

When a new item is created and CN Model 2211 is selected as the active change, its first **Item Revision** appears in the solution items of CN Model 2211. Likewise, if a revise operation is performed on an existing **Item Revision**, the newly-created item revision is also attached to CN Model 2211 as a solution item.



If the original item revision was already attached to CN Model 2211 as an impacted item, then in addition to adding the new item revision as a solution item, the original revision and the new revision are also automatically associated to each other with a change lineage.



Review impacted items

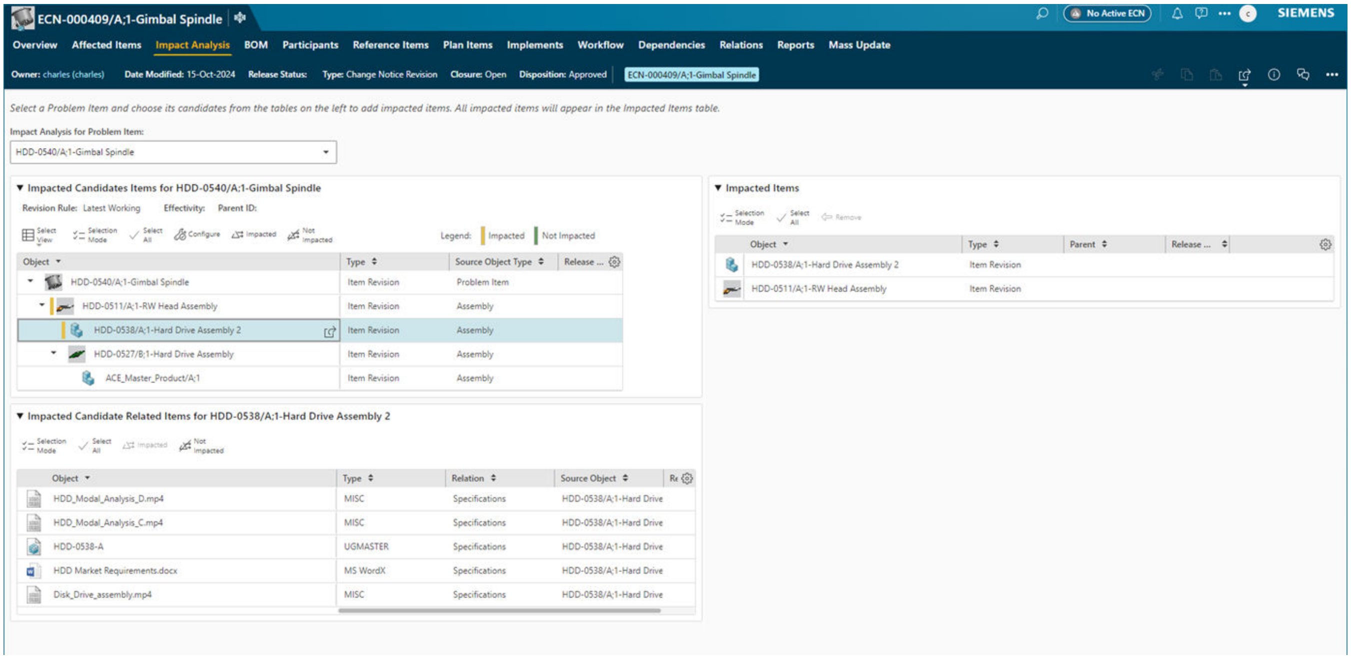
Impact analysis

Impact Analysis organizes the progression of a change object and all items associated with it. It automatically captures impacted candidates based on the problem items selected. This includes changes that are derived from another change containing impacted items. The derived change inherits all the impacted items.

Impacted items associated with a change are displayed in the **Overview**, **Affected Items**, and **Impact Analysis** tabs.

The **Impact Analysis** tab provides a view of all impacted items for a change object, in greater detail than the **Impacted Items** table in the **Overview** or **Affected Items** tabs. Impacted candidates are calculated for each problem item associated with a change, ensuring that all potential impacts are considered and addressed before proceeding with the change.

Each table contains details including type, relation, and status.



Note:

Your administrator can enable and configure the preference **CM_WorkspaceObject_Impacted_Relations** to define items displayed in the **Related Items** table. See Find related impacts for a problem item for more information.

Impact analysis reduces the manual process of identifying potential impacts and the history related to a change object by assembling items from the **Affected Items** tab. The items added to an **Impacted Items** table are automatically added to all views.

1. If there is more than one problem item for a change, select an item from the **Impact Analysis for Problem Item** list to view **Impacted Candidates Items**.

   One or more items are displayed in the table below the list.

2. To add an **Impacted Candidates Item(s)** *(for the change notice)* to the **Impacted Items** table, select one or more objects in the **Impacted Candidates Items** table and click **Impacted**.

   The **Impacted Items** table contains the impacted items for all problem items.

   A yellow bar next to the name indicates that it is added as an impacted item.

   If you select an object in the **Impacted Candidates** table that has attached items, the attachment appears in the **Impacted Candidates Related Items** table below it. An example of an attached item is a reference document.

3. Click **Configure** . This lets you locate and view the impacted content by filtering the BOM structure by the problem item revision and its parent, and then configure a range of release effectivity (unit or date).

   The **Configuration** panel opens. There are three filters available: **Revision Rule**, **Effectivity**, and **Parent ID**.

   a. Click the **Revision Rule** drop-down list box to select the revision rule that was set in the context of the user. It can be changed by selecting another revision rule from the drop-down list box.

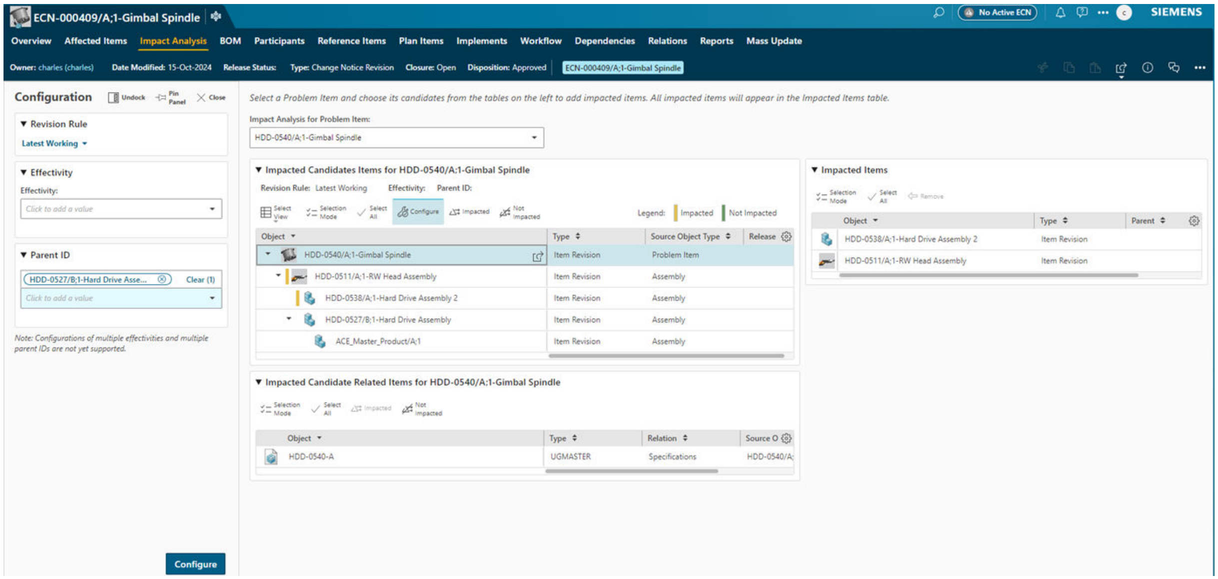
   b. Click the **Effectivity** drop-down list box to select the range(s) of effectivity for the impacted content. The effectivity originates from the change notice.

      Any assembly part that includes the specified range displays in the **Impacted Candidates Items** table. The effectivities shown are driven by the release effectivity set on the ECN revision/ECR revision. You can select multiple effectivity ranges from the drop-down list box.

   c. Click the **Parent ID** drop-down list box to select the ID of the level in the structure where you want to configure the impacted candidates. This is useful when your problem item is a part of multiple assemblies and you wish to configure the impacted candidates for a particular assembly. You can select multiple Parent IDs as well.

      The **Parent ID** filter is only visible when Smart Discovery Indexing is enabled on the environment. This can be verified by the **QSEARCH_filter_queries_by_product_path** preference; your administrator has set it to true when Smart Discovery Indexing is enabled. The level on which Smart Discovery Indexing is done is shown in the drop-down list box. See **Enable the Parent ID selection** for more information.

      The assembly parts that match all of the specified criteria then display in the **Impacted Candidates Items** table.



> Note:
>
> The preference **QSEARCH_filter_queries_by_product_path** must be set to true (the default) by your administrator to view the **Configure** panel.

4. If a problem item is used in used in multiple impacted assemblies, not all of them may be impacted with a specific change. To indicate that an object is not an impacted candidate, select the object and click **Not Impacted** from the **Impacted Candidates Items** table.

   A green-color bar next to the name indicates that the candidate is a non-impacted item in the change notice.

   If the item revision has any related items, you can also select non-impacted items from the **Impacted Candidates Related Items** table.

   To revert the non-impacted status, click **Impacted**. A yellow indicator shows the object is impacted.

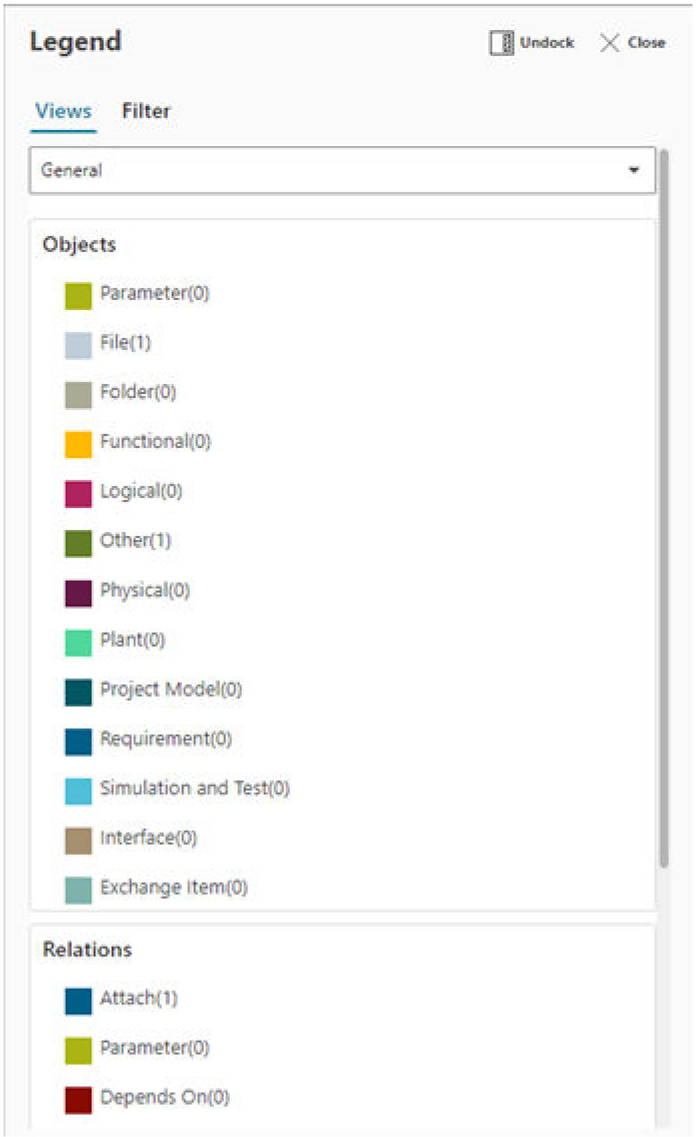
Relations view

1. Click **Select View** to toggle between **Table View** or **Relations View**.

   The **Relations View** is similar to the **Relations** tab, but displays the relations for individual **Problem Items**.

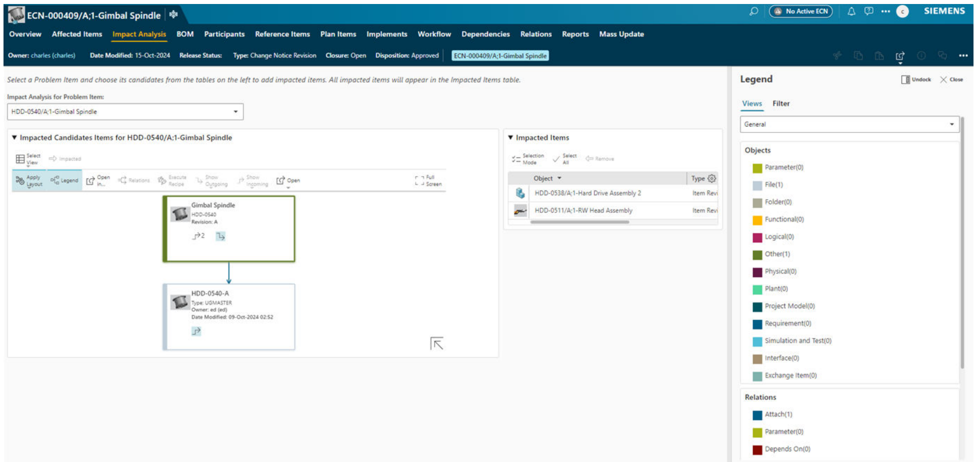
2. When in **Relations View**, click **Legend** to filter and view the object relationships.

   The **Legend** panel contains all object and relationship possibilities as determined by the type of impact analysis listed in the list.



The **Legend** displays the **Change Impact Analysis** view of the selected **Problem Item**. You can switch between the **Change** or **Change Impact Analysis** view of this item without having to navigate to the **Relations** tab.

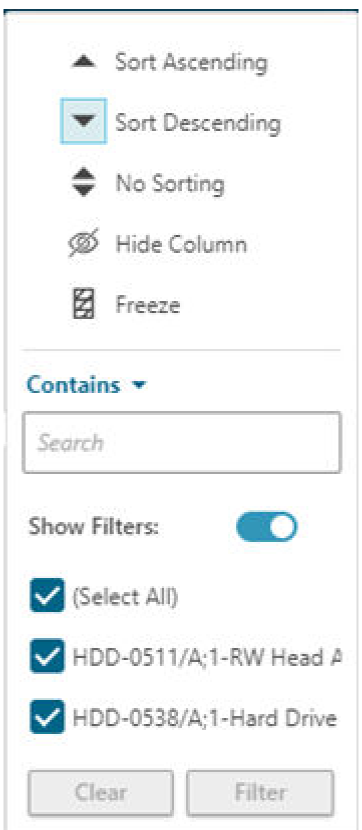
3. Select a view from the list to alter the types of **Objects** and **Relations** listed and change the relationship view.



Filtering and Sorting

Each table in the **Impact Analysis** tab contains filtering and sorting capabilities.

1. Click on a column heading to open the sorting and filtering panel for each column.

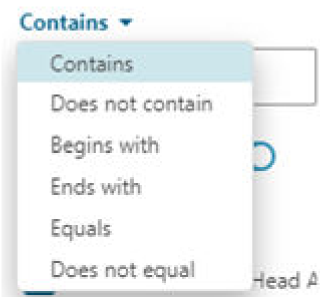


2. If available, click **Show Filters** to expand the available options.

Depending on the selected column, and your configuration, the options available for sorting and filtering will vary.

3. Select one or more items from the list and click **Filter**.

4. The **Search** list shows the parameters to search on specific criteria. The default value is **Contains**. Enter your text in the **Search** box and click **Filter**.



The filter icon displays next to the column heading. Hovering over the icon shows the filter criteria.

Select the column and click **Clear** to remove the filter.

Identifying Part Usages

Part usage in a BOM refers to the instances or occurrences of a part within the BOM structure. In an engineering BOM (EBOM), there is only one actual part, and all copies assigned to the manufacturing BOM (MBOM) are considered part usages. These instances do not have separate lifecycles; any change to the actual part affects all of its occurrences in the MBOM.

On the **Impact Analysis** tab, the **Usage Part** column in the **Impacted Candidates Items** table reflects this information. Although hidden by default, you can add this column to the table.

1. Click **Table Settings** > **Arrange** .

   The **Arrange** panel opens.

2. Select **Part Usage** from the **Available Columns** list, then click **Add** to move it to the **Displayed Columns** list.

3. Click **Save and Arrange**.

When you move an impacted candidate to the **Impacted Items** table in an EBOM, the usage revision appears in the **Part Usage** column of the **Impacted Items** table.

In the **Impacted Items** table, the **Type** column identifies it as a part usage, and the **Part ID** listed in the column identifies the part usage between the parent and the child objects. The **Parent** column displays the Parent ID of the usages from which the impacted items originate.

When a usage part is included in multiple structures in a change notice, each part usage is listed under the **Parent** column. This lets you to identify which usage is impacted by the part.

Enable the Parent ID selection

Smart Discovery Indexing must be enabled for each change notice to utilize the **Parent ID** drop-down list box. Once enabled, you must index each of your Parent IDs to view them in the **Configure** panel of the **Impact Analysis** tab.

> Note:
>
> Learn more about Smart Discovery Indexing.

Procedure

1. Open the Teamcenter command prompt.

2. To enable smart_discovery_index service (Active Workspace Indexing Service), run the following command:

   ```
   smart_discovery_index -u=tcadmin -p=tcadmin -g=dba -enable
   ```

3. To index a product ID of a BOM, run the following command:

   ```
   smart_discovery_index -u=tcadmin -p=tcadmin -g=dba -create
   -product=<prod ID>
   ```

   For example, if product=209607 is the assembly ID in the BOM, run:

   ```
   smart_discovery_index -u=tcadmin -p=tcadmin -g=dba -create
   -product=029607
   ```

4. After the Product IDs are identified, sync them by running the following command:

   ```
   cd C:\Apps\tc\tc2406\TR\TcFTSIndexer\bin
   ```

   ```
   runTcFtsIndexer -task=discovery:sync
   ```

5. To see a list of the indexed products, run the following command:

   ```
   smart_discovery_index -u=tcadmin -p=tcadmin -g=dba -list
   ```

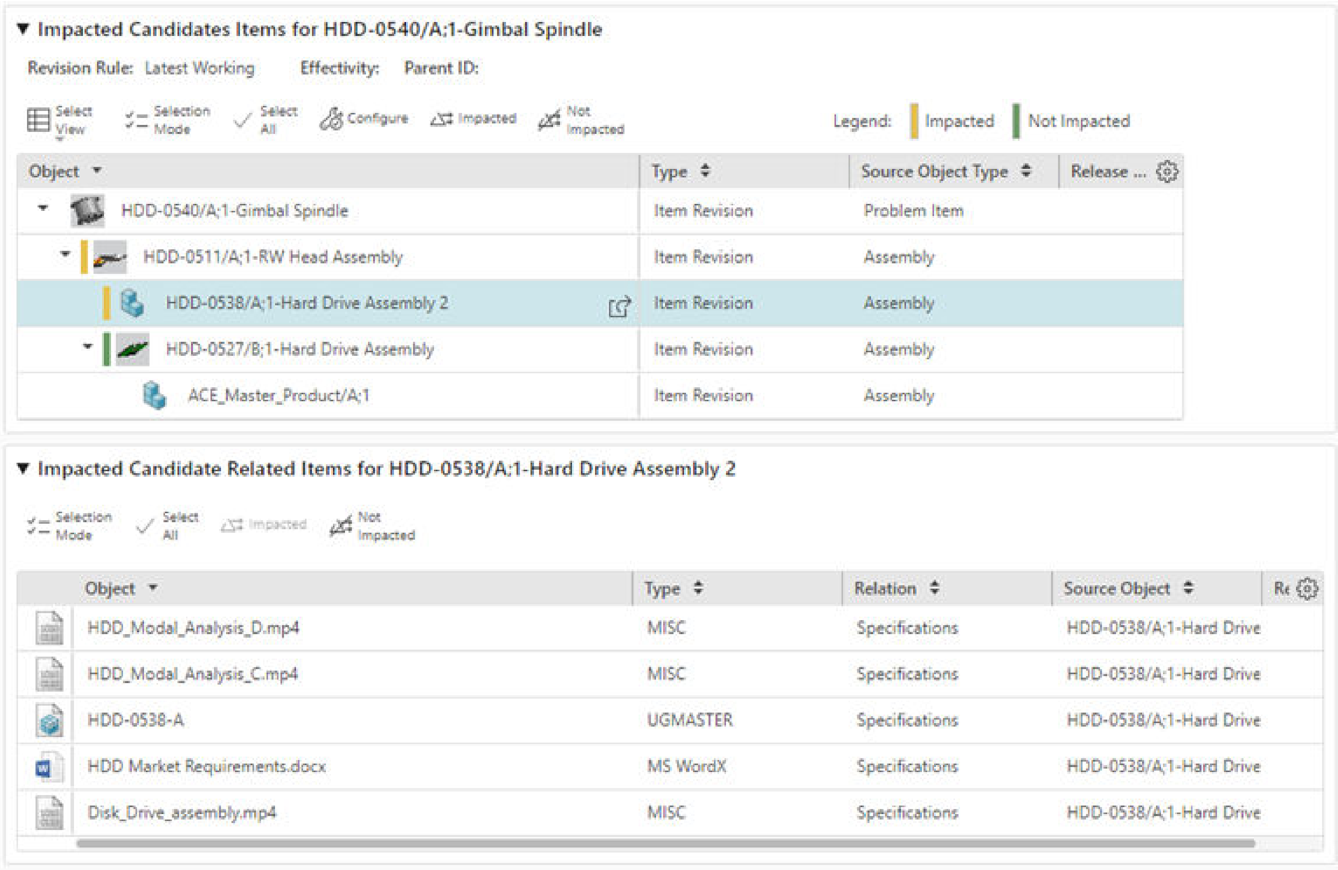
Find related impacts for a problem item

The **Impacted Candidate Related Items** table lets you associate various items or documents that are relevant to a particular change request or change order. It serves as a centralized location to track and manage all the items that are affected by or have a relationship with the change being proposed or implemented. By listing all of the related items, you can analyze the impact analysis more carefully since it shows how the change will affect other parts of the product.

> Note:
>
> Your administrator can enable and configure the preference **CM_WorkspaceObject_Impacted_Relations** to define items displayed in the **Related Items** table. This preference only functions with revisable objects.

For example, if the problem item has a document revision attached via an IMAN_specification relation, upon selecting the problem item in the **Impacted Candidates Items** table, the document revision is displayed as a related object in the **Impacted Candidate Related Items** table.

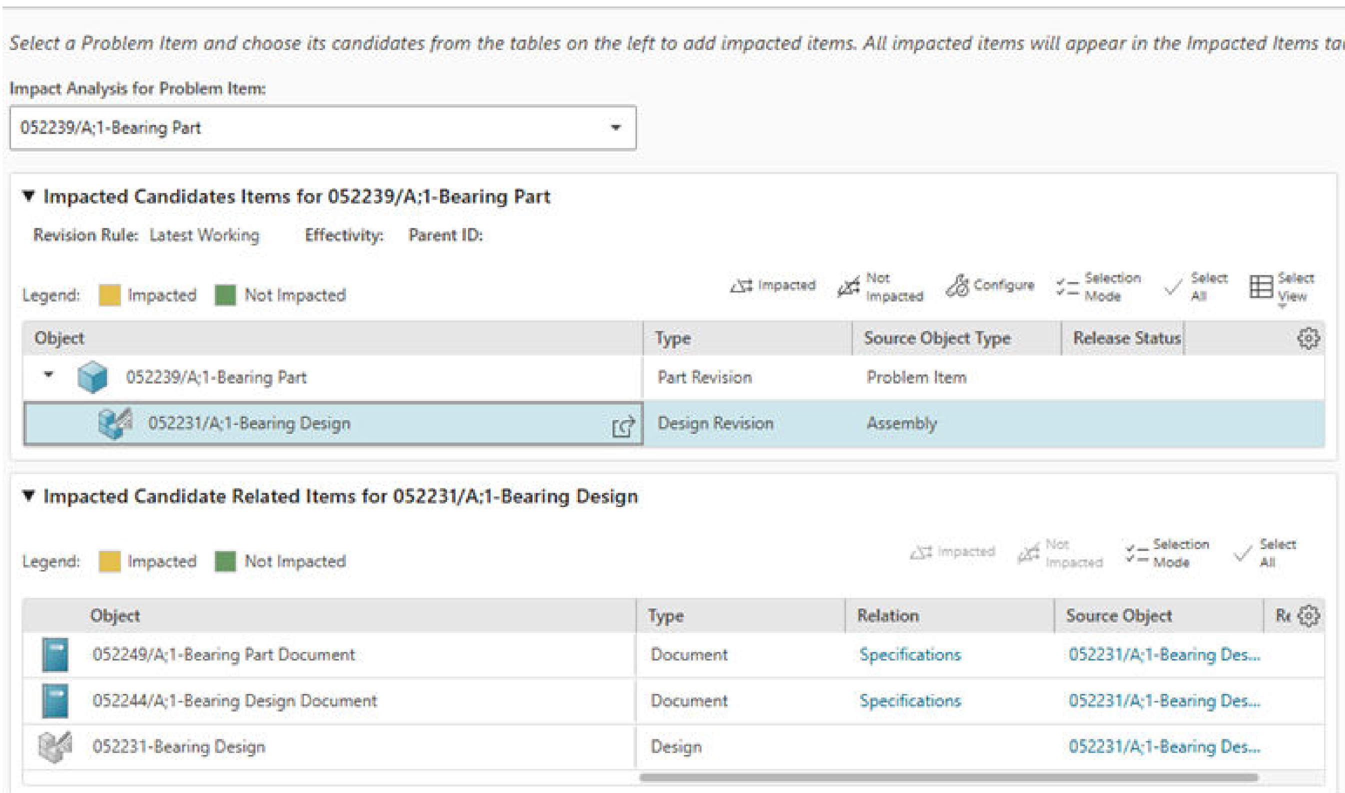
Select the part or item in the **Impacted Candidate Related Items** table to view its related items. You can then add the related items to the **Impacted Items** as necessary.



View multiple levels in the Related Items table using closure rules

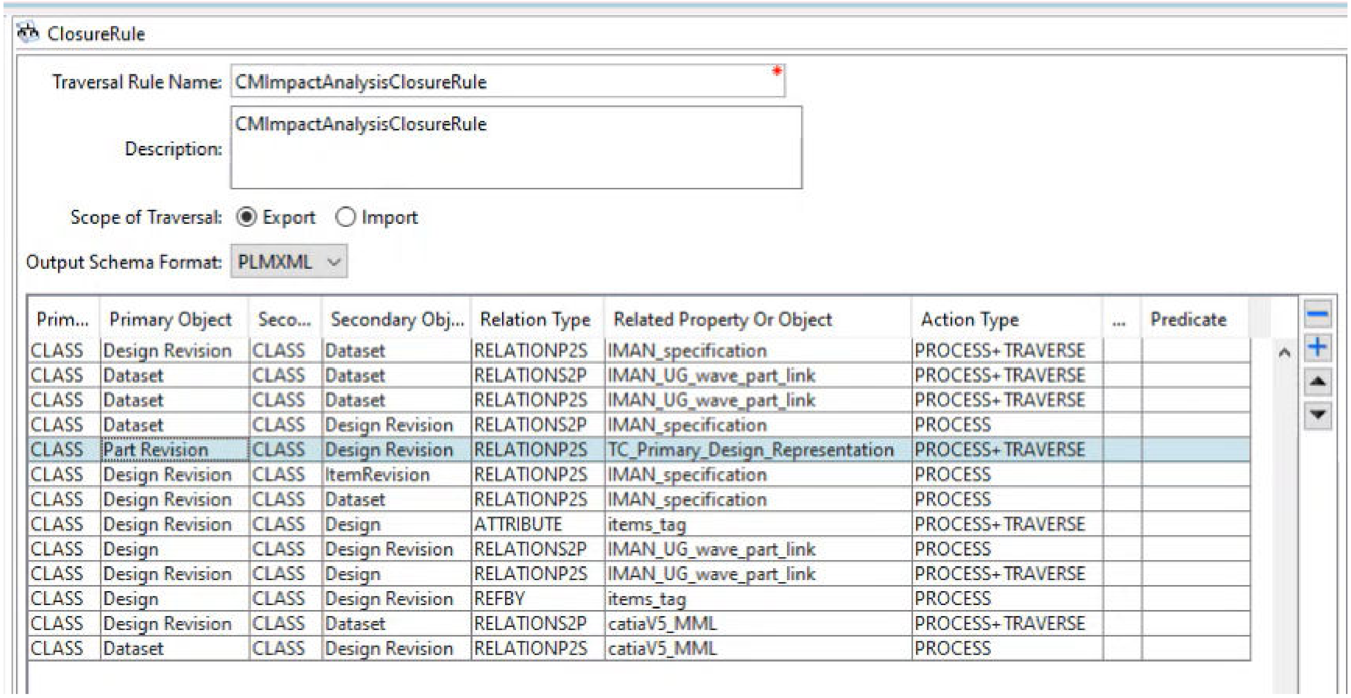
You can view multiple levels of an assembly in the **Related Items** table by specifying closure rules. *Closure rules* are a set of predefined conditions that specify how to traverse the data structure and define relationships that are of interest and what to do when these relationships are encountered. They identify how to access and process certain relationships in the data structure, such as item revisions, datasets, variant expressions, and classifications.

When used in conjunction with an aligned design or part structure, closure rules let you display every related item of an impacted candidate, regardless of whether it is attached to a particular change notice. This additional data can help to identify possible impacted candidates for your problem item.



In this example, problem item **Bearing Design** is a part revision in the **Impacted Candidates** table. Its design counterpart, **Bearing Design**, is then shown in the **Impacted Candidate Related Items** table. Since the **Bearing Design Document** and **Bearing Part Document** are related to the **Bearing Design** design revision, those documents are also automatically included in the table as a related item. Closure rules enabled these multiple related items to display.

Closure rules are created using the PLM XML application. Change Management provides the following closure rules OOTB to use with the **Related Items** table:



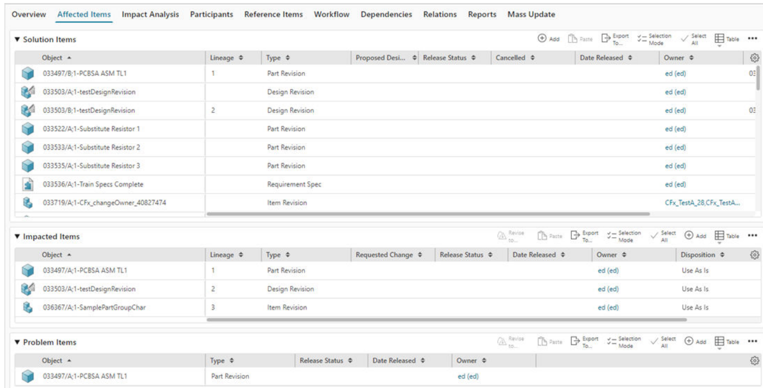
You can modify/update the existing **CMImpactAnalysisClosureRule** closure rule to add or update closure rule clauses.

> Note:
>
> Change Management supports both preference and closure rule mechanisms to retrieve related items for impacted candidates.

Revise problem or impacted items

You can revise impacted and problem items on a change notice without opening the objects separately.

- When you revise an impacted item, the new revision becomes the solution item for the same change notice.
- If you revise a problem item, the new revision created becomes a solution item for the same change notice and the previous revision becomes an impacted item.
- When you perform a save as operation on a problem item or impacted item, the new item created becomes a solution for the change notice.



Revise Problem Items

1. Open the change notice containing the affected items.

2. Click **Affected Items**.

3. Select the **Problem Item** to revise.

4. Go to **More Commands** > **New** > **Revise**. Or, click **Revise to Solution** on top of the table.

   Select the appropriate options and include a description, if necessary.

5. Click **Save**.

   A new item is created, which is a solution for the change notice.

Revise Impacted Items from the Affected Items tab

1. Open the change notice containing the affected items.

2. Click **Affected Items**.

3. You can select one or more **Impacted Items** to revise.

4. Go to **More Commands** > **New** > **Revise**. Or, click **Revise to Solution** on top of the table.

   If you select multiple items, a message appears, stating whether the revision is a success or a failure. Revisions that are successful appear in the **Solution Items** section.

5. (Optional) If you selected a single item for revision, the **Save As** panel appears. Complete the options, and click **Save**.

A new solution item is created for the change notice.

Revise Impacted Items from the Overview tab

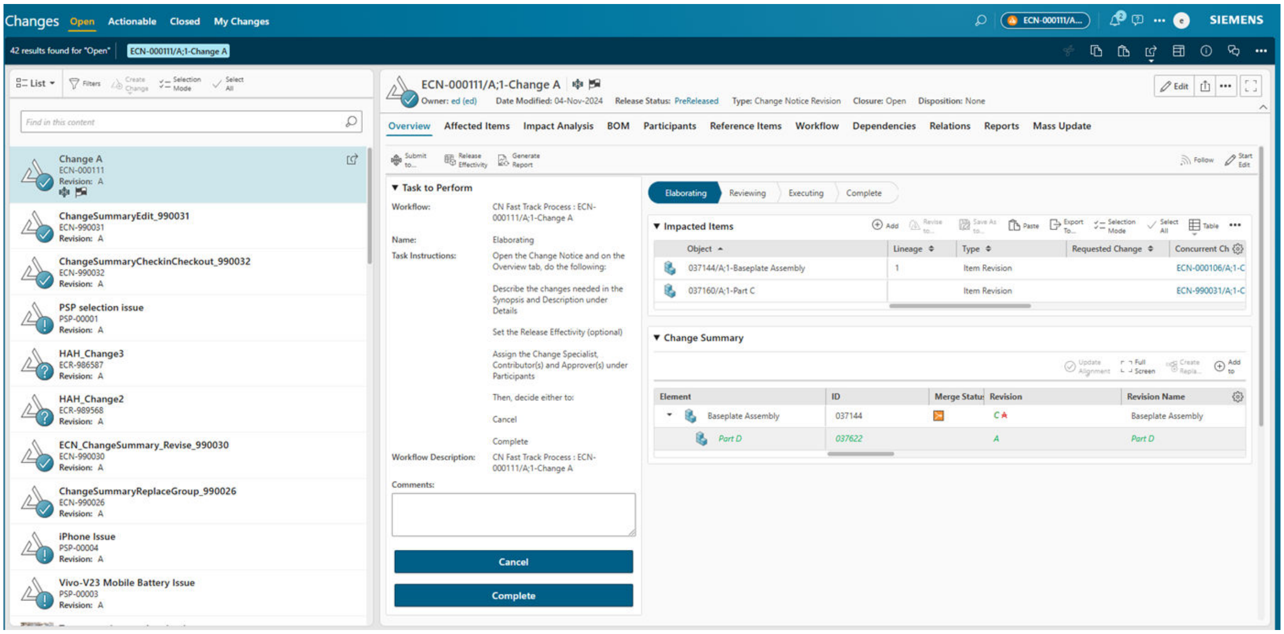
1. Open the change notice containing the affected items.
2. On the **Impacted Items** table on the **Overview** tab, select the **Impacted Item** to revise.
3. Go to **More Commands** > **New** > **Revise**. Or, click **Revise to Solution** on top of the table.
4. Complete the options, and click **Save**.

   A new solution item is created for the change notice.

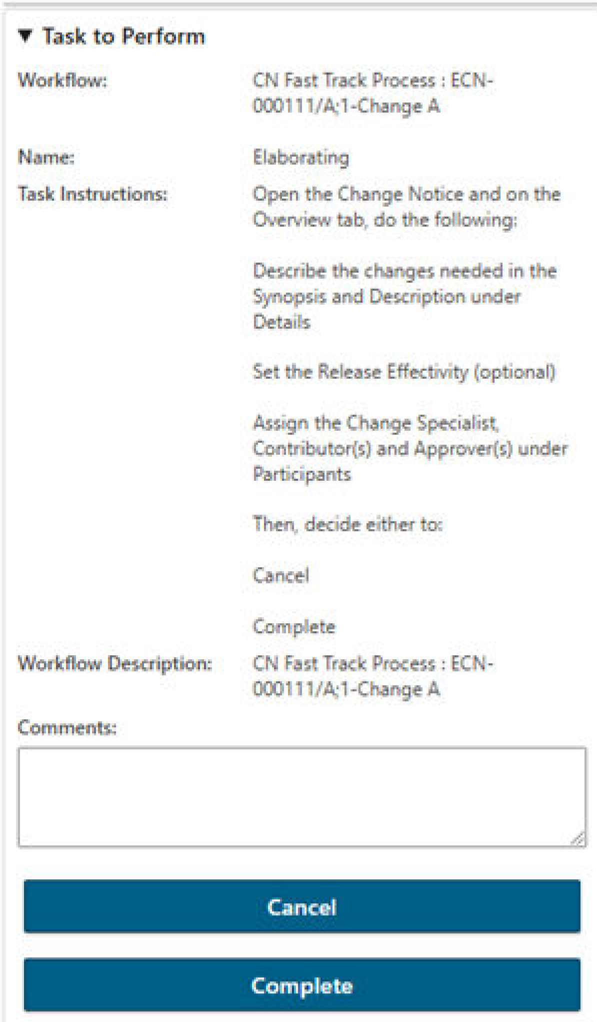
Perform a task in the Changes Overview tab

In addition to performing an assigned task from your Inbox, you can perform a task in the **Overview** tab of a change.

1. Select **Changes** to view all open changes.
2. Select a change from the list. If not already selected, click the **Overview** tab.



The current assigned task is listed under **Task to Perform**.

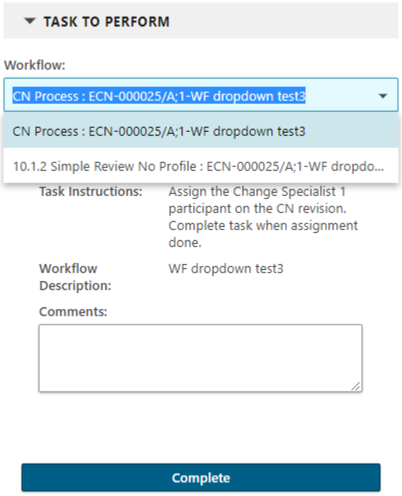


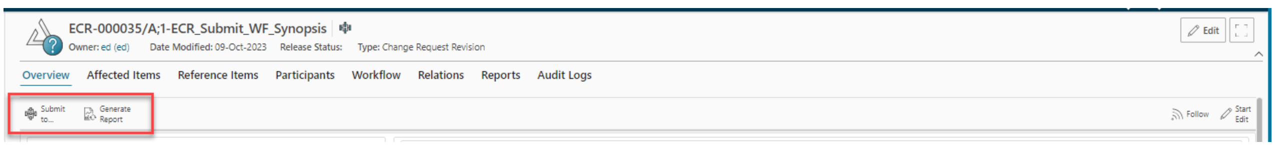
3. Review the instructions and complete the task.

   Similarly, complete any additional assigned tasks.

4. (Optional) A change object could belong to more than one workflow. The workflow list displays the name of the currently selected workflow.

   Select a workflow from the list to see the task to be performed for that workflow.



> Note:
>
> The **Overview** tab includes a frequently used commands toolbar that quickly lets you submit the selection to a workflow, generate a report based on the selected object, follow any actions and receive notifications on the selected object, and start an edit on the object properties.
>
> 
>

Make mass updates to a structure

1. On the home page, click the **Changes** tile.

2. Search for the change notice you want to work with, select the change notice, and click **Open**.

3. Click the **Affected Items** tab. In the **Problem Items** section, click **Add to**.

4. Click the **Mass Update** tab.

   The **Mass Update** tab is not visible when the change notice is in the **Cancelled** or **Closed** state.

   Even if multiple problem items are associated with the same change notice or the same problem item is associated with multiple active change notices, you can propose mass update actions for the impacted items of all problem items through the **Mass Update** tab. These actions are applied together as part of a single workflow.

   The problem item that you added from the **Affected Items** tab is shown in the **Problem Item** list under the **Impacted Assemblies** section.

All parent assemblies of the selected problem item are listed in a table under the **Impacted Assemblies** section.

5. In the list of impacted assemblies, select the row in which you want to make the update. Only assemblies with the status **Released** can be updated.

6. Choose **More Commands** ••• > **Edit** > **Start Edit**.

7. Click in the **Action** column and select the required action from the list. Only the actions available for the selected row are displayed. The selected action for the row is highlighted.

8. For **Add**, **Substitute**, or **Replace** actions, you can add the required item to the **Proposed Item** column using **Search** or **Palette**.

9. Click **Save Edits** after updating the required rows.

10. To delete a saved markup, select the row, and select **None** from the **Action** column. The markup is deleted and the assembly is removed from the list of affected items.

11. Set the engineering change notice as Active Change.

12. (Optional) Click the **Affected Items** tab to view the list of items that are marked up for update.

13. Select the affected item that you want to verify from the list and click **Open**.

14. To verify the markup, choose **More Commands** ••• > **Markup**.

15. Click the **Mass Update** tab. In the **Mass Update** tab, you can revert the markups before they are applied using the workflow.

16. To initiate applying the markup, click **Submit to Workflow**.

    The **Submit to Workflow** panel with a list of workflow templates is displayed.

17. Select the **Review and Apply BOM Markups** workflow template and click **Submit**.

18. Assign the reviewers for the workflow.

19. Once the workflow is approved, the changes are applied. To verify the changes, go to **Affected Items**, select the row, and click **Show Markup**.

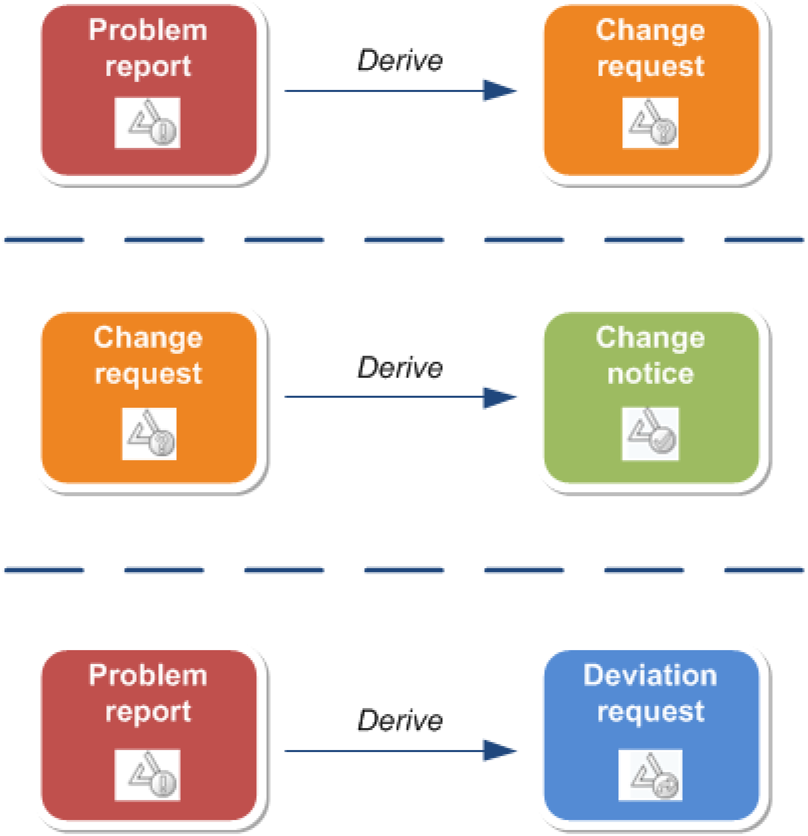
Derive a change and send for resolution

Derive a change from another change

Once you have identified a problem and investigated it, you can derive a change object into the next phase of the change process. The following examples represent the **Derive** process.

- Derive a change request from a problem report to determine a solution for the problem.
- Derive a change notice from a change request to implement the solution to the problem.
- Derive a deviation request from a problem report to allow a deviation.

In addition, if your company has custom changes, you can derive one custom change from another custom change.



- The change must be in the correct change state for you to derive another change from it.

  Permissible change states are controlled by condition rules and may be customized by a system administrator.

- Depending on how Active Workspace is set up, the reference, problem, or impacted objects associated with the source change (its relationships) may be automatically added to the derived change. See your system administrator for more information.

> Note:
>
> Refer to Define deep copy rules for copying options from an ECR to an ECN for more information on configuring **Copy Options**.

Derive a Problem Report to a Change Request

You can derive a change request from a problem report to determine a solution for the problem.

Procedure

1. Select the relevant PR.

2. Go to **More Commands** > **New** > **Derive Change**.

3. In the **Derive Change** panel, select **Change Request** or **Deviation Request**, if available.

4. Enter the following information:

    - CR/DR number (if you want to change the number automatically displayed)
    - Revision number (if you want to change the number automatically displayed)
    - Synopsis
    - Description (optional)
    - For a deviation request, enter the deviation type.
    - (Optional) To submit the new change to a workflow, select the workflow template from the **Workflow** drop-down list. Templates display based on the type of the object selected.

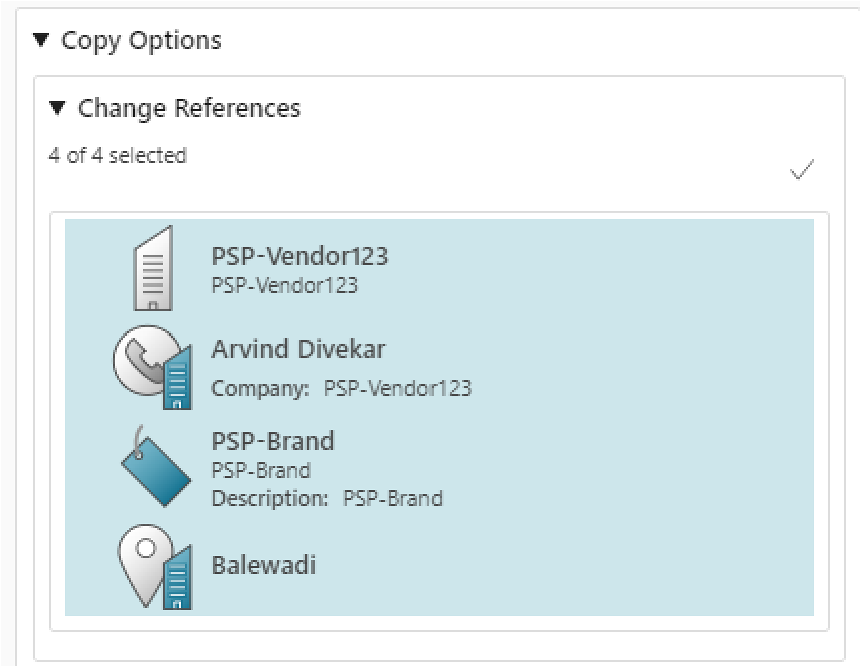
      If a default workflow exists for the content type, it is automatically specified as the workflow template.

    The Implements section shows the source change items.

5. (Optional) To copy **Affected Items** and **Reference Items** from a problem report to a change request, click the **Copy Options** label.

    For more information on configuring **Copy Options**, refer to Define deep copy rules for copying options from an ECR to an ECN.

When you click **Copy Options**, the section expands and shows each category of objects that are included in the problem report. Select or clear the items you wish to copy into the change request.



6. Click **Derive** to create the item, or click **Derive and Submit** to submit for resolution.

   If you select **Derive**, the new change opens in **Edit** mode. Make any necessary changes and click **Save Edits**.

   If you select **Derive and Submit**, the new change is submitted to workflow.

Derive a single Change Request to a Change Notice

You can derive a change notice from a change request to implement the solution to the problem.

Procedure

1. Select the relevant change request.

2. Go to **More Commands** ••• > **New** > **Derive Change**.

3. Change the properties, if necessary.

   The properties for the derived change are automatically filled based on the values of the initial change. In addition, any objects associated with the initial change (its relations) are automatically added to the derived change, depending on how Active Workspace is set up. Active Workspace also associates the objects appropriately.

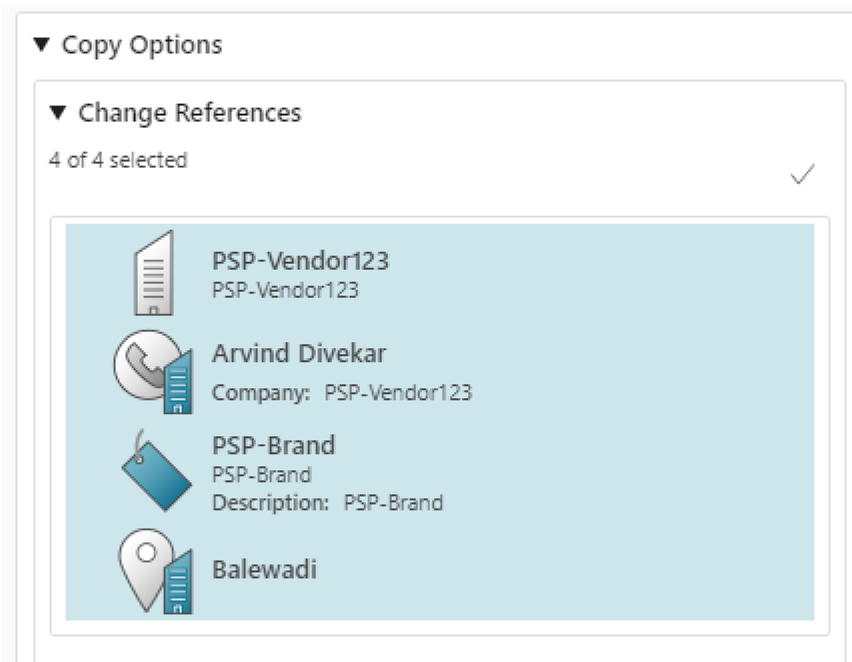
(Optional) To submit the new change to a workflow, select the workflow template from the **Workflow** drop-down list. If a default workflow exists for the content type, it is automatically specified as the workflow template.

The **Implements** section displays the source change request of the change notice.

4. (Optional) To copy **Affected Items** and **Reference Items** from a change request to a change notice, click the **Copy Options** label.

   Refer to **Define deep copy rules for copying options from an ECR to an ECN** for more information on configuring **Copy Options**.

   When you click **Copy Options**, the section expands and shows each category of objects that are included in the change request. Select or clear the items you wish to copy into the change notice.



5. Do one of the following:

   - To continue editing, click **Derive**. You can send it for resolution later.
   - To send it for resolution immediately, click **Derive and Submit**.

   If you select **Derive**, the new change will open in **Edit** mode. Make any necessary changes and click **Save Edits**.

   If you select **Derive and Submit**, the new change is submitted to workflow.

   Check your **Inbox** for tasks to perform.

Participants to review and approve the change may be automatically assigned depending on how your organization's change process is configured.

The relationship between the initial change and the change it is derived from is shown in the **Implements** and **Implemented by** section of the **Reference Items** tab. The **Implements** object is the object this change was derived from, and the **Implemented By** object refers to a change object derived from this one.

You can click any of the changes to open and view them.

Derive a single change from multiple change objects

You can derive a single change from multiple, less-mature change objects.

1. Select multiple change objects of the same type to use in creating the new change notice or change request.

   Note:

   You cannot derive multiple change objects of different types.

   The selected items are highlighted.

2. Go to **More Commands** ••• > **New** > **Derive Change**.

3. In the **Derive Change** panel, select the type of change, if available.

   Note:

   Change requests can only be derived into a change notice.

4. Enter the following information for a change request:

   - CR/CN number (if you want to change the number automatically displayed)
   - Revision number (if you want to change the number automatically displayed)
   - Synopsis
   - Description

     Note:

     In Active Workspace 6.2/Teamcenter 14.2, the Description is optional. In all other versions, it is required.

- For a deviation request, enter the deviation type.
- (Optional) To submit the new change to a workflow, select the workflow template from the **Workflow** drop-down list. Templates display based on the type of the object selected.

> Note:
>
> When you derive a change notice from multiple source change requests, you cannot edit the **Problem Items** or **Impacted Items** as you would when deriving a single change. All of the **Affected Items** are copied into the new change notice.

The **Implements** section shows all of the source change items.

5. Click **Derive** to create the item, or click **Derive and Submit** to submit for resolution.

   If you select **Derive**, the new change opens in the **Edit** mode. Make any necessary changes and click **Save Edits**.

   If you select **Derive and Submit**, the new change is submitted to the workflow.

Fast track a change notice

A fast track process eliminates the formal review process to implement a change. **Fast Track** is available from the editing menu or available during the change process workflow.

Refer to the *Change Manager* guide for more information and examples of both fast track and standard track.

Edit a change request manually to enable Fast Track

You can edit a change manually to send it through Fast Track.

1. Click **Changes** △, select a change notice, and expand the **Details** section.
2. Go to **More Commands** ••• > **Edit** > **Start Edit** or click **Start Edit** from the toolbar.
3. In the **Fast Track** list, select **Yes**.

   If you select **No**, **Fast Track** is disabled when an change notice is derived from this change request. If left blank, Fast Track is still available during workflow.

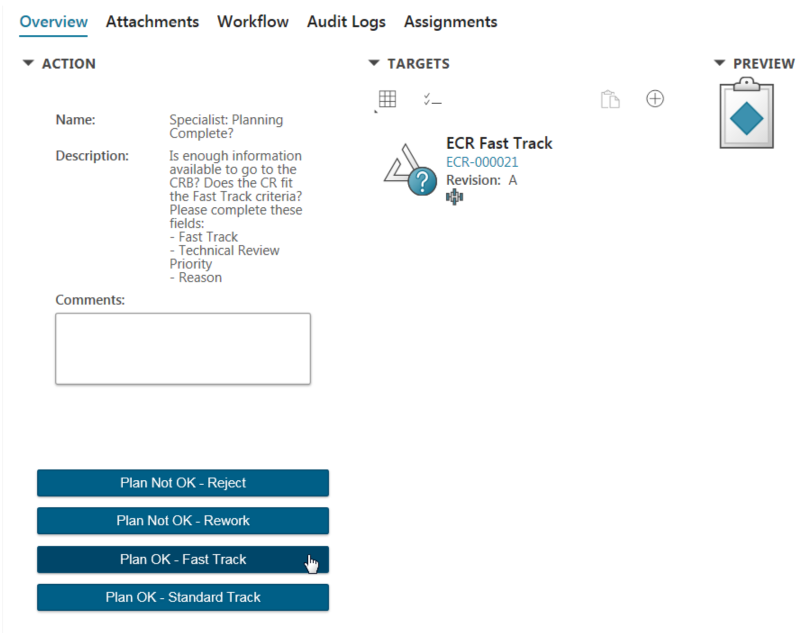
4. Click **Save**.

Enable Fast Track during workflow processing

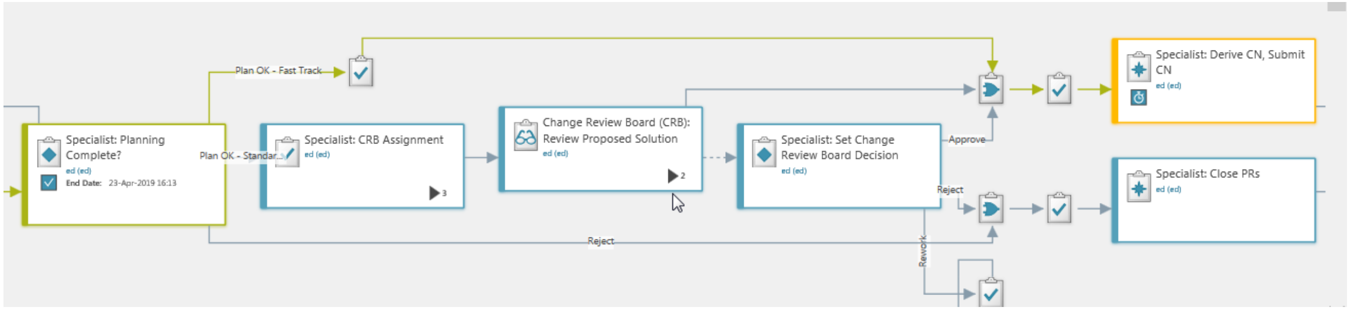
If an change notice was not derived from an change request, or if the change request did not have **Fast Track** enabled, **Fast Track** can be applied during the workflow process or as part of a custom workflow template.

Enabling **Fast Track** on a change request or change notice during workflow is built into the workflow templates for both change requests and change notices.

If a change request or change notice was sent to workflow, during the task **Specialist Planning Complete?** you can select **Plan OK - Fast Track**.



The result is shown in Workflow Viewer.

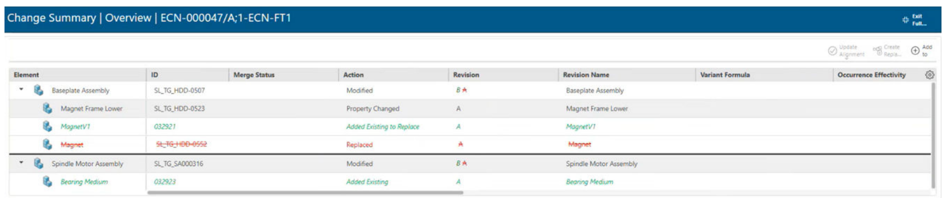


Change Summary

Change summary overview

The **Change Summary** is included in the **Overview** tab of a change notice or simple change that contains **Solution Items** and revisions. Click ⛶ to view the **Change Summary** table full screen.

The change summary table provides information about the ID, name, action, revision, and quantity, and also provides visual cues in red and green for modifications and revisions.



For example, an assembly can be attached as an impacted item revision on a change notice, and that assembly is revised using **Revise Impacted** in the **Impacted Items** table. You can attach impacted and solution items and then select the solution item and relate it to the impacted item.

The **Change Summary** table is displayed if one of these operations occurs:

- Set lineage on a solution item.
- Perform **Revise Impacted** on an impacted item.
- Create, remove, change quantity or effectivity dates (BOM changes).

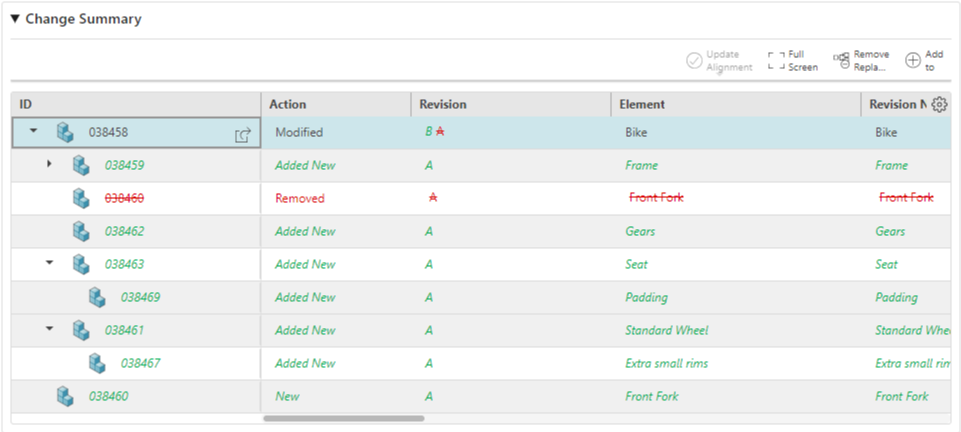
> Note:
>
> Your administrator can modify the preference **CM_bomline_tracked_properties** to define BOMLine properties for tracking.

Depending on your organization, different column headings may appear. **ID** and **Name**, however, are always displayed.

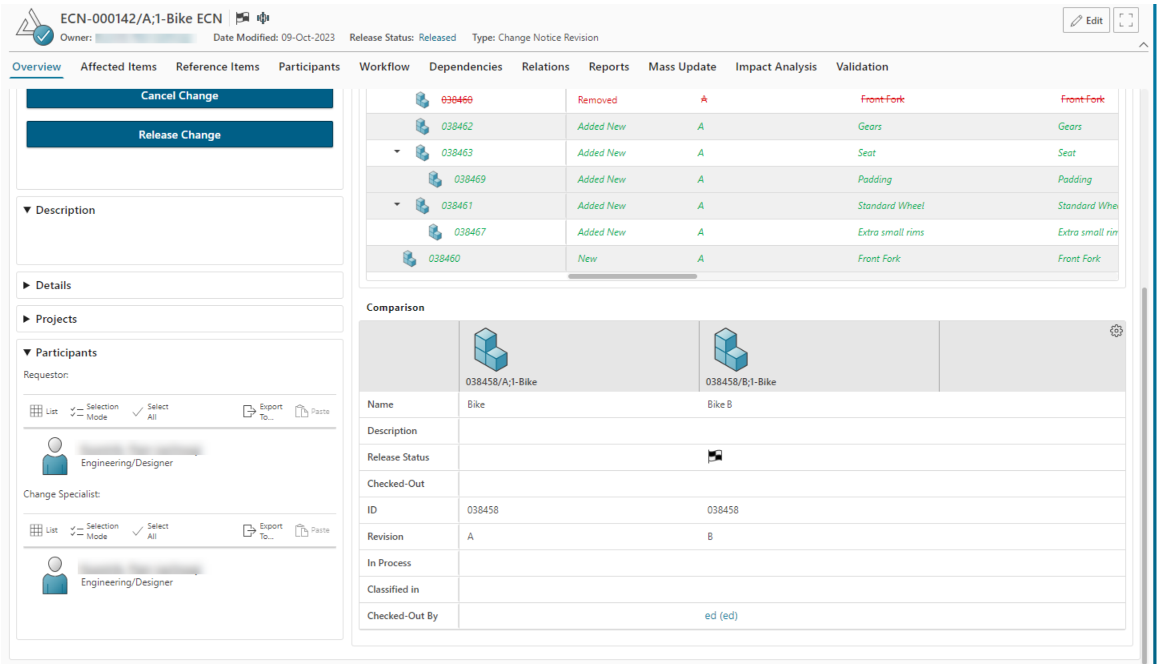
If you select one or more items in the **Impacted Items** table, the Change Summary displays those changes.

Compare item revisions in the change summary

Solution items that are revisions and contain a lineage to impacted items can be compared in the **Change Summary**.



1. Select a solution item from the **Change Summary** table to view a comparison of the properties between the **Impacted Item** and the **Solution Item**.

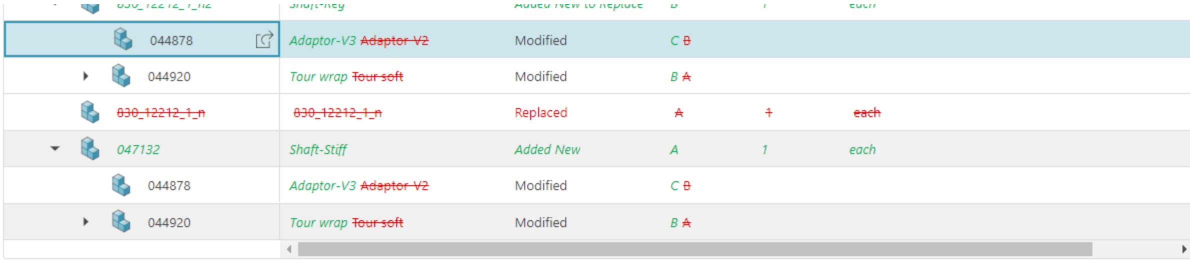


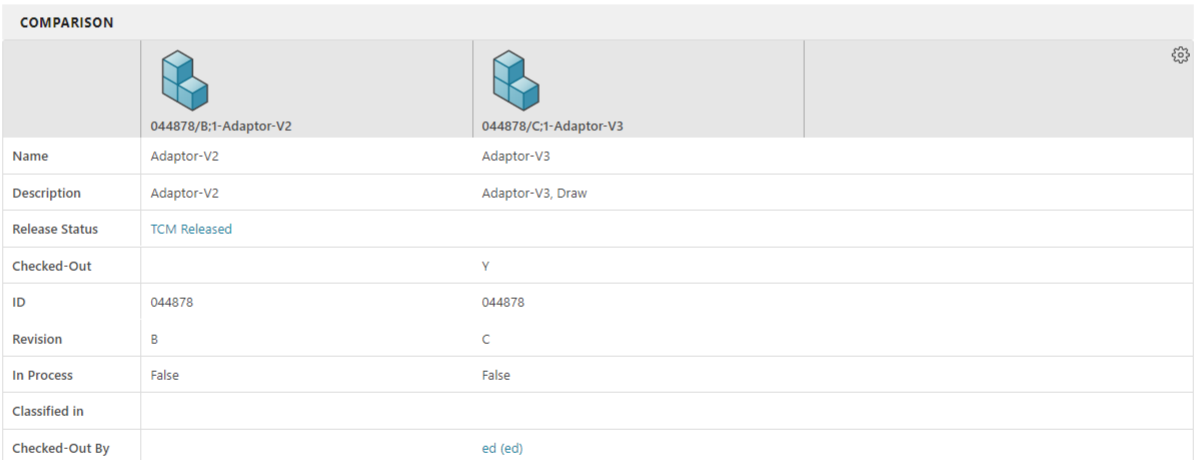
2. Expand assemblies to compare the properties of individual structure components.

   Refer to **Customize your change summary or comparison view** to select or customize the display.

   The **Action** column displays whether the solution item was added, modified, or replaced.

   Components that were replaced show both the original and the replacement in the summary. Selecting either the original or the replacement component shows the comparison.



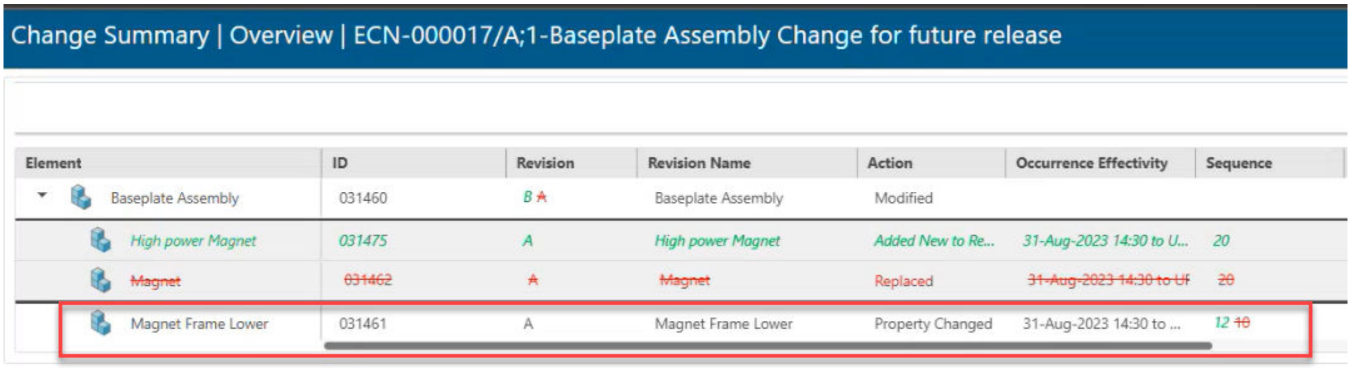


How release effectivity displays in the Change Summary

While defining a product managed with occurrence effectivity, the effectivity decisions often evolve as the product content itself is developed. The design engineer makes decisions for effectivity ranges when additional or replacement parts are included in an assembly BOM in the context of an ECN. Sometimes these effectivity dates ranges can overlap partially (a split), or have the same effectivity date range that overlaps entirely (a complete overlap).

Effectivity ranges differ in appearance in the Change Summary when updates are made to a BOM item in the context of an ECN.

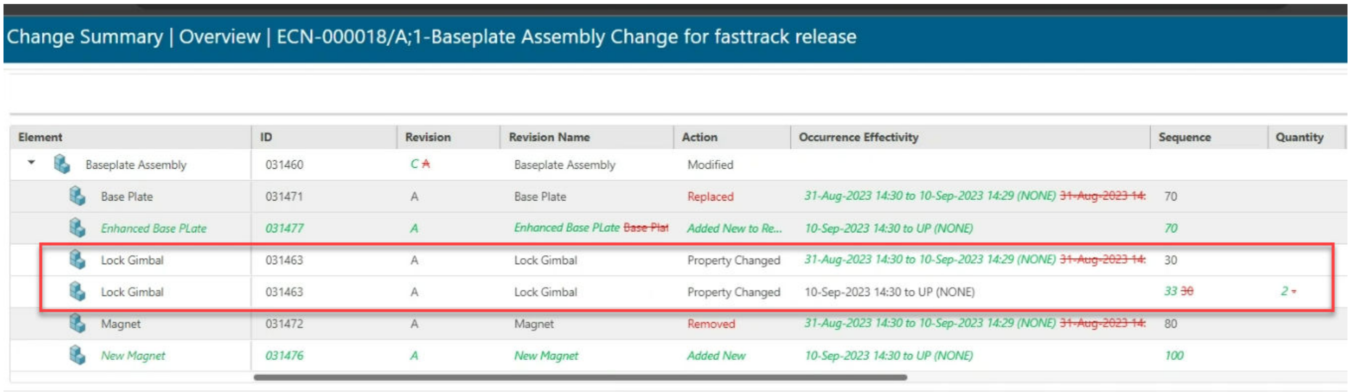
Complete overlaps of effectivity are represented in the Change Summary on a single line. Here, a sequence change was made to the **Magnet Frame Lower** part to include overlapped (the same) effectivity dates. Since there is no effectivity change for the item in the context of the ECN, the sequence change is displayed on one line.



Change Summary | Overview | ECN-000017/A;1-Baseplate Assembly Change for future release

Element	ID	Revision	Revision Name	Action	Occurrence Effectivity	Sequence
Baseplate Assembly	031460	B ~~A~~	Baseplate Assembly	Modified		
High power Magnet	031475	A	High power Magnet	Added New to Re...	31-Aug-2023 14:30 to U...	20
~~Magnet~~	~~031462~~	~~A~~	~~Magnet~~	Replaced	~~31-Aug-2023 14:30 to UF~~	~~20~~
Magnet Frame Lower	031461	A	Magnet Frame Lower	Property Changed	31-Aug-2023 14:30 to ...	12 ~~10~~

When there is no complete overlap and modifications are made to an assembly that results in a split or cutback effectivity in the context of an ECN, two lines display the changes in the Change Summary. Here, a sequence change was made to a Lock Gimbal, which is indicated by the two lines displaying the different effectivity dates.



Change Summary | Overview | ECN-000018/A;1-Baseplate Assembly Change for fasttrack release

Element	ID	Revision	Revision Name	Action	Occurrence Effectivity	Sequence	Quantity
Baseplate Assembly	031460	C ~~A~~	Baseplate Assembly	Modified			
Base Plate	031471	A	Base Plate	Replaced	31-Aug-2023 14:30 to 10-Sep-2023 14:29 (NONE) ~~31-Aug-2023 14:~~	70	
Enhanced Base PLate	031477	A	Enhanced Base PLate ~~Base Plat~~	Added New to Re...	10-Sep-2023 14:30 to UP (NONE)	70	
Lock Gimbal	031463	A	Lock Gimbal	Property Changed	31-Aug-2023 14:30 to 10-Sep-2023 14:29 (NONE) ~~31-Aug-2023 14:~~	30	
Lock Gimbal	031463	A	Lock Gimbal	Property Changed	10-Sep-2023 14:30 to UP (NONE)	33 ~~30~~	2
Magnet	031472	A	Magnet	Removed	31-Aug-2023 14:30 to 10-Sep-2023 14:29 (NONE) ~~31-Aug-2023 14:~~	80	
New Magnet	031476	A	New Magnet	Added New	10-Sep-2023 14:30 to UP (NONE)	100	

Customize your change summary or comparison view

You can configure the **Change Summary** table or the **Comparison** table to hide or display columns or to rearrange columns.

The default column name order is **ID, NAME, Action, Revision,** and **Quantity**.

> Note:
>
> You cannot change the position of the **ID** column, but the other columns can be moved to suit your working preferences.
>
> Additionally, you cannot hide the **Name** column, but you can change its position.

1. From the **Overview** of a Change Notice Revision, click **Settings** ⚙ to open the **Arrange** panel.

   The **Arrange** panel for the **Comparison** table has a similar list of options as the **Change Summary**.

2. Select a column name to rearrange. You can change the column order by clicking to move up or to move down.

3. Click to reset the list to the default configuration.

4. To add or remove column headings, select a name in the appropriate column and click **Add** or **Remove**.

5. (Optional) Select **Save as new arrangement**. Enter a unique name and click **Save and Arrange**.

   (Optional) You can use a previously created column arrangement by clicking **Column Arrangements** and selecting a saved arrangement from the list.

6. Click **Arrange** to apply your changes.

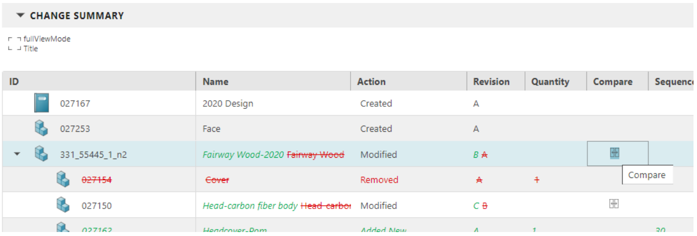
> Note:
>
> Untracked properties can be added by your administrator using the **ChangeSummaryTableColumns** site preference. It defines the column names to be displayed. There are three types of values:
>
> - **Type:TYPE_NAME,Property:PROPERTY_NAME,Width:PIXEL_WIDTH**
>
>   In this case, the system reads the property name for the column from **PROPERTY_NAME** and displays the name for the column based on the owning type, **TYPE_NAME**.
>
>   Example:**Type:WorkspaceObject,Property:object_name,Width:200**
>
> - **Type:Key,Property:KEYNAME,Width:PIXEL_WIDTH**
>
>   In this case, the system searches for the preference **ChangeSummaryTableColumns_KEYNAME** to retrieve source property names for the column.
>
>   Example: **Type:Key,Property:ID,Width:150**
>
> - **TYPE:NoType, Property:action,Width:PIXEL_WIDTH**
>
>   Entry displays the **Action** column in the **Change Summary Table**.
>
>   Example: **Type:NoType,Property:action,Width:150**

Compare modifications in a change summary

You can compare assemblies with revisions from the **Change Summary** table.

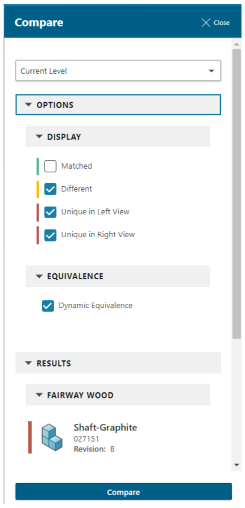
1. Open an change notice.

   Go to the **Overview** tab to view the change summary.



2. Click **Compare** on any modified assembly.

   The comparison window opens, showing the different revisions and the **Compare** panel.



3. Select the different levels for comparison in the list, and expand the **Options** section to view and change the options to compare.

4. Click **Compare** to run the comparison.

   The time taken for the comparison depends on the size of the assembly and the levels and options selected in the **Compare** panel.

   An alert appears when the comparison is complete.

View 4G data for a change

4G data can be viewed for a change. In the following example, the change summary shows the structure that is part of the change. The reuse design element is the solution for the change. Note, however, that subordinate design elements do not appear. The underlying assembly and components are the solution items for the change notice.

ID	NAME	ACTION	REV	QTY
OPY079282	shifter assembly	Modify	002:1 ~~001:1~~	1
OPJ90319_002	shifter assembly	Modify	002:1 ~~001:1~~	1
017750	shifter mechanism	Modify	002:1 ~~001:1~~	1
007385	fastener	Qty Change	001:1	3 ~~4~~
017753	shifter reverse lever	Modify	002:1 ~~001:1~~	1
~~017754~~	~~shifter reverse rod attachment~~	Remove	~~001:1~~	~~1~~
017765	shifter shaft short throw	Replace	001:1	1
~~017755~~	~~shifter shaft long throw~~		~~001:1~~	~~1~~
007386	shifter knob	Create	001:1	1
OPY079475	another assembly	Modify	002:1 ~~001:1~~	1
OPY079486	single part reuse bracket	Modify	002:1 ~~001:1~~	1
017768	bracket	Modify	002:1 ~~001:1~~	1

Track Engineering BOM effectivity cutbacks in the Change Summary

When you introduce a new part to replace an existing part in an Engineering BOM structure and change its effectivity range, that modification is called an *effectivity cutback*. You reduce (or cut back) the effectivity range of the original part so that it does not overlap with the effectivity of the new, or replacing, part.

When a user opens a change notice for the BOM and updates its effectivity after the usages or parts are released, the Change Summary in the **Overview** tab shows the modifications made (via redlines) in the context of the change notice.

For example, an engineer has a released BOM and wants to set the configuration of the BOM window to the change notice effectivity date. The engineer inserts a new level within the BOM structure, and this new part (solution item) inherits its element effectivity from the active change notice. To avoid an effectivity conflict between the impacted item and solution item, the effectivity of the impacted item is cut back to end before the solution item becomes effective.

Here, modifications made to both the existing part (the impacted item: **Glass** in this example) and the new part (the solution item: **Insert Level for Glass**) are shown in the Change Summary structure. The **Occurrence Effectivity** column shows the effectivity dates for both the old and new occurrence.

CHANGE SUMMARY

ID	Name	Action	Occurrence Effectivity	Usage Name	Usage Revisi
029892	Insert Level for Glass	New			
029891	Glass	Added Existing	01-May-2022 00:00 to UP (NONE)	Glass	A
029889	RH Mirror				
029891	Glass	Removed	01-Feb-2022 00:00 to 30-Apr-2022 23:59 (NONE) ~~01-Feb-2022 00:00 to UP (NONE)~~	Glass	B ~~A~~
029892	Insert Level for Glass	Added New	01-May-2022 00:00 to UP (NONE)	Insert Level for Gl...	A

Along with showing the effectivity cutbacks for a structure when a level is added, the Change Summary also identifies these split occurrences when a BOM engineer:

- Removes a level in a structure
- Adds a level in a structure
- Adds a child or sibling structure component
- Removes a structure component
- Replaces a structure component
- Move a usage/occurrence using drag and drop within same BOM structure
- Edits the properties of a part or an assembly: sequence, quantity, occurrence name, all notes, or custom property
- Adds a copy of the existing objects to a structure
- Copies and pastes a component within a structure

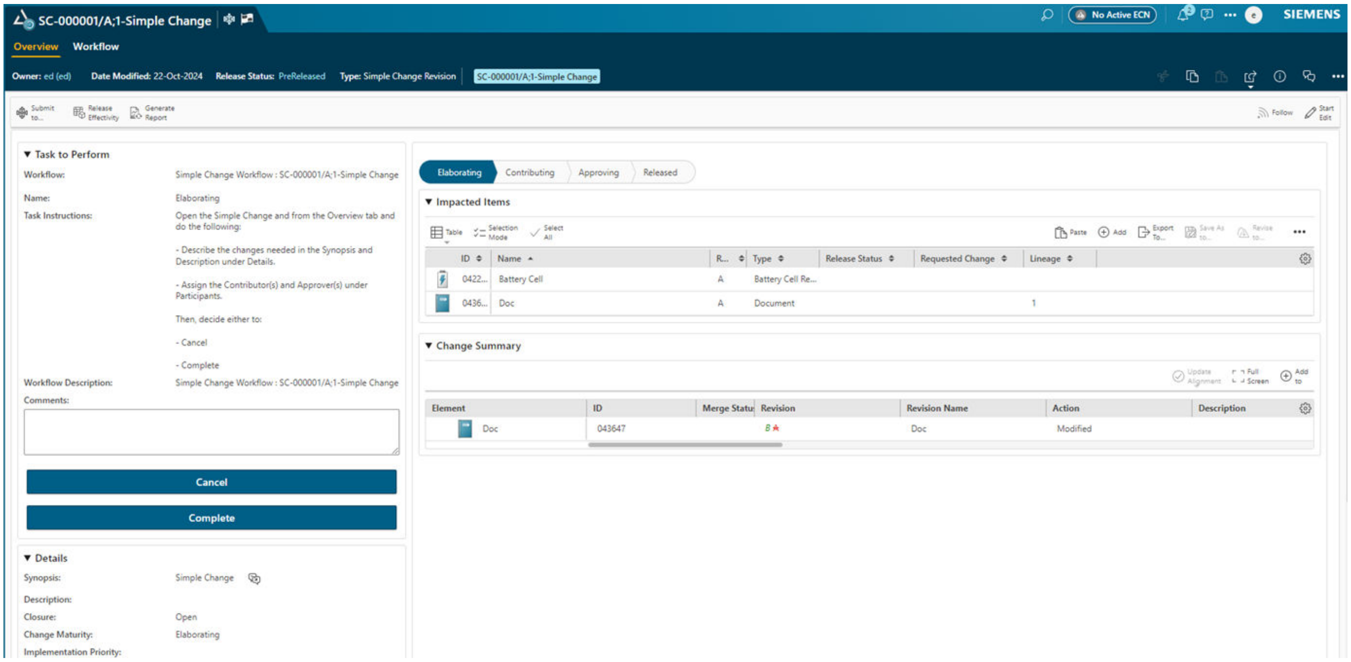
All of these changes are represented in the Change Summary for the change notice.

Create a Simple Change

Introduction to Simple Change

Simple change simplifies the process for creating and performing change revisions. It is designed for situations that do not require the detailed features of a change notice or detailed workflows.

Simple change  is a subtype of a change notice.



> Example:
>
> *Simple change* is intended for minor changes handled by a single change analyst or a small team.
>
> A change analyst is tasked with a minor change to a part. Instead of managing the change using a standard, elaborate change notice, the team uses *simple change* to streamline the process.

Simple change uses a simplified workflow, reducing the number of steps to release a change. Unlike a standard change notice where the change is created separately from the workflow process, a *simple change* is submitted automatically to the workflow.

When you revise an impacted item, it is automatically added to the Change Summary as a solution.

States of a simple change

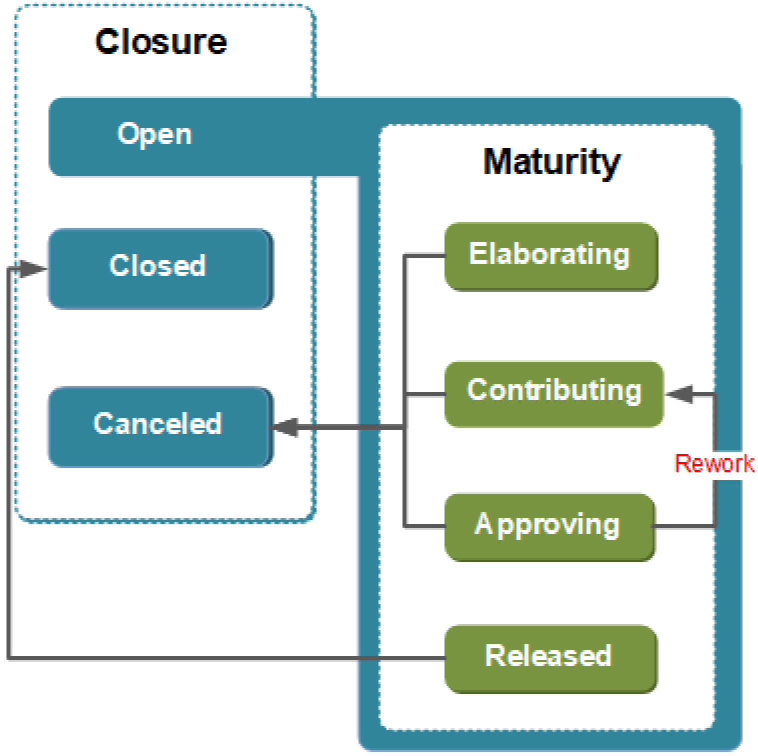
A change has two key states that capture where in the change process it is and what decisions have been made about the change.

- Its status or *Closure* (for example, Open or Canceled).
- The degree of completion of the overall change process, that is, its *Maturity*.

The change states interact with each other and are dependent on the other change states. For example, *Maturity* is a substate of the *Closure* state. The states of a change are set during the workflow process.

> Tip:
>
> You can view the states of a change in the **Overview** tab.

The following graphic illustrates the simple change states. For detailed information on change states, see *Change Management —Deployment and Rich Client Usage* in the Teamcenter help.



Create and resolve a simple change

Create a simple change

Use simple change as an alternative for making minor changes in smaller teams or organizations.

Procedure

1. Select an object and go to **More Commands** ••• > **New** > **Create Change**. Select **Simple Change** from the list.

   Alternatively, click the **Changes** tile, click **Create Change** from the top toolbar, then select **Simple Change**.

2. Fill in the required information and click **Create and Submit**.

   The change is created and automatically submitted to the simple change workflow.

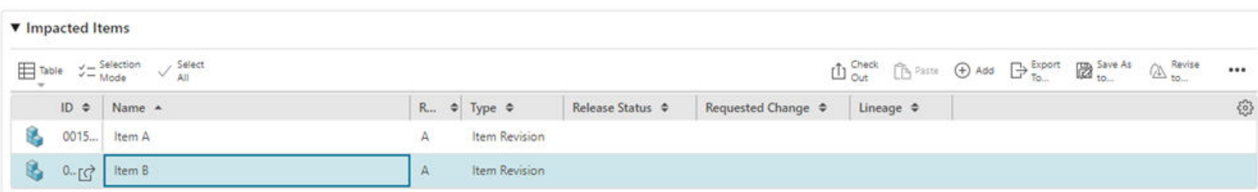
Add and revise impacted items

When you start a simple change process from an object, the object is automatically added as an **Impacted Item**.

Procedure

1. Open the simple change and in the **Impacted Items** section, click **Add** ⊕.
2. Select an object and click **Add** ⊕.

   Repeat as necessary.
3. (Optional) Select an object from your folders.
   a. Go to **More Commands** ••• > **Manage** > **Add to My Changes**.
   b. Select a simple change from the list of changes, choose **Impacted Items** from the **Relation** list, and click **Add**.
4. Select any object in the **Impacted Items** table and click **Revise to Solution**.



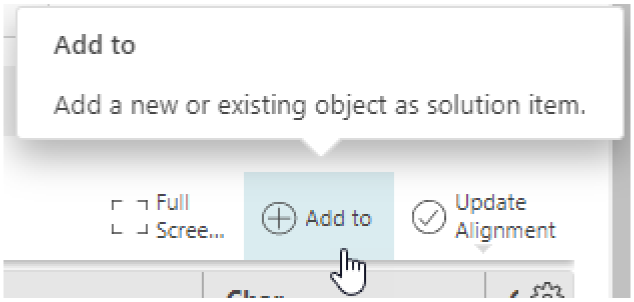
Add solution items

When you revise an impacted item, the new revision becomes the solution item for the same simple change.

Procedure

1. Revise any impacted items to create a solution item in the **Change Summary**.

   The relationship between an impacted item and a solution is identified by the **Lineage** column. For more information regarding lineage, refer to the Change lineage section.
2. Click **Add to** ⊕ to add a solution item that is not a revision of an impacted item.



Completing simple change tasks

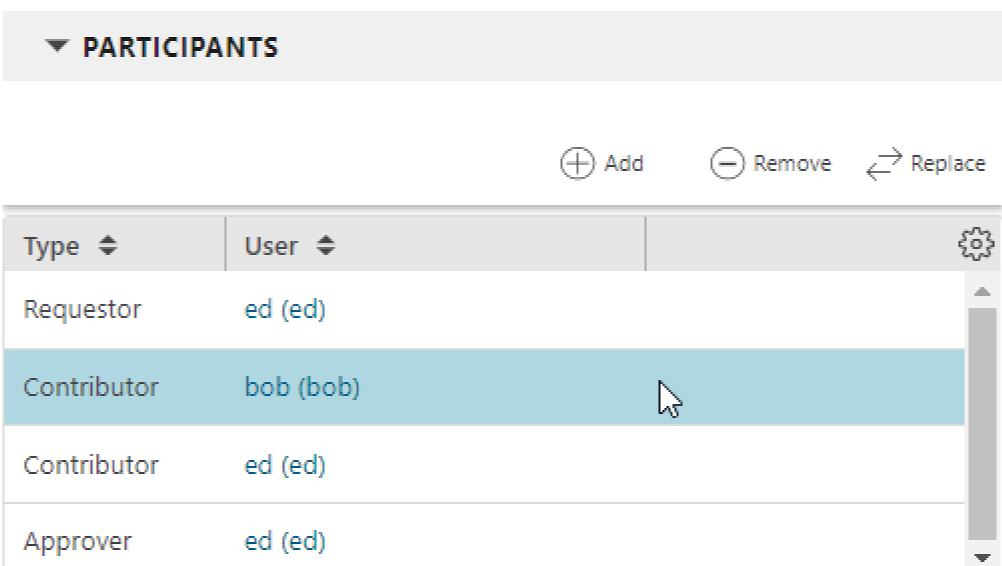
If a task is assigned to you as part of the change workflow, you can access the task and mark its completion from your inbox.

If you are an authorized user, you can complete the tasks from the *simple change* **Overview** in **Change Manager**.

Completed tasks are displayed with the status **Released** in the progress bar.

Manage the participants in a Simple Change

The **Overview** tab contains a **Participants** section to manage the participants of a *Simple change*.



Simple change consists of three types of change participants.

- **Requestor**

- **Contributor**
- **Approver**

Tasks are automatically sent to the assigned participant's inbox. You can add participants (as contributors and approvers). You can also replace and remove participants.

For more information on change participants refer to **Who are the participants in a change**?

Coordinating multi-site changes

Authoring changes at multiple sites

Change Management provides a centralized system that streamlines the process of implementing changes across multiple sites. This process uses a master change at a central (or engineering/EBOM) site, which creates and submits subordinate changes to a distributed (or remote, or DBOM) design site through automated workflow handlers. Design engineers then act on the design data subset owned by their respective remote sites and sync back their modifications to the central site when complete.

This orchestration of the engineering tasks from the central EBOM site with the design work at the remote sites can help greatly with collaboration and project management. Steps are organized using a workflow template created by the central site. This template includes tasks that utilize the CM-create-multisite-change-notice-objects and CM-transfer-multisite-parent-structure workflow handlers.

This introduction will guide you through the key aspects of coordinating change notices to achieve efficient execution across multiple locations.

Orchestrate change notices across multiple locations

Orchestrating the engineering tasks and design work across multiple locations is performed through a workflow template with tasks that include specific Change Management handlers.

A master change at a central (or engineering) site triggers these handlers to create and submit subordinate changes to remote design sites. Design engineers work on their assigned data subsets and synchronize their modifications back to the central site upon completion.

The key aspects of coordinating change notices across multiple locations are as follows.

Part 1: Central site tasks

An engineer at the central site performs the following tasks.

1. **Create and assign the change notice**

Create a change notice and **add participants** for an engineering bill of materials (EBOM). This change notice is created using a workflow template with the CM-create-multisite-change-notice-objects and CM-transfer-multisite-parent-structure workflow handlers and set as an **active change**.

2. **Create the EBOM**

   Add new usages to the new or existing EBOM within the context of the change notice. The **Change Summary** tracks all of the modifications and their respective usages as solution items.

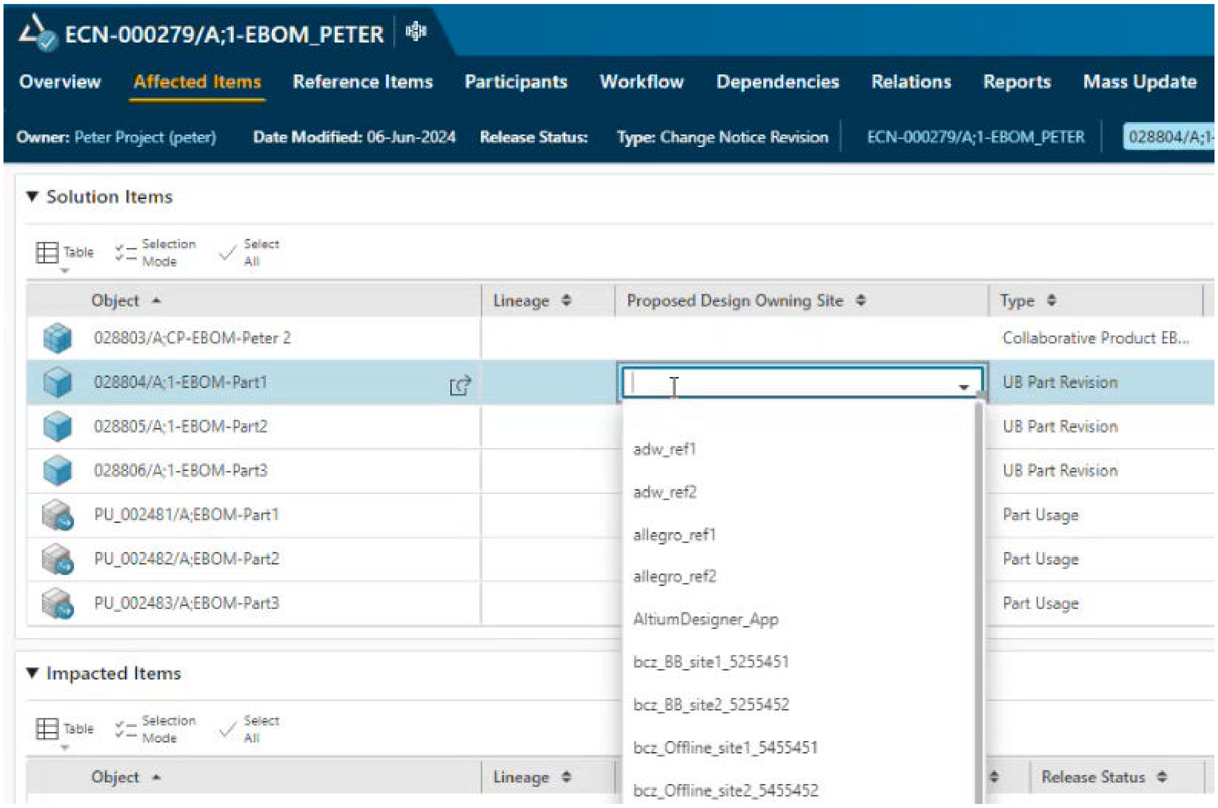
   See the Engineering BOM Management-Usage guide for more information about creating BOM assemblies.

3. **Assign the solution items to remote sites**

   Now that the EBOM is assembled, you can assign the solution items to the remote (or design) site.

   a. In the change notice, click the **Affected Items** tab.

   b. In the **Proposed Design Owning Site** column, use the drop-down list to select the remote site for the solution item components.

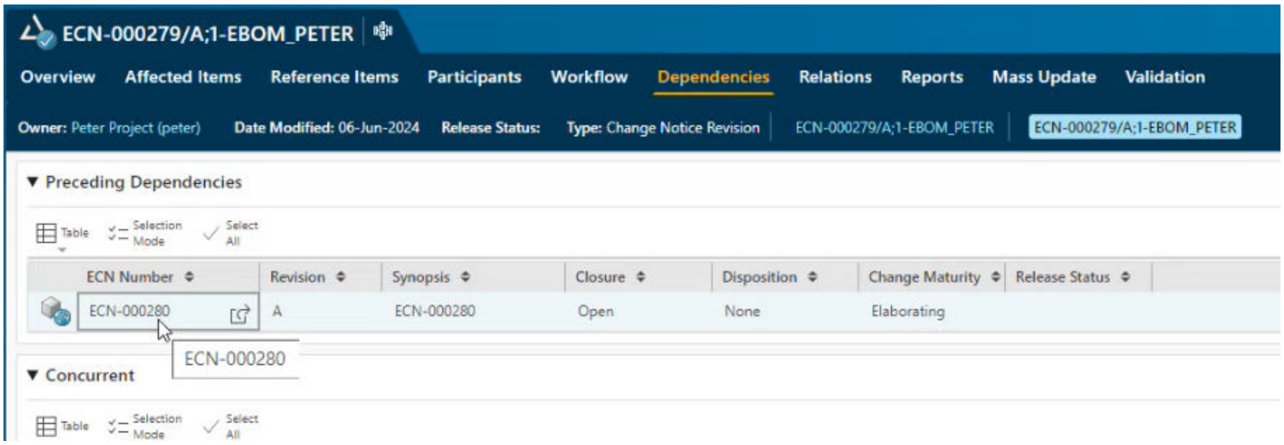


   Site assignments are then used to push dependent change notices to the remote sites via the a task using the CM-transfer-multisite-parent-structure handler.

4. **Automated dependency**

Once assignments have been made, the central site creates a new DBOM change notice and establishes a dependency between the master EBOM and DBOM change notices. The system replicates the EBOM change notice items to the respective DBOM change notice and transfers ownership of these changes to the users at the remote sites via the CM-create-multisite-change-notice-objects and CM-transfer-multisite-parent-structure workflow handlers.

The dependency between the EBOM and DBOM changes is visible on the **Dependencies** tab.



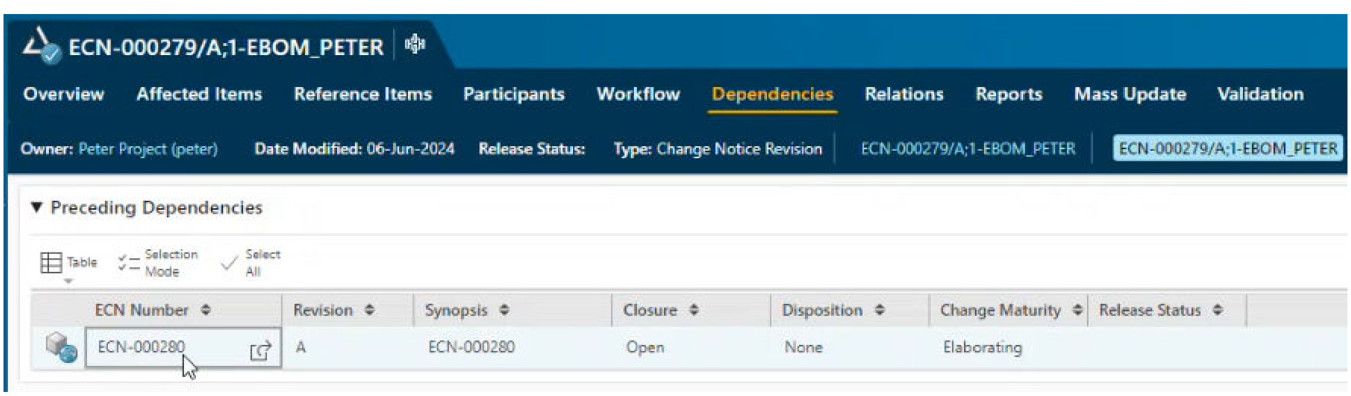
Designers can then start claiming and reviewing those DBOM changes at their remote sites.

The workflow using the two handlers will wait to continue at the engineering site until all subordinate DBOM change notices are released.

Part 2: Remote Site tasks

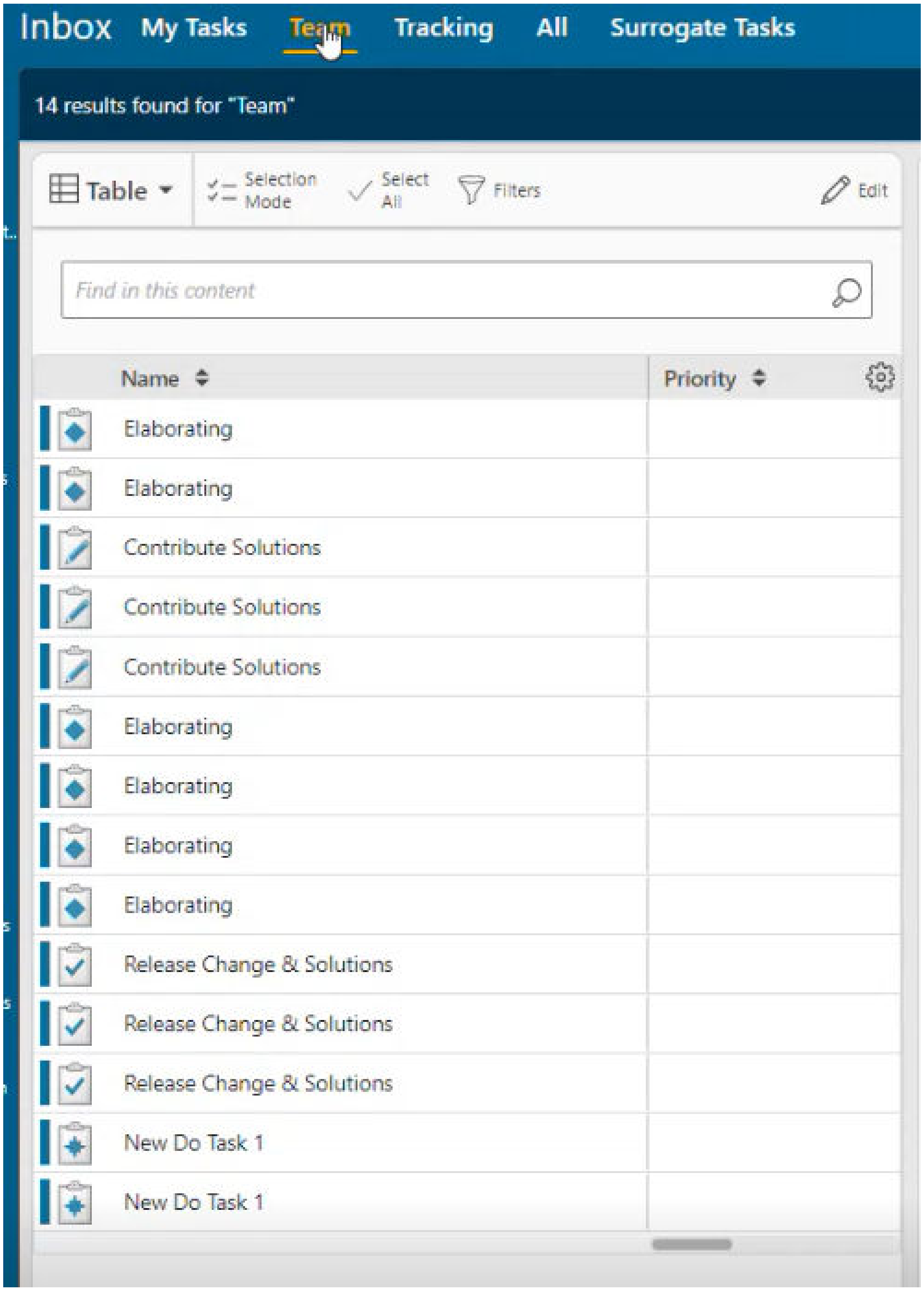
At the remote site, the system replicates the EBOM Change Notice items to the respective DBOM change notice.

When the designer opens the change notice and clicks the **Dependencies** tab, the change notice created specifically for the remote site is listed.



A designer at the remote site performs the following tasks.

1. The Inbox contains one team task that lists all the subtasks required of the change notice. Claim a task once it is in the Inbox.



Once the change noticed is opened, all of the solution items that came from the engineering site are included in the designer's **Impacted Items** automatically.

2. Update the DBOM within the context of the change notice.

3. Align the DBOM with the EBOM.

4. Perform a part CAD alignment.

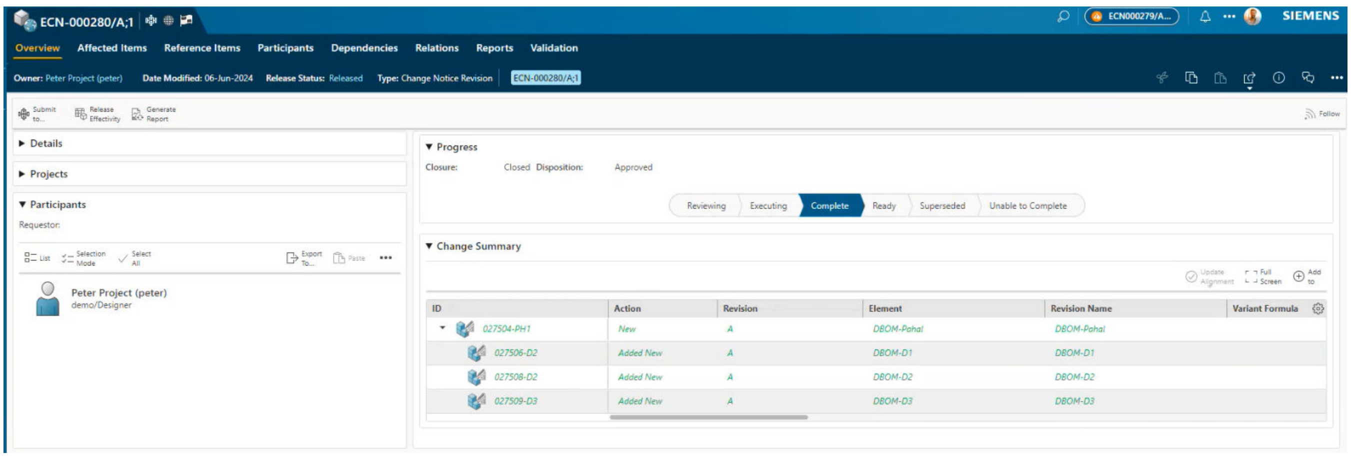
5. Once the components are aligned, release the DBOM change notice.

   All data created from the DBOM at the remote site is then synchronized automatically back to the central site.

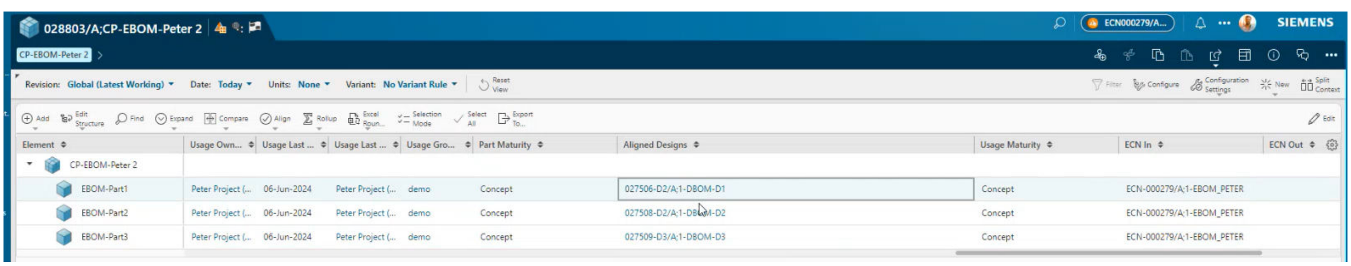
Part 3: Back at the central site

Once the remote engineer releases the DBOM change notice data and it is automatically synchronized back at the central site, the change progress shows as **Complete**.

All of the solutions that the remote site added in the DBOM change notice can be seen on the **Dependencies** tab's **Change Summary**.



If you open the EBOM structure, you can view the alignments with the corresponding design in the **Aligned Designs** column.



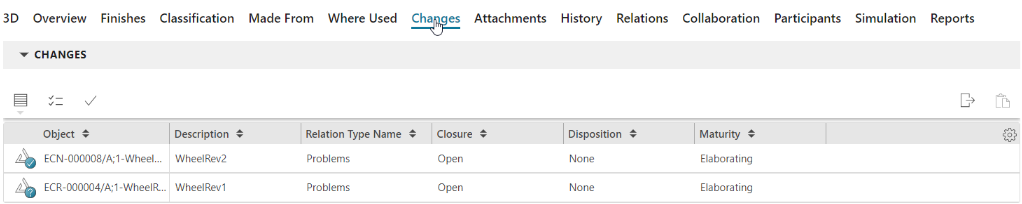
Now the EBOM Change Notice can be released.

4. Viewing changes

View your changes

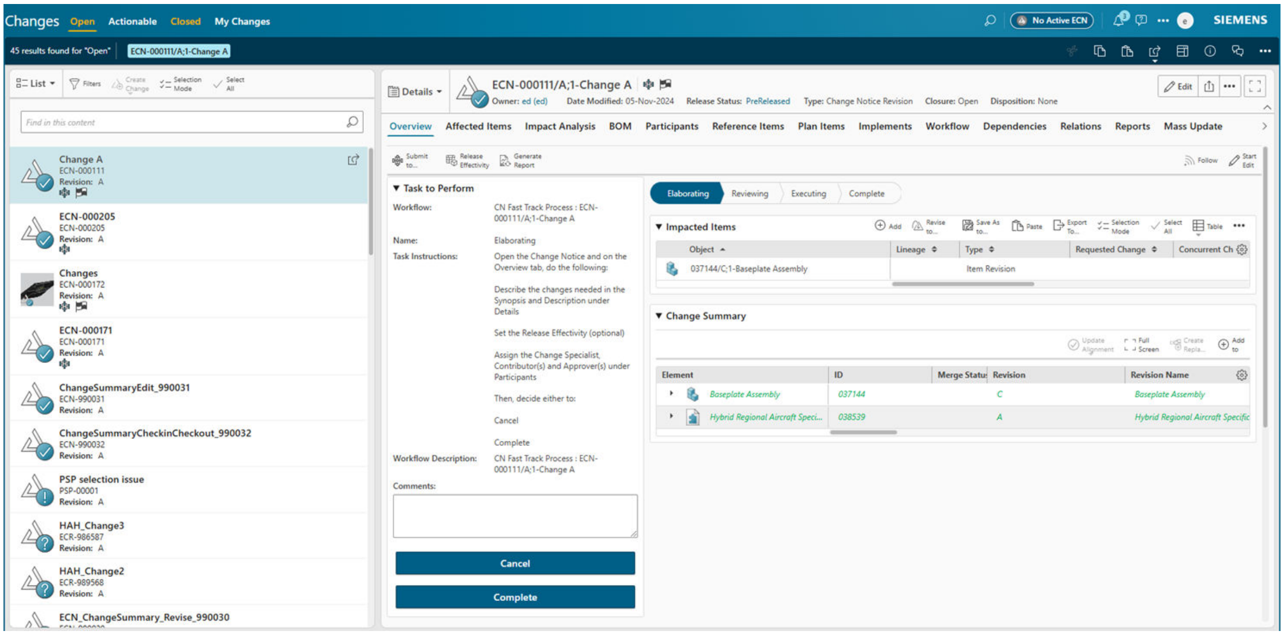
You can view all changes and see their various states on the **Changes** page or the **Changes** tab on applicable objects. For example, you can view the completion of prior tasks, the current task, and pending decisions for the current task's associated workflow.

If an object has multiple changes, the changes are listed chronologically, with sortable columns.



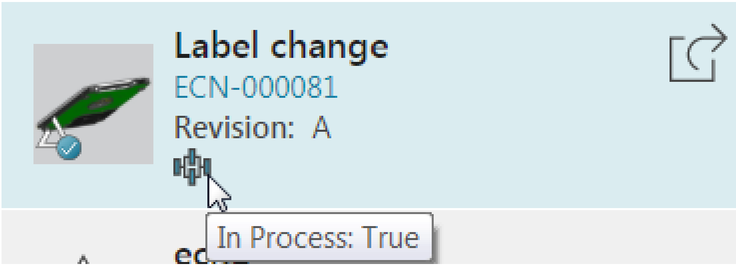
1. To view all changes, click **Changes** △.

   Select a change and use the navigation tabs along the top to see the information associated with the change.

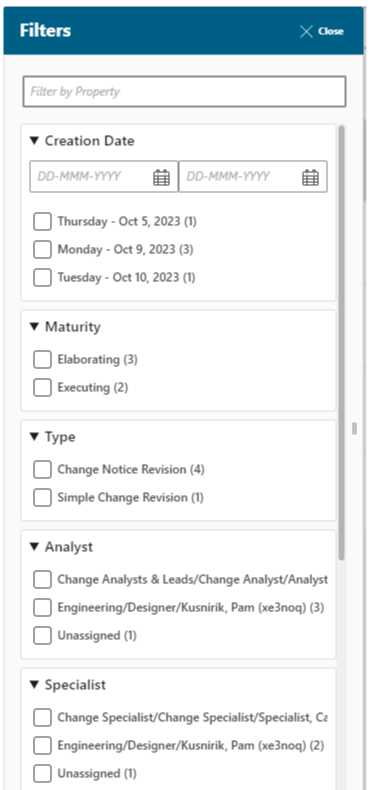
   Navigation tabs along the top show the state of the different changes where you are the owning user. If you do not select a specific change item, a bar chart appears.

   Changes submitted to workflow are identified by an in-process indicator.



2. Select **Filter** to open the **Filters** panel.

   Select one or more filter categories. Selected items are identified with a check mark. Results are automatically displayed.



3. Review the tabs.

   Overview

   The **Overview** tab provides comprehensive information about the change.

   A visual status bar indicates where the change is in its process.

   This example shows four standard maturity values, and two additional custom values.

The details under the change notice name display the value of the most relevant properties.

The **Tasks to Perform** section contains active tasks for the assigned user. The assigned user can perform these tasks without navigating to the inbox. This section automatically reflects the current active tasks.

The **Details** section provides comprehensive information about the change being proposed or implemented.

If applicable, the project details are listed under the **Projects** section.

The **Participants** section lists the users directly involved in processing the change.

The **Impacted Items** section lists specific items that will be affected by the proposed change.

The **Change Summary** section displays BOM edits. Additional references are provided for less mature change objects from which this change was derived (implements) or more mature change objects derived from this one (implemented by).

Affected Items

The **Affected Items** tab shows objects impacted by the change. They include:

- The object identified as having a problem.
- Those objects that are being changed (impacted) as a result of the change process.
- (Change notice or change request only) Schedules or plan items to manage the change process.
- (Change request only) Changes that implemented the identified problem as well as all the solutions of the current change notices in the **Solution** column of the **Implemented By** table.

Impact Analysis

The **Impacted Items** table appears in the **Overview, Affected Items**, and **Impact Analysis** tabs.

Participants

The **Participants** tab includes members who participate in the review and execution of the change.

Reference Items

The **Reference Items** tab includes objects supporting the investigation of the change. By default, when you create an change in the context of an object, the object is placed in the **Reference Items** tab.

Workflow

The **Workflow** tab shows the workflow associated with the change and its current status, if any.

Dependencies

The **Dependencies** tab allows you to order and sequence change notices with respect to each other across change requests, by designating a change notice as before, after, or concurrent with respect to another change notice. There are three dependency types: **Preceding**, **Concurrent**, and **Succeeding**.

Relations

View the relations link to the change in the **Relations** tab, such as attachments or reference documents and network of related data.

By default, the change and its problem item appear.

Reports

You can generate and view reports for change objects using the **Reports** tab, depending on the configuration of your organization.

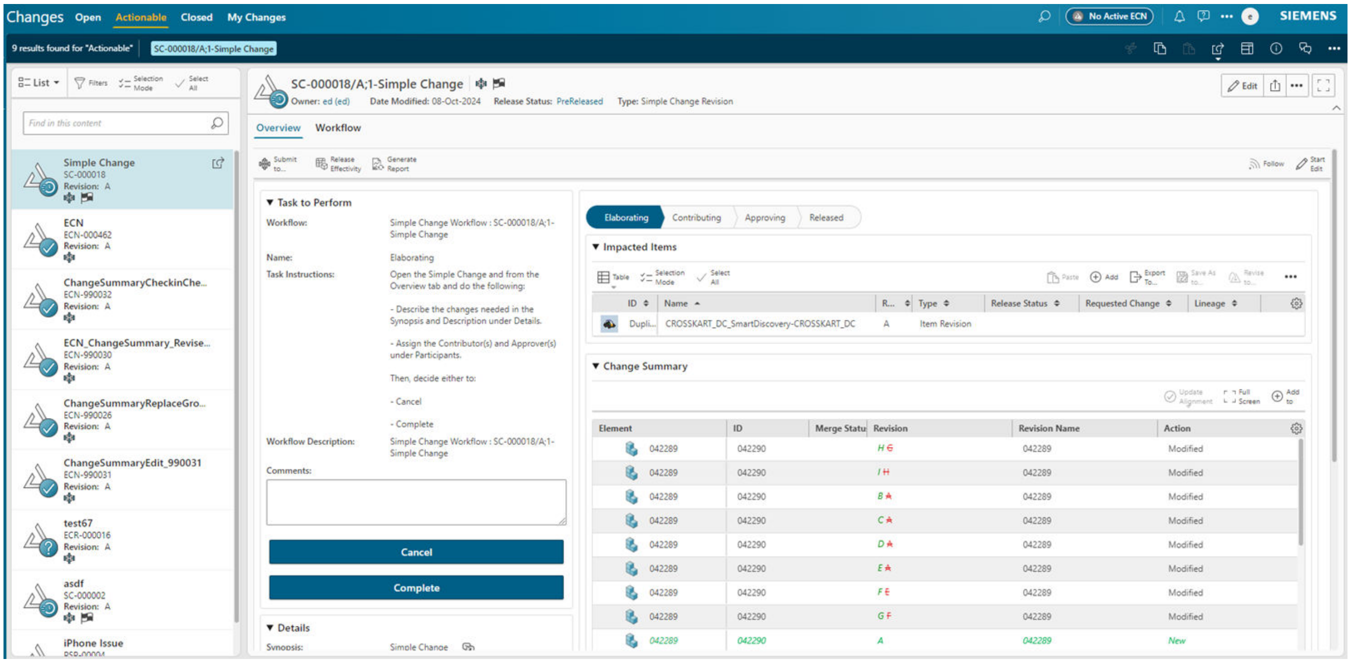
View and perform tasks using the Actionable tab

Actionable tab

The **Actionable** tab consolidates all the changes with active tasks assigned to the current user.

Similar to the **Open** tab in **Changes**, the **Actionable** tab provides the full change summary of a selected change with any assigned actions in the **Overview** section. This eliminates the need to navigate to the inbox to perform tasks.

When you complete a task, the **Overview** updates with the next active task.



Perform assigned tasks using the Actionable tab

1. Click **Changes** △, and select the **Actionable** tab.

   All changes with tasks assigned to the user are listed.

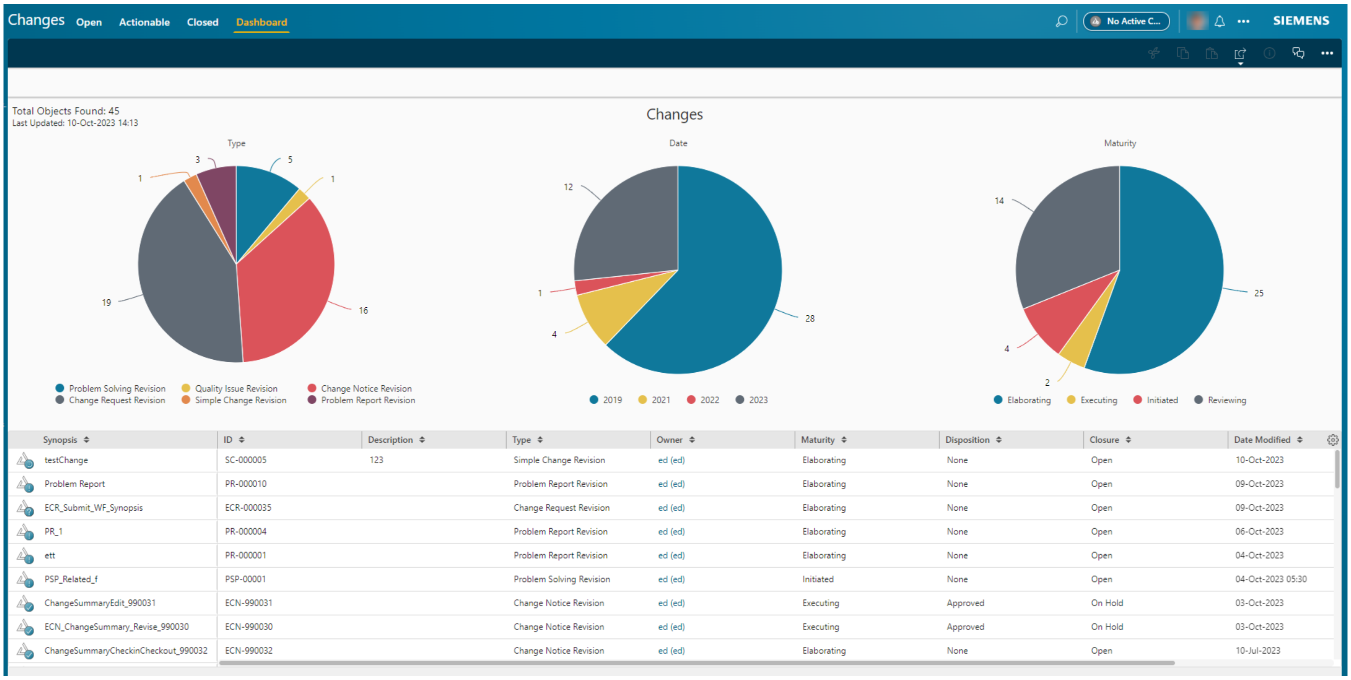
2. Select a change from the list. The **Action** section lists the current task assigned to the user.

3. Perform the task according to the details and instructions listed.

   The **Action** section is updated with the next task in the workflow.

View changes using the Changes Dashboard

The **Changes Dashboard** organizes and displays all change information in a pie chart and tabular interface that is filterable and sortable.



1. Click **Changes** ⚠ > **Dashboard** tab.

   The dashboard displays a list of all changes, their properties, and statuses.

2. Hover over each colorized segment to view more details.

   The pie charts are color coded with the type and quantities of the specific changes.

3. To filter, click one of the pie segments. Depending on the quantity, types, and roles in your organization, the pie charts contain different information and color codes.

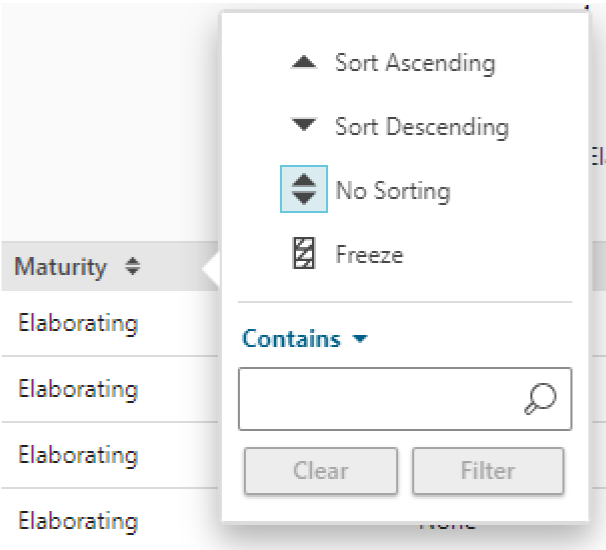
4. Click the legend below the **Type** graph to clear and remove items from the chart.

   Cleared items are grayed out. Click a grayed out item to include it in the pie chart again.

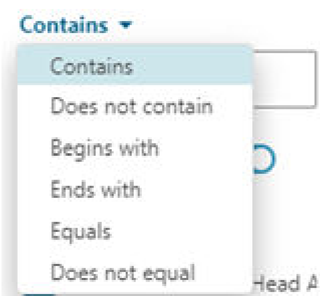
5. The table reflects the selections and filtering applied on the pie charts.

   The options available for sorting and filtering vary depending on the column selected, and your configuration.

   Click on a column heading to open the sorting and filtering panel for each column.



6. The **Search** list shows the parameters to search on specific criteria. The default value is **Contains**.



Enter your text in the **Search** box and click **Filter**.

7. Hover over the filter to see the filter criteria.

Select the column and click **Clear** to remove the filter.

View change history

Both revision and change history are available for change notice impacted or solution items and appear in the same window.

1. Open a change notice.

2. From the **Affected Items** tab, select an impacted item or solution item and open it.

3. Click **History**.

   For 4GD business objects (partitions and design elements), you can use the **History** tab to view information about all versions of the object and the corresponding change:

   - For each major revision of an object attached to a change notice, a separate row is displayed for each change notice in which it is a solution item or impacted item.
   - When a major revision of a 4G object is pasted to the impacted item folder of any change (without an associated solution item), a row is displayed in the **Change History** section with the associated authorizing change, but the **Revision** and **Solution** columns are blank.
   - Each line of the change history for an item contains values for **Closure**, **Maturity**, and **Disposition**, except for item revisions that are not impacted or solution items.
   - When a solution item revision is removed from an change notice, the revision still appears in the **Change History** section, but all columns after the **Solution** column are cleared for that revision.

View change history for an item revision

When you select to view the Incorporation status of an item in the **Change History** tab of the **Summary** tab, the **Change History** dashboard appears with the following columns.

The column	Displays
Solution Item	The ID and name of the solution item.
Impacted Item	The ID and name of the impacted item.
Markup	The name and ID of any markup.
Authorizing Change Notice	The name of the change notice revision.
Closure	The Closure of the change notice, including open, closed, cancelled, or hold.
Maturity	The Maturity of the change notice revision, including elaborating, reviewing, executing, and completion.
Disposition	The Disposition of the change notice revision, including none, investigate, disapproved, deferred, and approved.
Incorporates Changes of	IDs of the item revision or the name of the markup being incorporated by the change notice revision.
Incorporated by	The name of the incorporating change notice revision.

The column	Displays
Incorporated into	The ID of the revision the change was incorporated into.
Incorporation Status of Change	Shows the Incorporation status set on the impacted item, except if the Incorporation status is set to **Partially Incorporated**. Then, this indicates that another change notice has incorporated the change fully.

Display program relations for a change

You can view the programs and events related to an change request or change notice on the **Reference Items** tab. When the program planning template is installed, you can search and add programs, projects, and sub-projects to change requests; while change notices can be associated only to events.

To add a program:

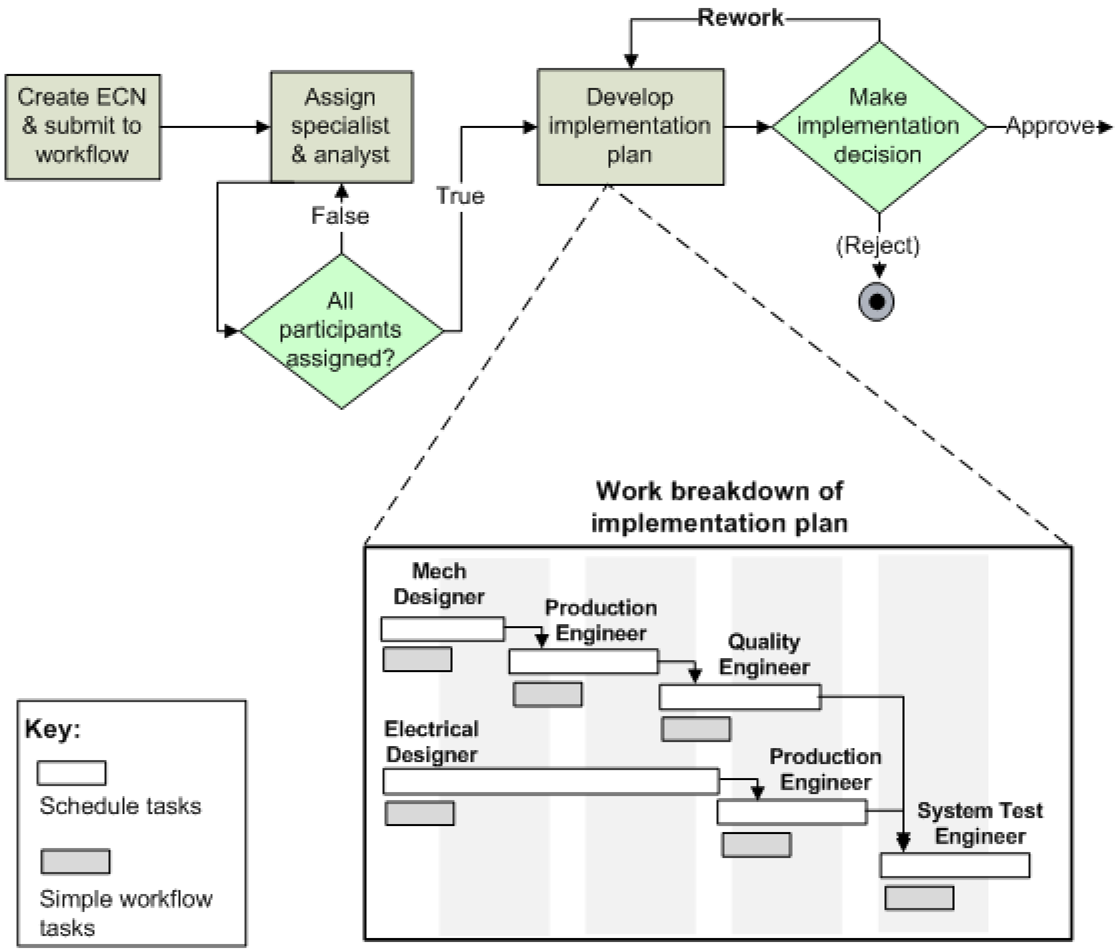
1. Click **Add to** ⊕ under **Programs**.
2. For an change request, search or select the program, project or sub-project. For a change notice, search or select the event.
3. Click **Add**.

5. Managing plan items and schedule tasks

About scheduling implementation activities

Schedule Manager is integrated into Change Manager so you can use it to schedule implementation activities (work breakdowns) associated with a change. The **Plan Items** folder stores the work breakdowns. Creating work breakdowns are useful to:

- Analyze the impact of the change to determine the amount and scope of the work required for the change. It can also identify the parts and documents impacted by the change.
- Plan the implementation of the change to specify the actions, or tasks, that address the change.



Example of a schedule work breakdown

Whether you create a work breakdown and define tasks depends on the complexity of the change and the conventions at your site. A simple change request, for example, may require relationships only to affected parts, affected documents, and supporting information, while a more complex change requires information about subassemblies or other components that only becomes clear after detailed analysis. In addition, during the change creation, you may not know what other items must be added until the tasks are built and executed.

Schedules can be created in an ad-hoc manner to meet the requirements of each individual change object, or they can be created (copied) from a schedule template. A schedule template is a pre-defined schedule of tasks that is established for changes of a specific type. When you plan the implementation for such a change, you start with the corresponding schedule template. Any number of schedules can be defined and related to a change object.

The schedule can have tasks for each discipline or user to create new revisions or items and then make the changes to implement the proposed solution. Depending on the change work to be done, you could have one task per assignee that covers the changes for any number of items assigned to that user, or you could have one task per problem item or impacted item, or any other style of work breakdown you choose.

Because schedule tasks are not routed to users, it is good practice to have a simple one-step workflow task associated with each schedule task, as shown in the figure. The workflow routes the schedule task to the assignee's inbox and manages the implementation of the task. The resource associated with the schedule task is automatically assigned as the user to perform the workflow task. If more than one user is assigned to the schedule task, the single privileged user is assigned to the workflow. The workflow could include tasks to approve the changes made to each item revision, or this type of validation can be left to a later step (a later task in the schedule or a later workflow task in the ECN workflow). This would apply a status (for example, **Pre-Released**).

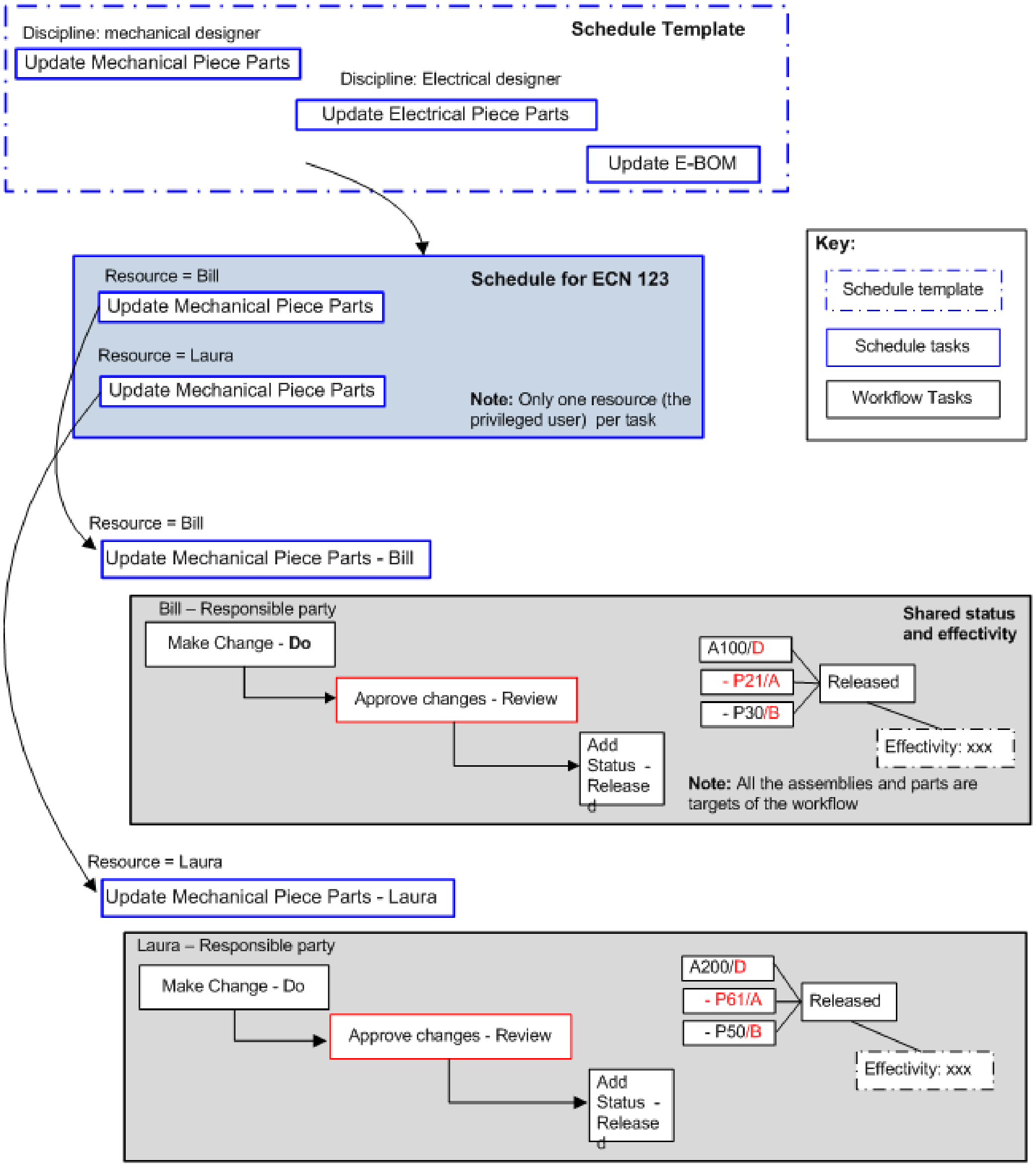
Flexibility of schedules

The advantage of a schedule is its flexibility. A schedule can easily be made larger or smaller, depending on the need. By contrast, workflows are much more rigid as they control the process and decision-making authority. Workflows should be kept simple, and schedules used when more complexity is required. Typically schedule templates are used to make defining the schedule for a particular ECR or ECN much quicker.

An analyst usually creates a work breakdown schedule, but another type of user can create it, and the analyst can then relate the schedule to the change object through the **Plan Items** or **Work Breakdown** relationship.

Example of a schedule work breakdown

The following is a simple example of a work breakdown for an engineering change notice (**ECN 123**). The work breakdown was created based on a standard schedule template (shown in the figure with dashed lines). The schedule was then modified to meet the ECN's requirements, creating copies of the Update Mechanical Piece Parts task for the two designers involved (Bill and Laura). Each of those tasks has the same small workflow template attached, which routes the task to the assignee (for example, Bill), then routes it for review of the changed and new items, and finally adds a status to them.



Use schedule tasks to manage changes

A complex change can have dozens or hundreds of problem, impacted, and solution items to manage. You can efficiently manage these as change items under a single change object by using a schedule task in one or more schedules (also known as plan items).

Schedule Manager helps with change-related work by creating a schedule task as a change object. This way, you can add the change items—problem, impacted, and solution items—to the schedule task, which in turn can be assigned to individual users for quick access. Distributing work across different users with different timelines can help to track completion at an individual change artifact level.

The change items associated with a schedule task appear in the **Affected Items** tab where you can do the following:

- Add and remove items from the change object
- Work on multiple items at once
- Propagate change items to a schedule task

Add plan items to a change object

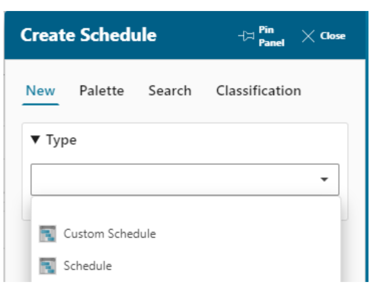
The **Plan Items** section of the **Reference Items** tab contains schedules for a change object. You have the option to add a schedule for an change request or change notice or create a schedule from a template.

Schedules created in the **Plan Items** tab are editable in Schedule Manager.

Create a schedule

1. Open the change notice you want to work with.
2. Click the **Reference Items** tab.
3. In the **Plan Items** section, click **Add to** ⊕.
4. Select **Create Schedule** to manually create the schedule structure.

   Select the type of schedule and enter the schedule information. Items marked with an asterisk are required.

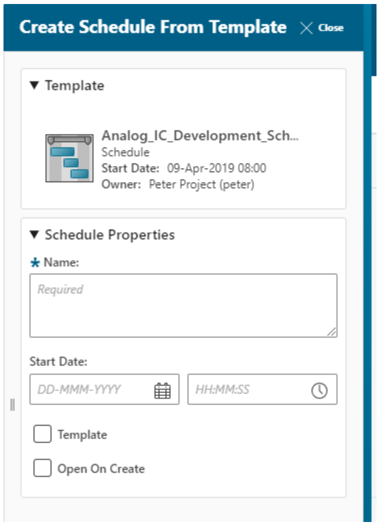
   Select **Open On Create** to open the schedule in Schedule Manager.
5. Click **Create**.

Create a schedule from template

1. Open the change notice you want to work with.
2. Click the **Reference Items** tab.
3. In the **Plan Items** section, click **Add to** ⊕.

4. Select **Create Schedule From Template**.

   Enter the information for the new schedule and select a template from the list. Items marked with an asterisk are required.

   Selecting **Open On Create** opens the schedule in Schedule Manager.

5. Click **Create**.

Roll up relations from a schedule task to a change object

You can select a plan item and commit the schedule task relations to the change notice. Change Manager creates the same relation between the object and the change notice.

1. Open the change notice you want to work with.

2. Click **Reference Items**.

3. Select a schedule from **Plan Items**.

   The columns display status and completed status for each schedule.

4. Go to **More Commands** ••• > **Manage** > **Rollup**.

   The page refreshes after the action is completed, and a message appears at the bottom of the window to indicate the action is complete.

Propagate relations from a change object to a schedule task

You can selectively propagate (or associate) the items related to a change object (problem, impacted, solution, and reference items) to related plan items (schedule tasks) associated with the change object. This allows you to quickly correlate the change items to be worked on during a task with the task so a user can easily access them. For example, you can propagate the assembly with the problem bumper to the scheduled task so the user can replace the bumper with a new one.

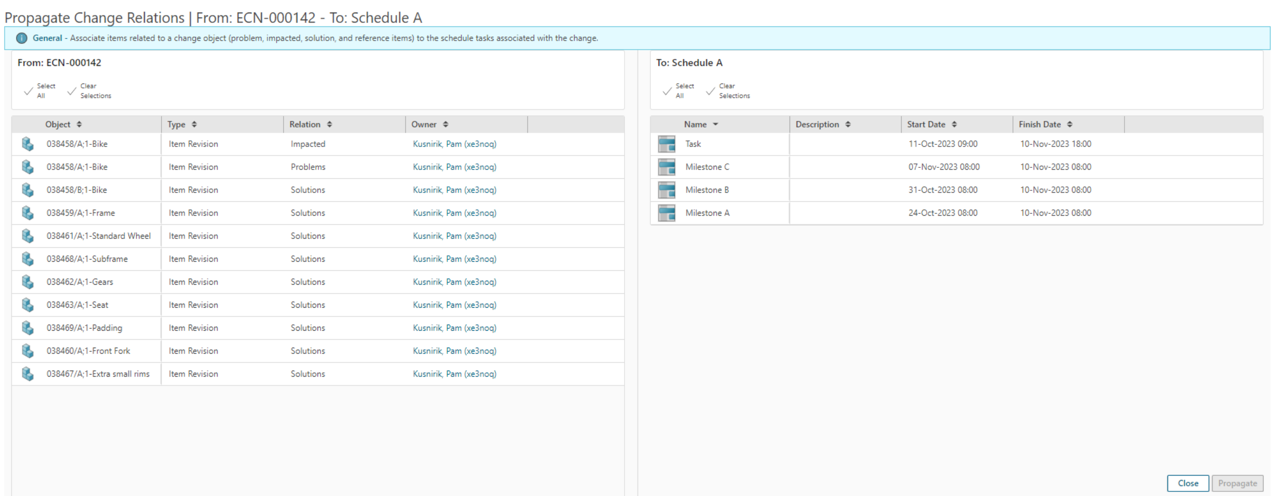
1. Open the change notice you want to work with.

2. Click **Affected Items**.

3. Select a schedule from **Plan Items**.

4. Go to **More Commands** ••• > **Manage** > **Propagate** .

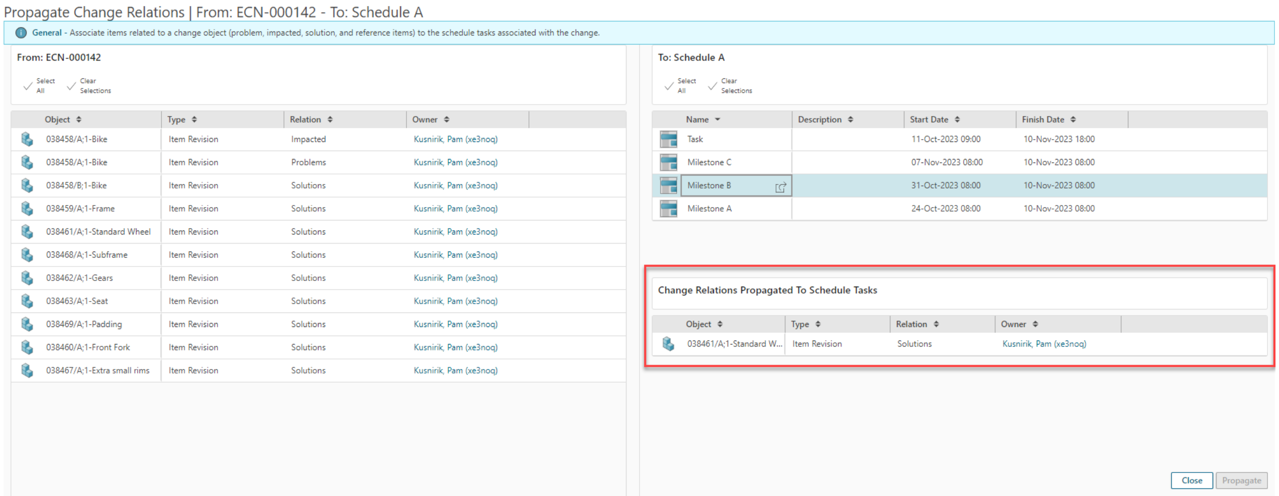
   The change objects and the schedule tasks display next to each other for comparison.



> Note:
>
> You can propagate the change objects into multiple schedules (one schedule at a time).

5. Select the problem, impacted, solution, and reference item(s) from the change object on the left, then select the schedule task to associate it with on the right, and click **Propagate**.

   The impacted contents that were propagated from the change notice to the schedule display in the **Change Relations Propagated to Schedule Tasks** table.



Continue propagating items as needed.

6. Click **Close** to save and exit.

   Now, if you open a schedule task with the propagated change items, the **Affected Items** tab displays those items.

6. Using Active Change and change tracking

What is Active Change?

An *active change* applies a context to your current working session that associates revisions with a specific change notice.

When you make revisions to an impacted item within a change notice, it automatically becomes a solution item with lineage. These solution items appear in the change summary of the **Overview** tab. If you create or revise other objects outside of the change, they are not associated or automatically applied in the context of the change notice and are not tracked in the change summary.

Setting a change notice as an active change lets you create revisions or property changes that are automatically applied to the active change and are tracked in the change summary. This is most important in a BOM context where you add, remove, replace, or modify properties. With an active change context set, these property changes are tracked in the change summary. If active change is not set, these property changes are not tracked.

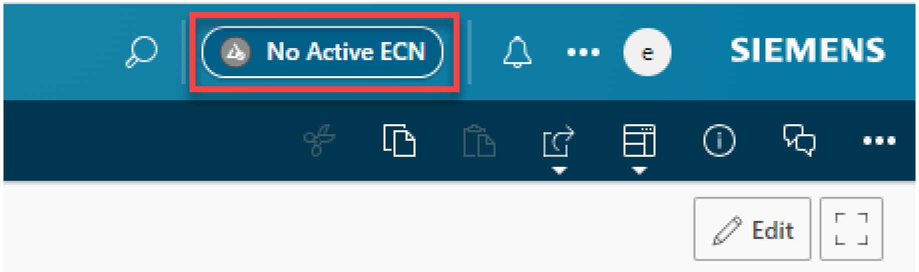
The default setting is **No Active Change**. Only a current, open change notice or simple change is available to set as an active change.

A business object constant is added to facilitate this function, **Cm0ChangeManaged**, and its default setting is **true** for **ItemRevision** and **Configurator** objects. If this constant is set to **true**, the new object is tracked against the global change context (set in the **User profile**).

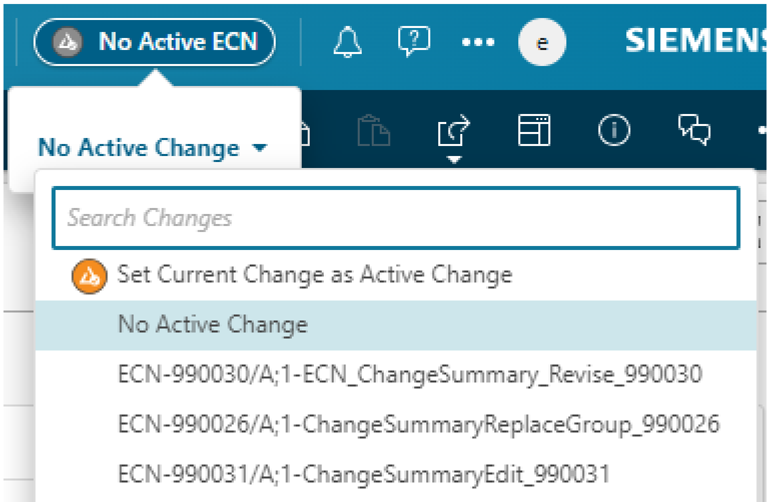
> Note:
>
> The active change list contains change notices which are open and where the current user is an Analyst or Change Contributor.

Set a change notice or a simple change as an Active Change

The **Active Change** setting is located in the global navigation area.



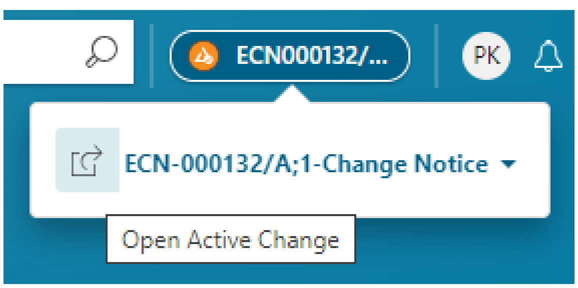
1. Select a change notice or simple change from the list to apply it as the active change, or choose to set the current change as the active change. Use the search box to filter the list to locate a specific change.



The **Active Change** icon is highlighted indicating an change notice or simple change is selected.

The active change setting remains applied even after you log off.

2. To open the active change, click the change, then the open icon.



3. If you want to remove the applied active change, select the active change > ▼ > **No Active Change**.

4. Complete the required tasks in the change notice workflow. Once all tasks are complete and the change notice is closed, the Active Change is unset and the status is **No Active Change**.

Review active or closed changes for a structure

You can track changes (added, modified, replaced, revised, or deleted) to the assemblies using a change request or a change notice. When the ECN or ECR is an Active change, redlines are shown in the structure. To view the closed changes, use the **Show Redlines** command.

1. Search for and open the structure. If the structure has changes, they are indicated by redlining. Expand the assembly to view the details of the change.

Element Name	ID	Revision
Engine	027067	*B* ~~A~~
piston	027068	A
Enhanced Valve	*027071* ~~027069~~	A
Connecting Rod Assembly	*027072*	*A*
~~connecting rod~~	~~027070~~	~~A~~

   Deleted parts are indicated by a red strikethrough.

   The added parts display in green and are italicized.

   For replaced or revised parts, the old and the new values are shown side by side.

2. (Optional) To disable highlighting the changes in the structure, go to **More Commands** ••• > **View** icon and turn off **Show Redlines**.

3. Only active changes are shown by default. To view the closed changes, click **More Commands** ••• > **View** > **Show Redlines**.

   These changes are also shown in the packed mode.

You can return a redline change back to its original impacted version by reverting the BOM modifications.

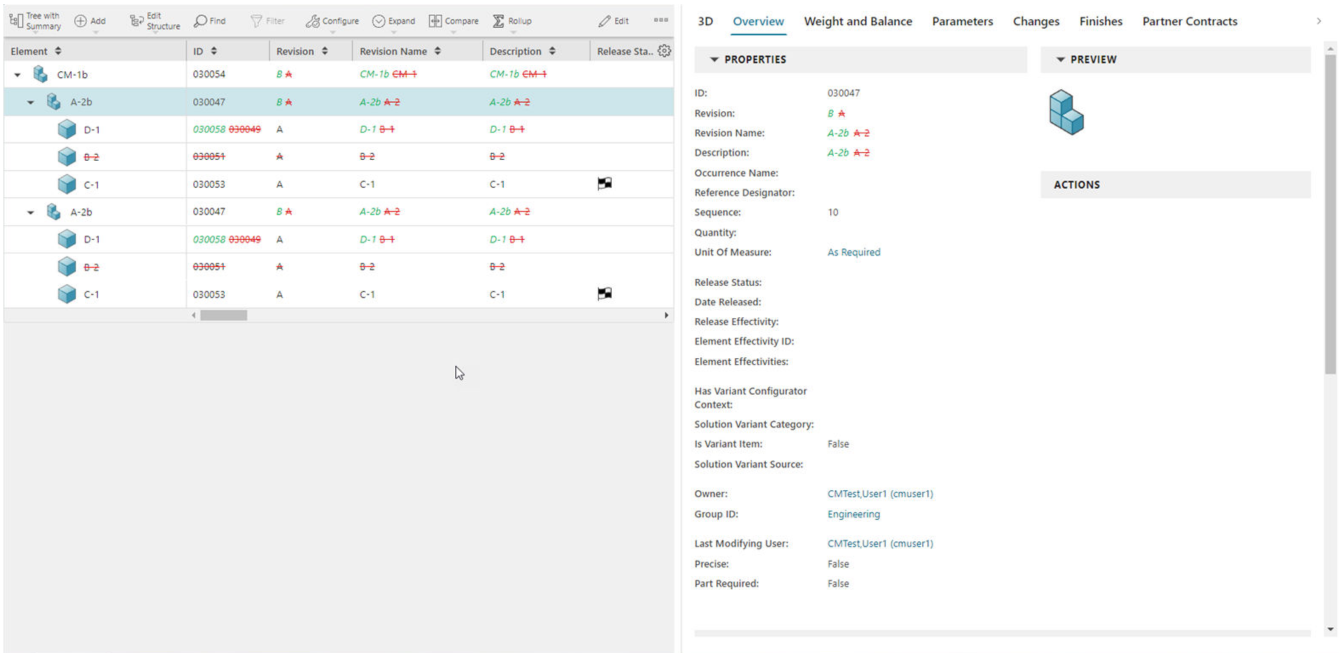
Track BOM modifications

Track BOM modifications in the change summary

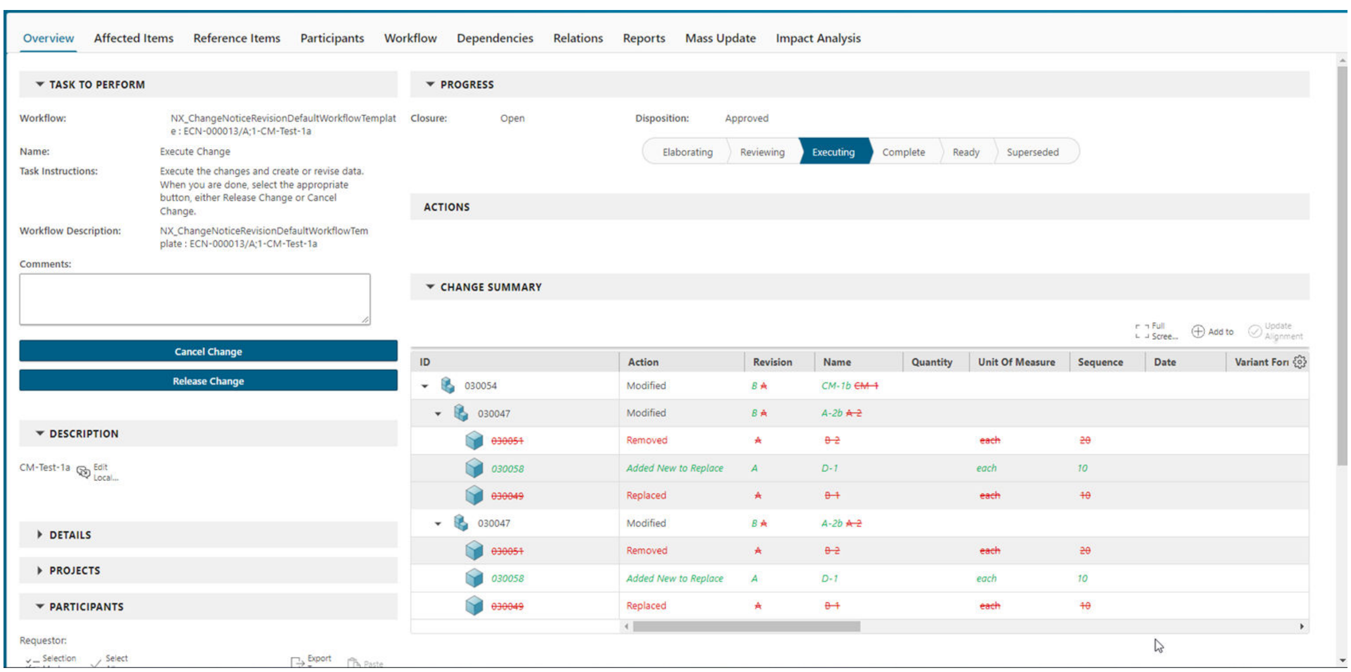
Applying an active change context for BOM revisions automatically tracks the modifications in the change summary.

See **Set a change notice or a simple change as an Active Change** for more information.

With the change notice set as an active change, BOM modifications and properties are identified by redlines. For more information on the **Show Redlines** feature, refer to **Review active or closed changes for a structure**.



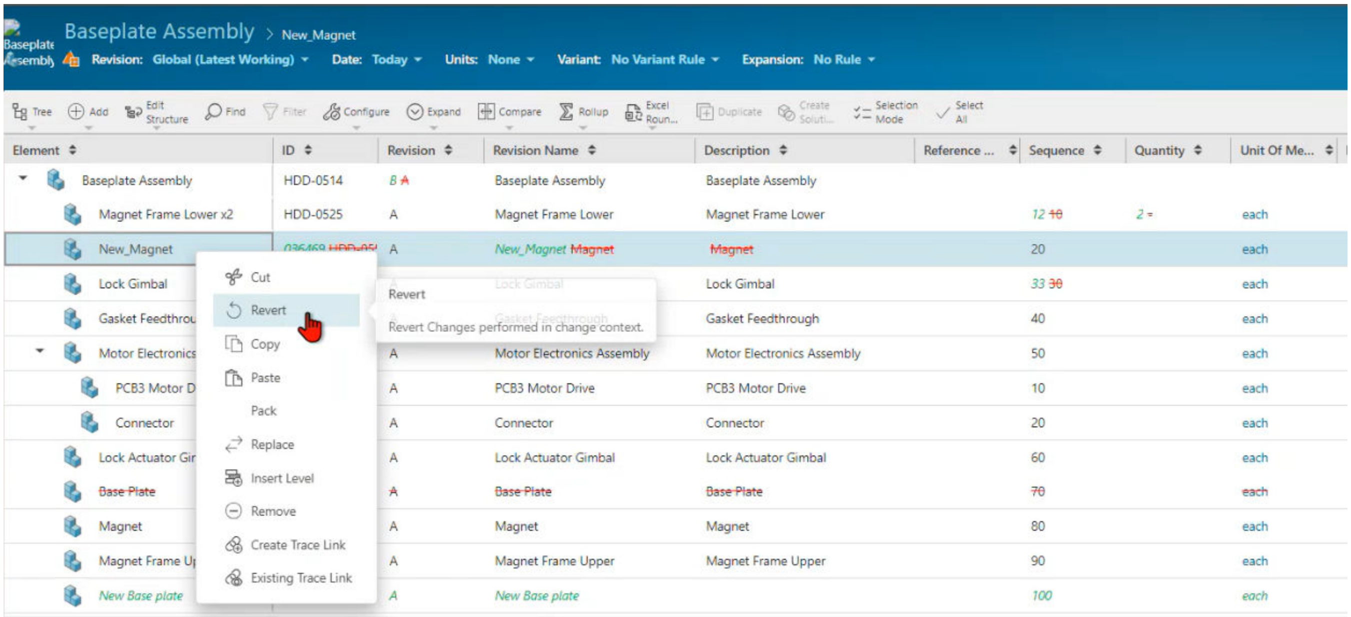
These modifications, not the full assemblies, are tracked in the change summary of the change notice.



Revert BOM changes

Revert BOM modifications

The revert functionality applies to those ECNs that include redline changes. When a user is authoring a BOM in the context of an ECN and has either replaced, removed, or added a new line item, sometimes unintentional changes can occur. An incorrect entry might unintentionally be made. The revert functionality lets you return a redline change back to its original impacted version. You can revert items in BOMs with and without effectivity dates applied.



Revert a BOM without release effectivity dates

The revert functionality lets you return a redline change back to its original impacted version. This procedure explains how to revert items in BOMs without any release effectivity dates applied.

Procedure

1. Open the ECN with the BOM to edit, and click the **Affected Items** tab.

   > Note:
   >
   > You cannot revert a line item in a closed ECN.

2. Open the BOM from solution item to modify and make any changes to your BOM items.

3. To revert a change, select the line item and click **Edit** > **Revert** or right-click and select **Revert**, then click **Revert** at the confirmation message.

   You can only revert one line item at a time.

   The line item returns to its original impacted version in the BOM.

   Note the following:

- If you add a new line item and revert, the line item is removed from the BOM. However, the new (unwanted) line item still displays in the Change Summary for tracking purposes, even though it is not associated with the BOM structure. You can cut the line item from the **Affected Items** tab of the solution item to completely remove it from the Change Summary.

- If you remove a line item and revert, the line item returns to the BOM.

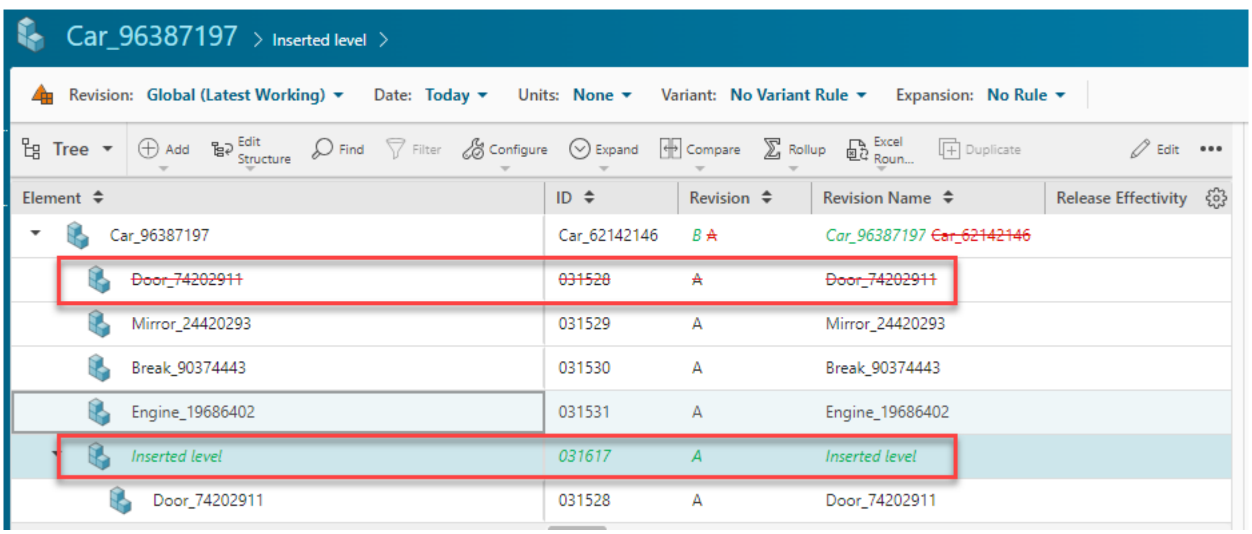
- If you replace a line item with a new item and revert, the original line item returns to the BOM.

  However, the new (unwanted) line item still displays in the Change Summary for tracking purposes, even though it is not associated with the BOM structure. You can cut the line item from the **Affected Items** tab of the solution item to completely remove it from the Change Summary.

  If you replace a line item with an existing line item and revert, that existing line item will not show in the Change Summary.

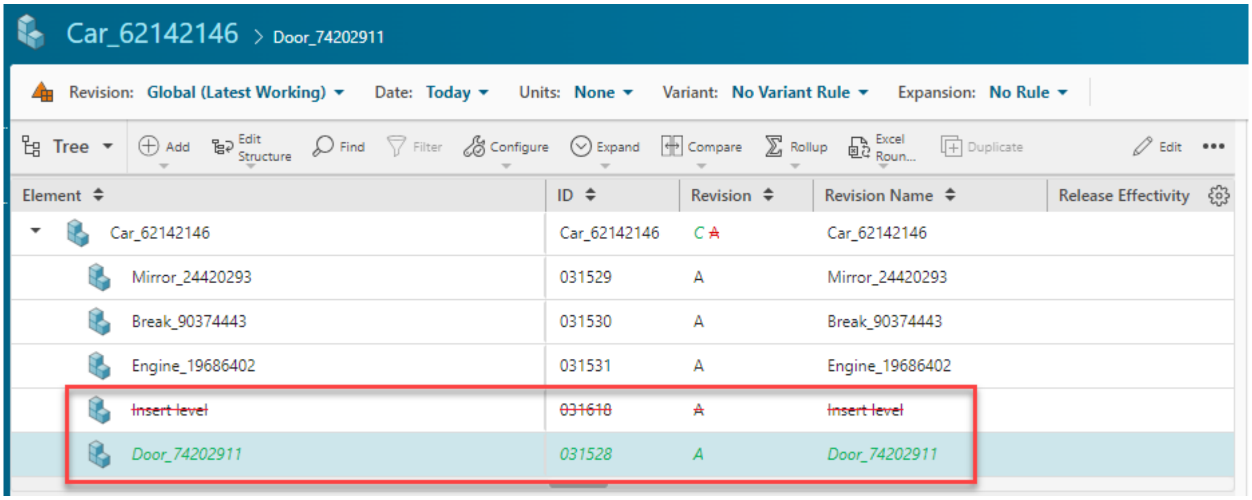
- If you update any line item properties and revert (**Quantity**, **Sequence**, and so on), those edits are returned to the original properties in the BOM.

- When you insert a level and revert, you must revert both the newly inserted level as well as the removed (red-lined) level to return the structure to the original.

  However, the new (unwanted) inserted level still displays in the Change Summary for tracking purposes, even though it is not associated with the BOM structure. You can cut the line item from the **Affected Items** tab of the solution item to completely remove it from the Change Summary.

- If you remove a level and revert, each line item that was associated with the removed level must be reverted, along with the removed (red-lined) line item, to return the structure to the original.



- If you modify a packed line item and revert, each line in the pack is reverted to the original. If you unpack a line item, each line can be modified and then reverted individually.

- If you add or remove an attachment to a line item revert, those changes are reflected in the BOM.

- In the case of an assembly BOM, a line item that is a subassembly with redlines cannot be reverted unless it children are reverted first. Once you revert the children, you can revert the subassembly line. If you select the subassembly line and revert, the revision is no longer associated with the change context and is no longer redlined. The line item is also not shown in the Change Summary as that revision is no longer in the **Solution Items** or **Impacted Items** and will not be released in the current ECN. This behavior also applies to the top line in an assembly BOM.

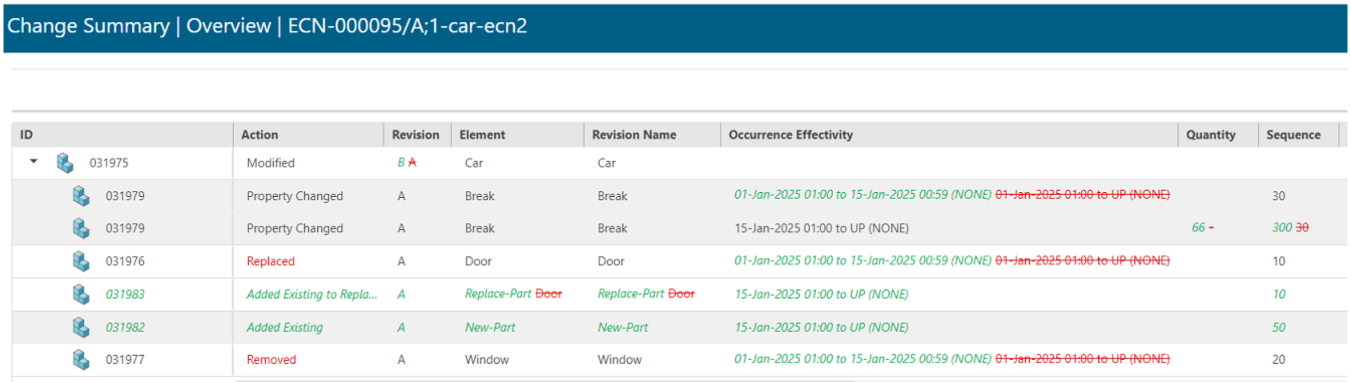
Note:

You cannot revert a line item that is defined as an absolute occurrence.

Revert a BOM with release effectivity dates

The revert functionality lets you return a redline change back to its original impacted version. This procedure explains how to revert items in a BOM with release effectivity dates applied.

If you add release effectivity, the date range displays in the **Occurrence Effectivity** column of the Change Summary. For example, in this Change Summary, 031983 was added as a new line item to *replace* 031976 and the date range for 031983 now reflects the new release effectivity of **15-Jan-2025 to UP**:



Change Summary | Overview | ECN-000095/A;1-car-ecn2

ID	Action	Revision	Element	Revision Name	Occurrence Effectivity	Quantity	Sequence
031975	Modified	B ~~A~~	Car	Car			
031979	Property Changed	A	Break	Break	01-Jan-2025 01:00 to 15-Jan-2025 00:59 (NONE) ~~01-Jan-2025 01:00 to UP (NONE)~~		30
031979	Property Changed	A	Break	Break	15-Jan-2025 01:00 to UP (NONE)	66 -	300 ~~30~~
031976	Replaced	A	Door	Door	01-Jan-2025 01:00 to 15-Jan-2025 00:59 (NONE) ~~01-Jan-2025 01:00 to UP (NONE)~~		10
031983	Added Existing to Repla...	A	Replace-Part ~~Door~~	Replace-Part ~~Door~~	15-Jan-2025 01:00 to UP (NONE)		10
031982	Added Existing	A	New-Part	New-Part	15-Jan-2025 01:00 to UP (NONE)		50
031977	Removed	A	Window	Window	01-Jan-2025 01:00 to 15-Jan-2025 00:59 (NONE) ~~01-Jan-2025 01:00 to UP (NONE)~~		20

However, once a revert is performed on the replaced item, the line item reflects the original release date range, or removes the date range if one was not present previously.

Procedure

1. Open the ECN with the BOM to edit that includes effectivity dates, and click the **Affected Items** tab.

   > Note:
   >
   > You cannot revert a line item in a closed ECN.

2. Open the solution item to modify and make any changes to your BOM items.

   To show any occurrences that are excluded by the currently applied effectivity, in the work area toolbar, click **Configure** > **Show Excluded by Effectivity**. This will let you compare all of the effectivity date ranges between items in the BOM.

3. To revert a change, select the line item and right-click and select **Revert**, then click **Revert** at the confirmation message.

   The line item returns to its original impacted version in the BOM. The Change Summary displays the line item with reverts incorporated.

   Note the following for items with release effectivity applied:

   - If you add a new line item and revert, the line item is removed from the BOM. However, the new (unwanted) line item still displays in the Change Summary for tracking purposes, even though it is not associated with the BOM structure. You can cut the line item from the **Affected Items** tab of the solution item to completely remove it from the Change Summary.

     Once reverted, the occurrence effectivity date range returns to the date range specified in the original ECN.

   - If you revert after removing a line item, the line item returns to the original date range.

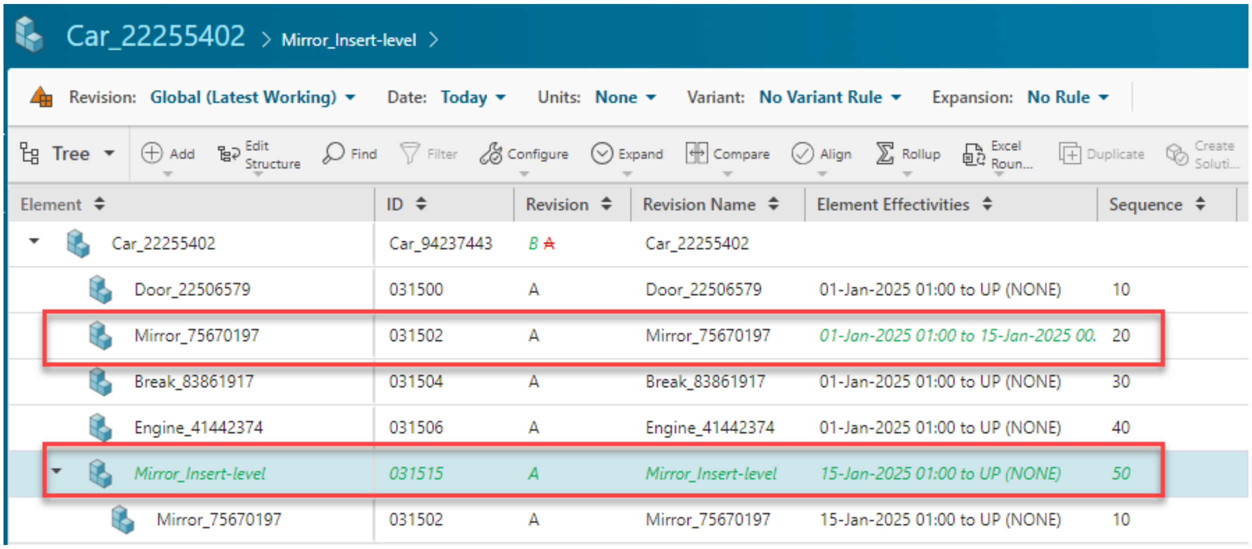
- If you replace a line item with a new item and revert, the original line item returns to the BOM.

  However, the new (unwanted) line item still displays in the Change Summary for tracking purposes, even though it is not associated with the BOM structure. You can cut the line item from the **Affected Items** tab of the solution item to completely remove it from the Change Summary.

  If you replace a line item with an existing line item and revert, that existing line item will not show in the Change Summary.

- If you revert after updating any line item properties (**Quantity**, **Sequence**, and so on), the new line item with the updated properties is removed, and the original line item returns to the original effectivity date range in the BOM.

- When you insert a level and revert, you must revert the newly inserted level and the original line item (on which the inserted level was performed) to return the structure to the original.

  However, the new (unwanted) inserted level still displays in the Change Summary for tracking purposes, even though it is not associated with the BOM structure. You can cut the line item from the **Affected Items** tab of the solution item to completely remove it from the Change Summary.

  Once reverted, the occurrence effectivity date range returns to the date range of the line item specified in the original ECN.

- If you remove a level and revert, each line item that was associated with the removed level must be reverted, along with the original line item, to return the structure to the original.

  Once reverted, the occurrence effectivity date range returns to the date range of the line item specified in the original ECN.

- If you modify a packed line item and revert, each line in the pack is reverted to the original. The occurrence effectivity date range returns to the date range of the line item specified in the original ECN.

  If you unpack a line item, each line can be modified and then reverted individually.

- If you add or remove an attachment to a line item revert, those changes are reflected in the BOM.

- In the case of an assembly BOM, a line item that is a subassembly with redlines cannot be reverted unless it children are reverted first. Once you revert the children, you can revert the subassembly line. If you select the subassembly line and revert, the revision is no longer associated with the change context and is no longer redlined. The line item is also not shown in the Change Summary as that revision is no longer in the **Solution Items** or **Impacted Items** and will not be released in the current ECN. This behavior also applies to the top line in an assembly BOM.

> Note:
>
> You cannot revert a line item that is defined as an absolute occurrence.

Change tracking for reference designators

Reference designators are unique identifiers assigned to components within a schematic or assembly. Commonly used in electronics, reference designators typically consist of a letter (or letters) followed by a number (for example, R1 for a resistor, C2 for a capacitor).

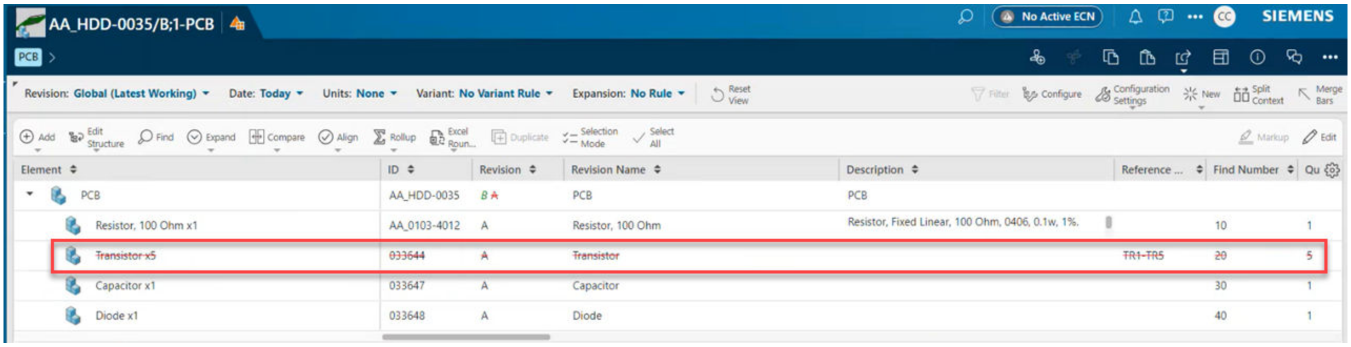
In Change Management, *reference designators* are a common component used by engineers to record position details of components on a printed circuit board (PCB) in a PCB assembly BOM. When a change is proposed, the reference designators use a unique text field to identify the specific components affected. There can often be a very high number of reference designators in a change notice, especially in complex designs.

The change notice highlights any modified reference designators by showing redlines in both packed and unpacked mode. For instance, if you pack five occurrences of the same part with different reference designators in a change notice, the **Reference Designator** column displays them as a concatenated set, such as **TR1-TR5**. To edit reference designators, you must first unpack them. After making any edits, you can repack the reference designators and identify the changes in a single row using redlines. The **Quantity** and **Reference Designator** columns are automatically updated on the packed line to reflect the modifications.

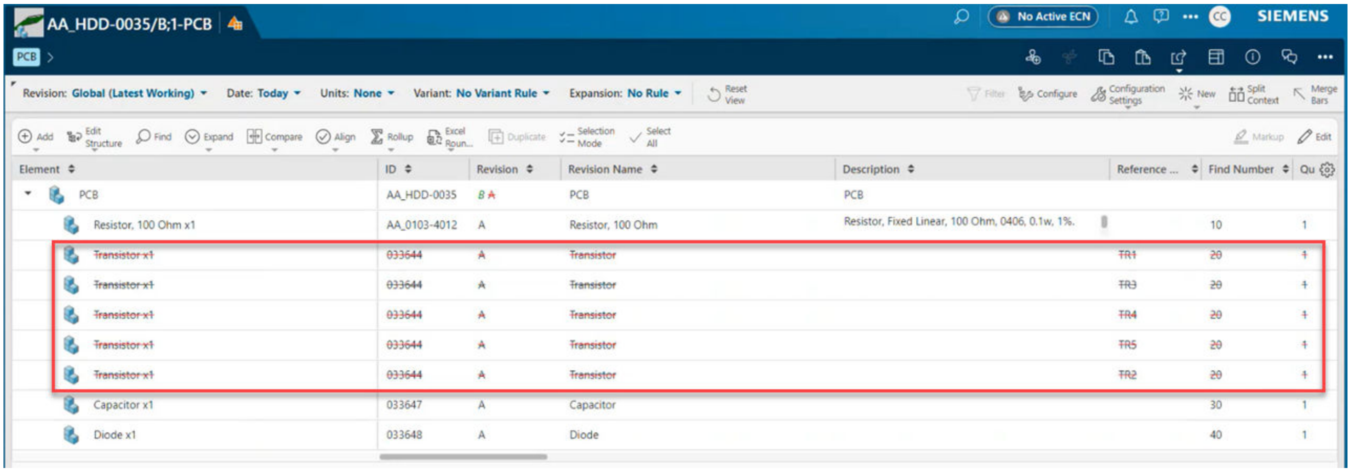
> Note:
>
> The BOM shows both packed and unpacked modifications, but the Change Summary only displays modifications in unpacked mode.

Remove all reference designators

Here, five transistors were removed, which the **Reference Designator** column reflects in a range as **TR1-TR5**.

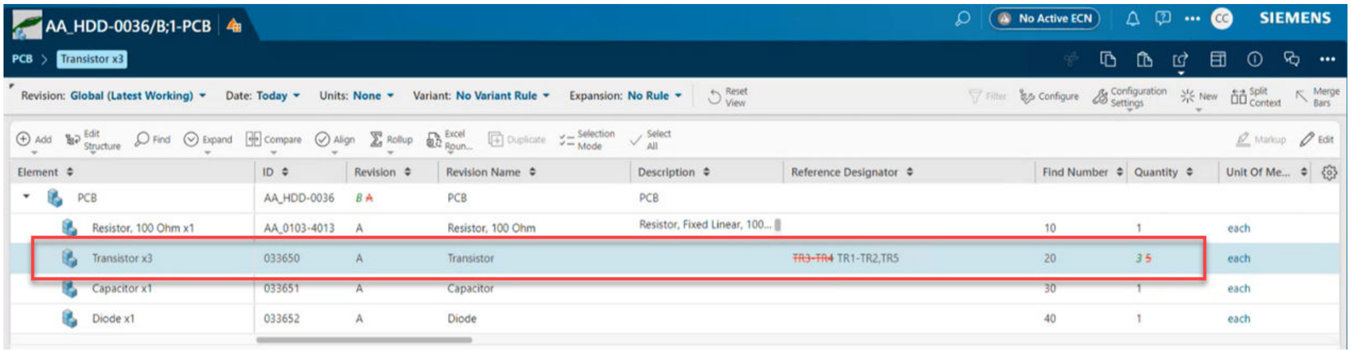


Click **Expand**, **Unpack All** to view the unpacked transistors:

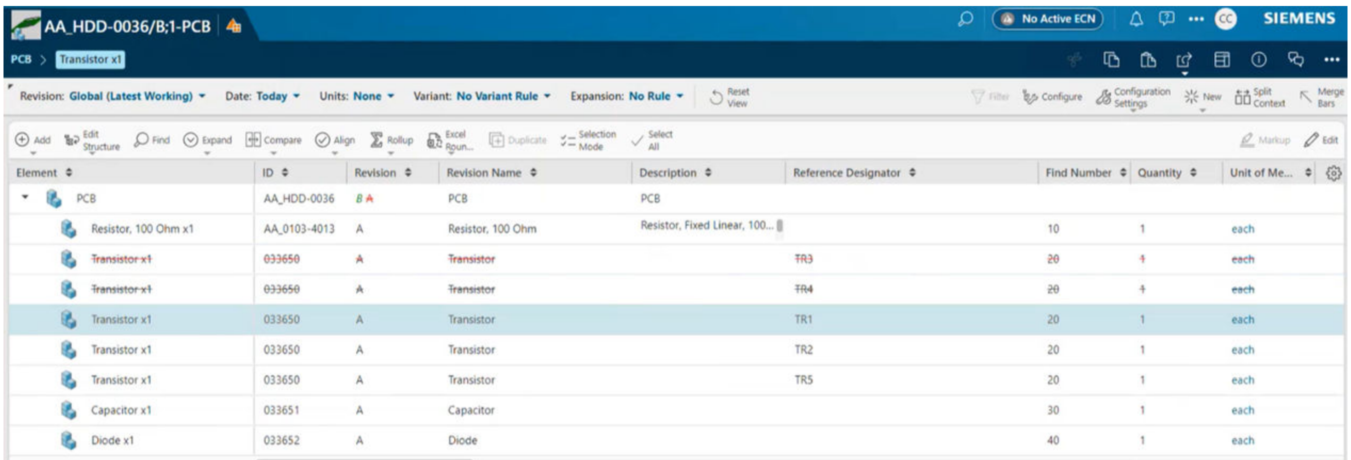


Perform a partial removal

If you perform a partial removal in a change context, the removed items will combine with the remaining items in packed mode. The **Reference Designator** and **Quantity** property will update and show as redlined. For example, if you remove two transistors (**TR3** and **TR4**) out of five, the remaining transistors will appear in a single row in packed mode. The **Reference Designator** will show **TR3** and **TR4** as removed with a red strike-through, while **TR1**, **TR2**, and **TR5** will remain unchanged. The **Quantity** will display **3** in green and **5** with a red strike-through.

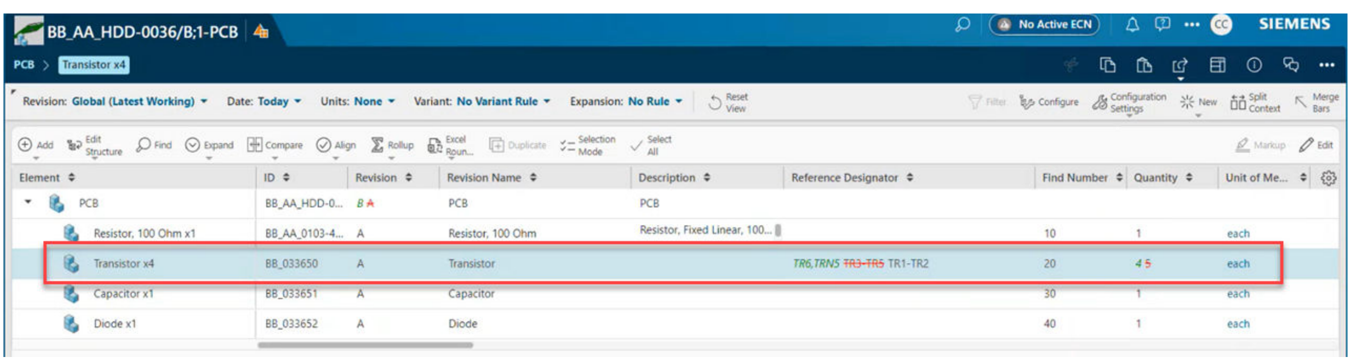


Click **Expand**, **Unpack All** to view the unpacked modifications:

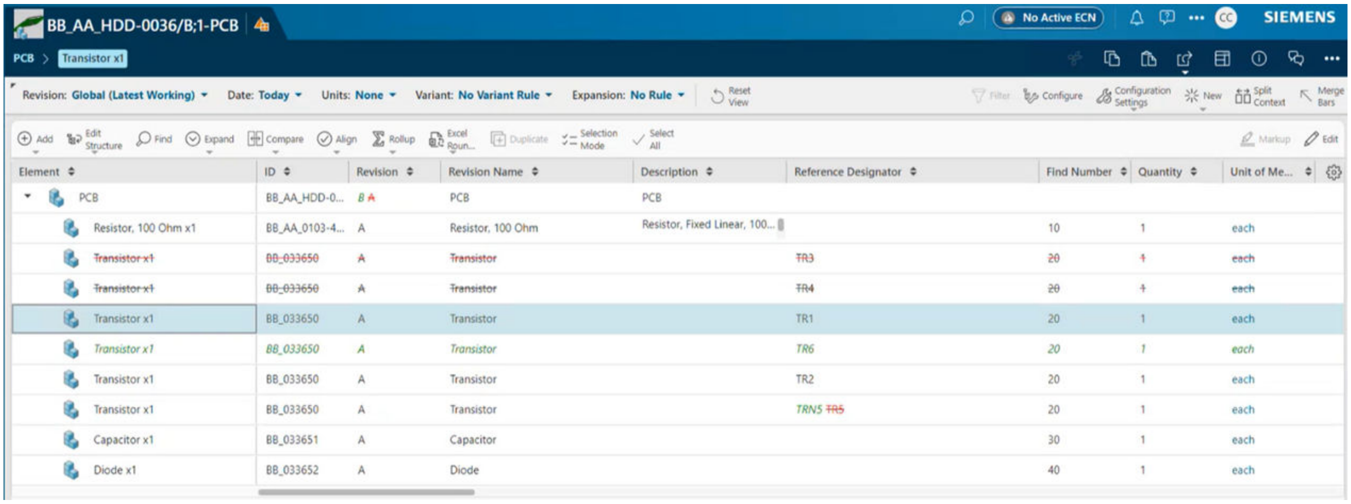


Perform multiple modifications

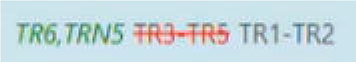
When you make multiple modifications to an assembly, such as property edits, adding and removing lines, and other changes, all those adjustments pack into a single line. For example, if an assembly contains multiple removed lines, added lines, and property edits, the packed line for the **Reference Designator** property will display the new values and added lines in green. The old values and removed lines will appear as red strike-through, followed by unchanged values.



Click **Expand**, **Unpack All** to view the unpacked modifications:



New or updated values will always display before removed items in the **Reference Designator** column.



Packed modifications display in a BOM as follows:

Modification	Reference Designator column displays items as:
Additional items added	Green
Items removed	Red, strike-through
Property changes	New values in green, old values in red strike-through

Create a product change after the fact for change tracking

You can start product modifications outside of a change context in a rapid and agile manner before the change notice is available. Once the change notice is available, you can add the modified assemblies *after the fact* to the change notice.

Adding a modified assembly as a **Solution Item** to a change notice automatically generates tracking in the change summary,displayed with redlines.

For more information on the **Show Redlines** feature, refer to **Review active or closed changes for a structure**.

Consider the following points when performing this agile development.

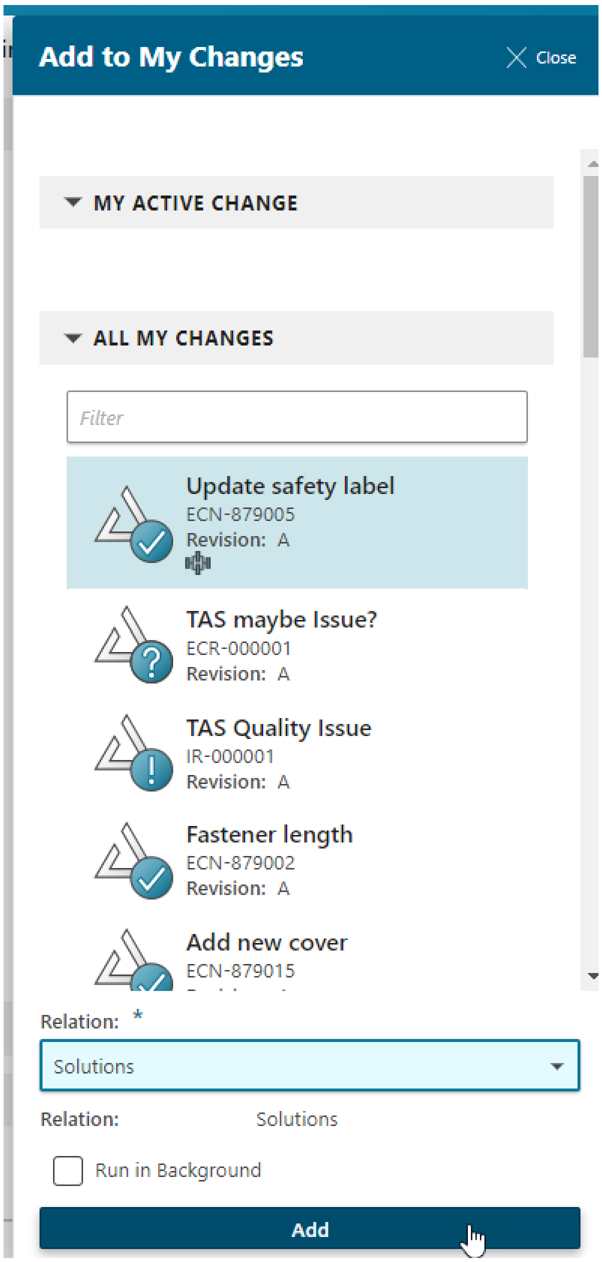
- The product revision must not be a solution item to an existing change notice.
- Only assigned participants can add an assembly to a change notice.

- A change notice must be in a state of executing maturity prior to adding the revised assembly as a solution item.

To add a modified assembly as a solution item to a change notice:

1. Open a previously released assembly and make revisions as required.

2. To add the assembly to a change, go to **More Commands** ••• > **Manage** > **Add to My Changes**.



3. Select a change notice from the list.

4. Select **Solutions** from the **Relations** list and click **Add**.

   The original version of the structure automatically populates the **Impacted Items** section of the **Affected Items** tab.

   The contents of the modified structure are shown in the **Change Summary**. BOMEdits are automatically created for all BOMline changes.

> Note:
>
> Your administrator can enable and configure the **Cm0ImpactedItemReleasedStatuses** preference to customize how **Impacted Items** are created when adding revisions as **Solution Items** using **Add to My Changes**. When you add a **Solution Item** with a revision that matches the custom release status value in the **Cm0ImpactedItemReleasedStatuses** preference, it is automatically added as an **Impacted Item**. This includes revisions that contain multiple release statuses. If a **Solution Item** contains multiple released revisions, only the most recent revision with that custom release status is added as an **Impacted Item**.
>
> If the preference is not set, the **Impacted Item** is derived from the last released revision of the **Solution Item**.

> Note:
>
> Your administrator can customize how **Impacted Items** are created when adding revisions as **Solution Items** using **Add to My Changes**. When you add a **Solution Item** with a revision that matches the defined custom release status value, it is automatically added as an **Impacted Item**. This includes revisions that contain multiple release statuses. If a **Solution Item** contains multiple released revisions, only the most recent revision with that custom release status is added as an **Impacted Item**.
>
> If not set, the **Impacted Item** is derived from the last released revision of the **Solution Item**.

Get guidance on updating an aligned engineering BOM for a change context

When a design structure is updated, you must analyze the impact of the design changes on the corresponding engineering BOM. Subsequently, you must update the engineering BOM so that the part occurrences are correctly aligned with the design occurrences.

1. From **Inbox** or **Changes**, open the active change.

2. It is recommended to take bottom-up approach while updating corresponding engineering BOM and perform level by level updates till you reach the top product.

   From **Change Summary**, select the innermost modified design assembly and click **Update Alignment** > **Guided Update**.

3. In the **Guided Update** panel, all the required changes are listed. At selected level only its first level modified occurrences are shown in the panel.

   The design structure and its aligned engineering BOM are displayed side by side.

   You can view the current alignment status by enabling **Show Alignment Status** and view the changes in the structure by enabling **Show Redlines**.

   You can also filter the tiles based on operations suggested in filter tags in the panel. This will only filter the tiles and it does not impact update operation.

4. Select the **Run in Background** check box if you want the updates to be performed in the background while you proceed to do other tasks. Once the update is complete, a notification appears in **Alerts** 🔔.

5. After analyzing the changes and performing the required actions, click **Update** to update the corresponding engineering BOM along with its alignment.

After updating the aligned engineering BOM, first perform an alignment check to verify if the engineering BOM is updated and aligned correctly. Next, release the active change notice.

To release the active change notice:

1. Go to the Change tile and open the required change notice.

2. Click Release Change.

Specify release effectivity

A product structure goes through many changes during the evolution of its product definition. Using *structure effectivity*, you can capture how the product structure has evolved over a period. One type of effectivity, *release effectivity*, helps in configuring different revisions of the same element. It denotes from which date or for which unit (and end item) an element revision is effective.

> Note:
>
> Learn more about structure effectivity here.

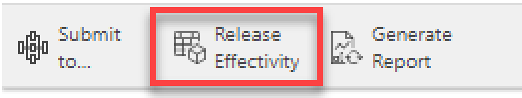
You can create a new release effectivity for a particular date or a range of dates, or a unit number or a range of units. For example, in an engine cooling block, revision *A* has 5 cooling fins (a unit) and in revision *B* it is changed to 6. Release effectivity is used when deciding which revision to use. It is necessary to have a release status associated with an element to author release effectivity on it.

Release effectivity can be applied to change notices created in the context of an object or from the **Changes** tile.

Procedure

1. Search the element (having some release status associated with it) and go to **More Commands** > **Manage** > **Release Effectivity**.

   Or, click **Release Effectivity** in the toolbar:

2. In the **Release Effectivity** panel, select the appropriate release status.

3. In the **Release Effectivity** panel, click **Add Effectivities**.

4. Add a new effectivity or locate existing effectivities from the **Search** tab. You can add multiple effectivities to the selected element.

5. To specify the dates for release effectivity:

   a. In the **New** tab, select **Date**.

   b. Select the **Share** check box to create a shared effectivity. Specify the effectivity **Name**.

      The **Name** field is displayed only for shared effectivities. You can search for the effectivity by name.

   c. Select the **Start** date from the calendar.

   d. Select the **End** date from the calendar. If applicable, you can select **UP** (all future dates) or **SO** (stock out).

   e. Select the **Protect** check box if you want to control access to the effectivity using Access Manager.

   f. Click **Add** to create the effectivity.

      After release effectivity is added, the occurrence is configured based on the current revision rules.

6. To specify units for release effectivity:

   a. In the **New** tab, select **Unit**.

   b. Select the **Share** check box to create a shared effectivity. Specify the effectivity **Name**.

The **Name** field is displayed only for shared effectivities. You can search for the effectivity by name.

c. Specify the desired unit or a range of units in the **Unit** field.

d. Click the **Replace** icon to add a new **End Item** or search for an existing **End Item**.

e. Select the **Protect** check box if you want to control access to the effectivity using Access Manager.

f. Click **Add** to create the effectivity.

After the release effectivity is added, the element is configured based on the current revision rules.

Merging unincorporated changes

About unincorporated changes

An *unincorporated change* is a change that is approved but not yet incorporated in the design of a product. Unincorporated changes enable a change to be processed and completed, even though not all of the required updates have been added into the main release. Usually, changes are not incorporated fully because there is not enough time, importance, or budget to incorporate the changes completely through the development process.

You can merge unincorporated changes to existing designs using Active Workspace. By viewing a side-by-side presentation of these two assembly versions, you can quickly see the differences and merge any required portions into the final ECN.

The merge functionality occurs when a released change acts on the same impacted revision as a work-in-progress change; in that instance, you can view the merge candidates. In other words, a merge happens from a released change to a work-in-progress change where the impacted revision is common to both.

> Note:
>
> Merge does not occur in cases where the different changes act on different impacted revisions, or when both changes are work-in-progress changes.

Example

For example, during the manufacturing phase of production, an emergency revision of a product part is released by a designer. To fully incorporate this change into the assembly, the following process takes place:

1. The change specialist responsible for managing the change process creates an ECN to implement the change and adds the items of the part that needs to be updated to the **Impacted Items** folder. The change specialist then starts a workflow for the ECN and assigns the necessary participants.

2. The analyst, assigned to implement the ECN, modifies the item with Revision A and creates a new revision, which appears in the **Solutions Items** folder as Revision B.

3. The analyst then creates a second ECN to maintain the emergency change, and the change specialist starts a workflow and assigns participants.

4. The analyst creates a new revision and makes the change, called Revision C.

5. Revision C, which includes the emergency update, is then merged into the source ECN via the merge process. Once complete, all of the merged updates are reflected by redlines in the Change Summary.

6. To finish, the analyst releases the merged ECN.

BOM Considerations

Merge functionality performs the same for assembly and usage BOMs, but note the following:

- Since the topline of an usage BOM is not revised, the usage assembly has its own independent lifecycle and is released as part of a change object. This merge scenario assumes that there are at least two users who are making a change to the same part in different browsers.

- The topline of an assembly BOM can be altered since its top node is classified as an item revision.

- The business object constant **Fnd0MaxAllowedWorkingRevisions** (defined on **Fnd0AbstractOccRevision**) must be modified in BMIDE for **Ebm0AbstractPartOccRevision** to include a value as **-1**. This allows for multiple working revisions of EBOMs (the default value is 1). For example, if the value of **Fnd0MaxAllowedWorkingRevisions** is set to **-1**, more than one user can make changes to the same structure with the revision rule set as **Working (Current user); Any status**.

For a full example of incorporating changes, see Example of incorporating changes.

The following procedures describe how to merge unincorporated changes with and without release effectivity.

Merge an unincorporated change for a BOM into an existing change notice

You can compare and merge unincorporated changes to existing designs. Through this process, you can integrate an emergency released ECN into an in-progress ECN by viewing both structures side-by-side and selecting updated items to merge.

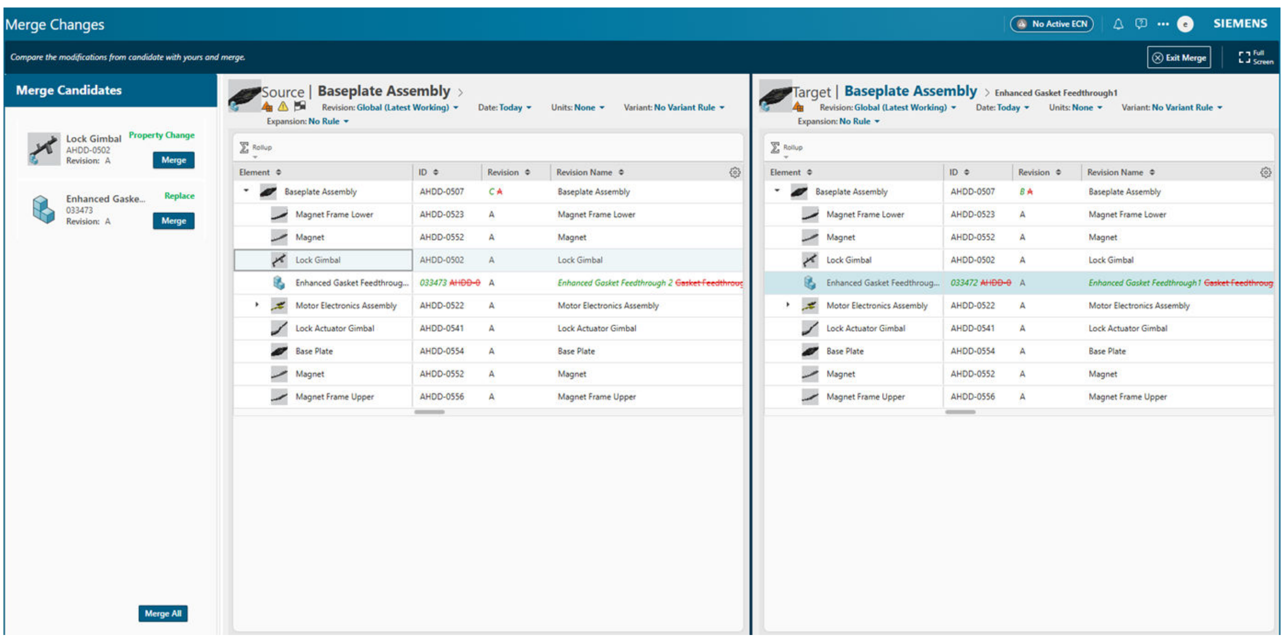
Procedure

1. Open the work-in-progress ECN that is to incorporate the emergency released ECN, and view its **Change Summary**.

2. In the **Change Summary**, under the **Merge Status** column for the updated object, click the merge required indicator.

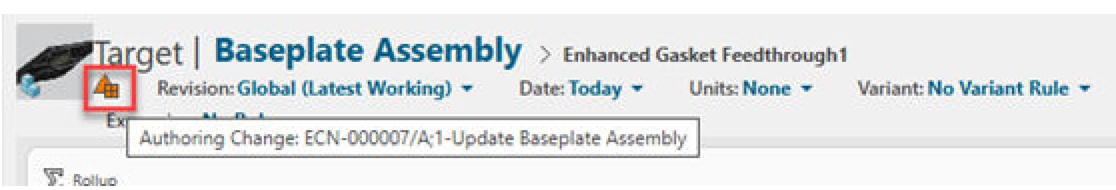
   This displays both the completed emergency ECN (**Source**, on the left) with the work-in-progress ECN (**Target**, on the right).

   You can resize panels by dragging their borders left or right.



Note:

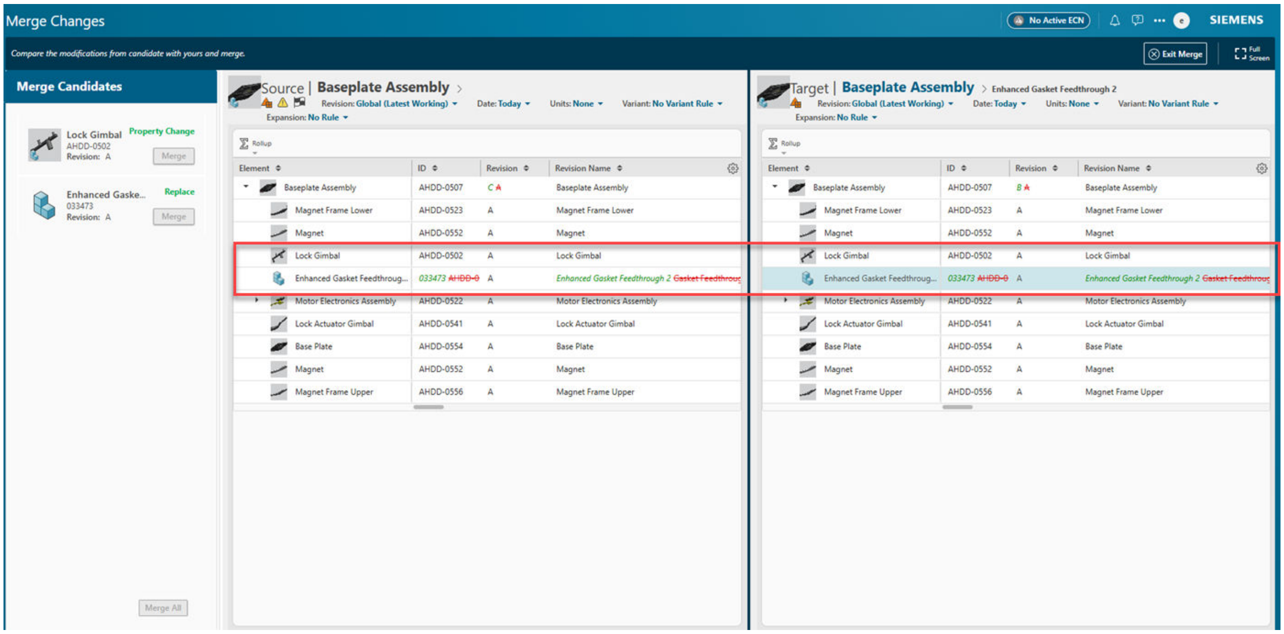
Hover over the change icons to view their respective ECN numbers.



3. Review the **Merge Candidates**. Click **Merge** to select one or **Merge All** to select all of the changes to incorporate into the **Target** panel.

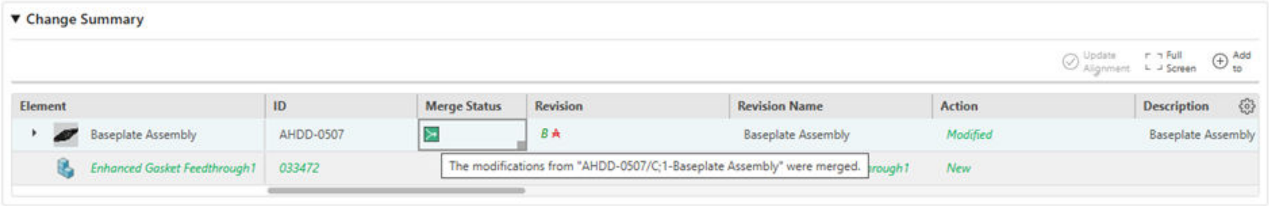
> Note:
>
> The ECN can still be released without accepting all of the merge candidates.

After merging, the **Target** object panel reflects the combined changes. Here, a property change and a replacement were merged into the target assembly.



4. Click **Exit Merge** (top right).

The **Change Summary** reflects the merged updates. The **Merge Status** icon indicates the modifications that were merged.



5. Release the change.

Merge an unincorporated change for a BOM with release effectivity into an existing change notice

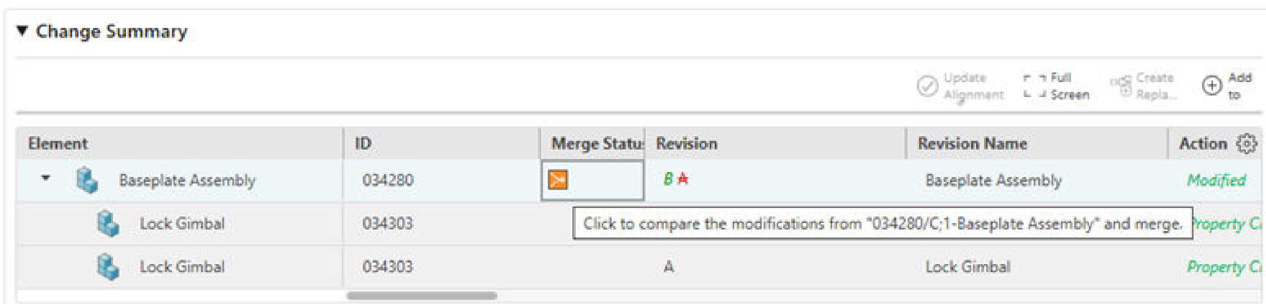
Active Workspace lets you compare and merge unincorporated changes within existing designs. Through this process, you can integrate an emergency released ECN into a work-in-progress ECN by viewing both structures side-by-side and selecting updated items to merge. In this process, an ECN that contains a BOM with release effectivity is merged into an existing ECN.

Release effectivity plays a pivotal role in configuring distinct revisions of the same design element. For more information, see About structure effectivity.

Procedure

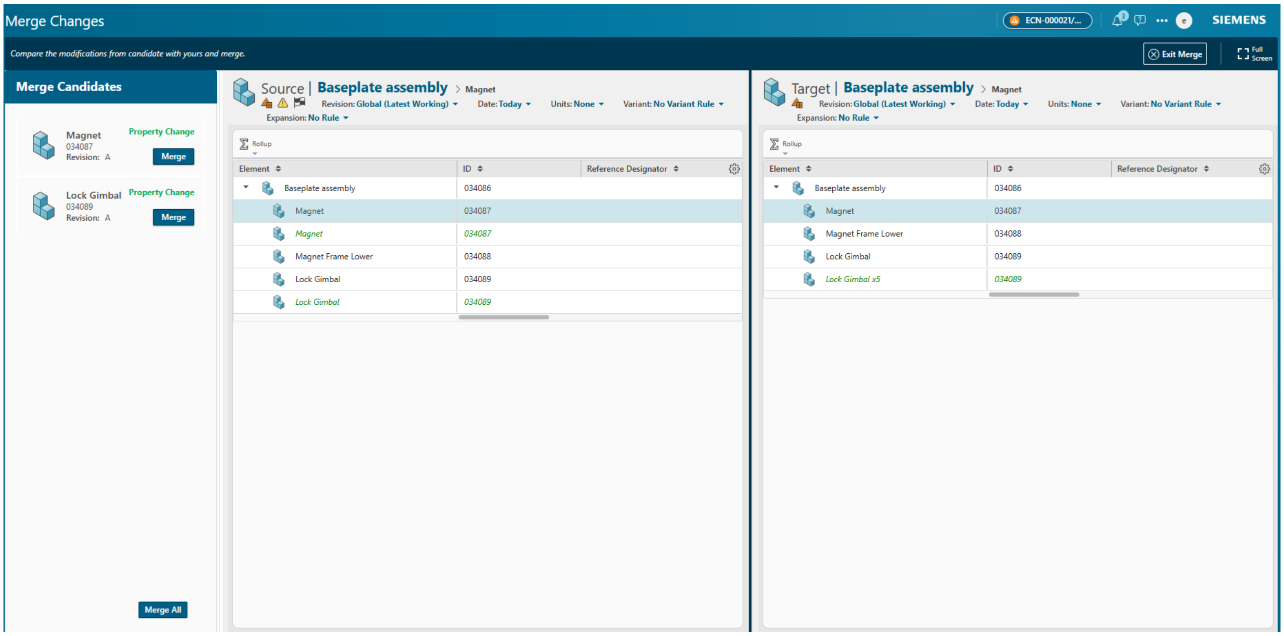
1. Open the work-in-progress ECN that is to incorporate the emergency released ECN, and view its **Change Summary**.

2. In the **Change Summary**, under the **Merge Status** column for the updated object, click the merge required indicator.

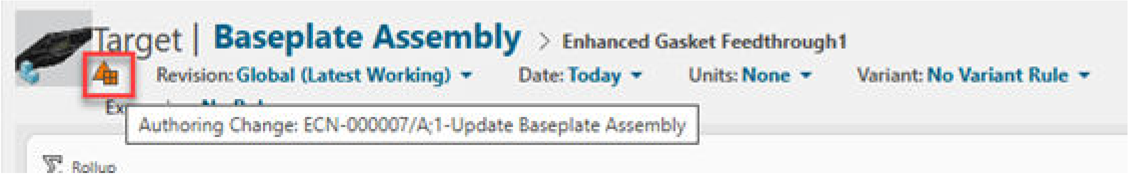
   

   This displays the **Merge Changes** screen, with both the completed short term, emergency ECN (**Source**, on the left) with the long-term, work-in-progress ECN (**Target**, on the right).

   Here, the **Source** ECN contains new updates (**Magnet** and **Lock Gimbal**) with release effectivities to merge into the **Target** ECN. If the part of the assembly contains two different effectivity dates, the merge incorporates an effectivity cutback, so the Source does not overlap with the effectivity of the new, or replacing, part.



Hover over the change icons to view their respective ECN numbers.



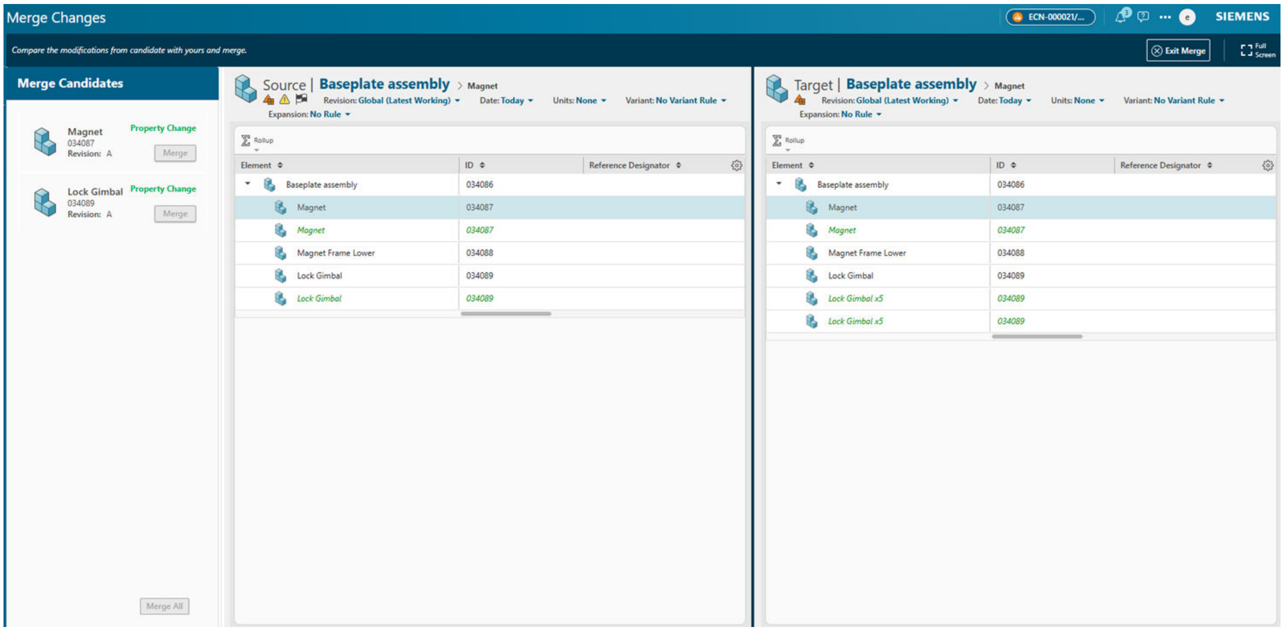
You can resize panels by dragging their borders left or right.

To select a pre-determined effectivity range for each ECN, under **Date**, select **Date Range** from the drop-down to display the **Date Range Effectivity** dialog. This lets you specify the time period during which an item in the assembly is effective.

3. Review the **Merge Candidates**. Click **Merge** to select one or **Merge All** to select all of the changes to incorporate into the **Target** panel.

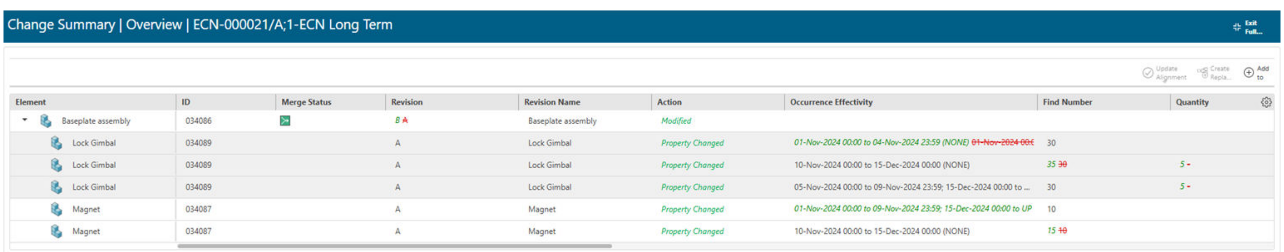
> Note:
>
> The ECN can still be released without accepting all of the merge candidates.

The **Target** object panel reflects the combined changes. Here, property changes were merged.



4. Click **Exit Merge**.

   The **Change Summary** reflects the merged updates. The green **Merge Status** icon shows as **Merge Complete**. Release effectivity dates are displayed under the **Occurrence Effectivity** column and you can identify the release effectivity cutbacks (through redlines) that are now in place.



   Merging release effectivity ranges in change notices works by combining the time periods during which the changes are valid. If two change notices have different effectivity dates, merging them covers the entire range of both original periods. This ensures that all changes are effective for the combined duration.

   For example, in this Change Summary, the three assembly lines for the Lock Gimbal show the merged effectivities assigned in the short-term and long-term ECN. The **Find Number** and **Quantity** have different values that will apply during the specified date ranges.

5. Release the change.

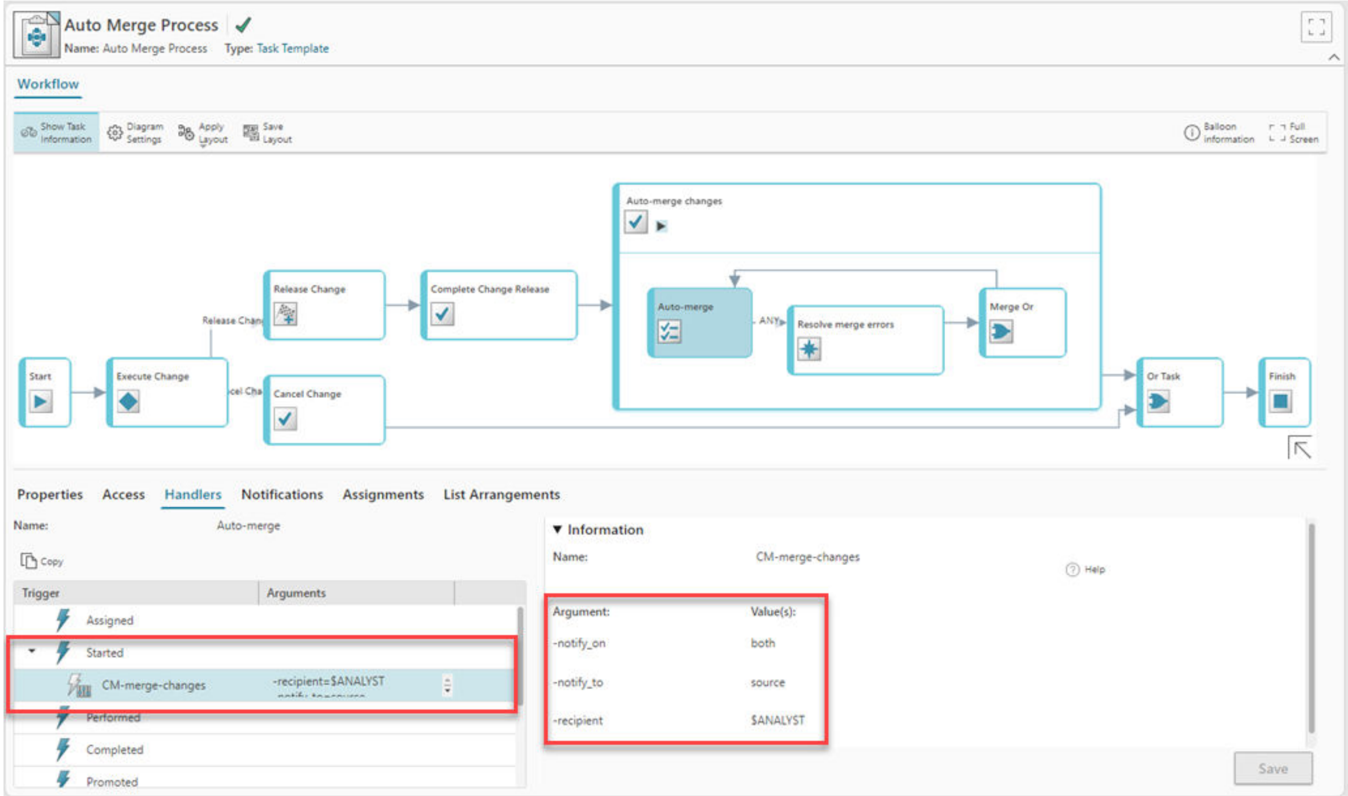
Automatically merge BOM updates from a released change into an ongoing change

Managing large merges can often be stressful, with the constant risk of missing some changes. Users can modify numerous BOM properties, as well as add, remove, or replace many items. Implementing automatic merging for updated assemblies from a released change into ongoing concurrent work can speed up the development cycle and reduce manual intervention. This is especially useful in environments with frequent updates or multiple contributors.

In a manual merge, you can integrate a released change into an in-progress change by viewing both structures side-by-side and selecting the updated items to merge. However, you also have the ability to ignore any changed items, making merging optional. During an auto-merge, when a change is released, all ongoing work-in-progress changes are immediately updated to incorporate the released change.

Prerequisites

To auto-merge change notices, the change release workflow must include a task with the CM-merge-changes workflow handler attached. This handler identifies the specific task(s) that use the auto-merge capabilities and determines if and when other users are notified.



> Note:
>
> Teamcenter provides a sample out-of-the-box workflow that demonstrates how to use this handler in the change release process. See the **Auto Merge Process** template.

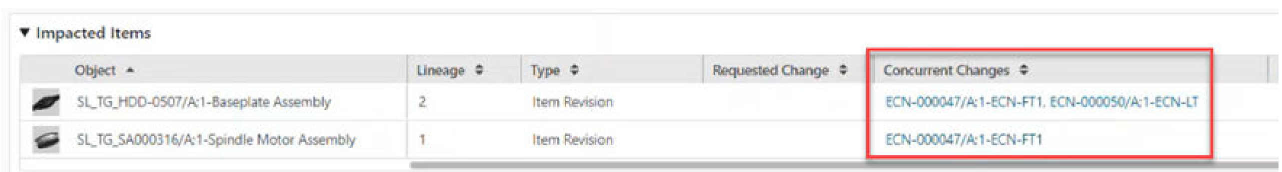
Since the CM-merge-changes handler is configured and running in the background on the task, a notification summarizing the auto-merge details is sent to the users specified in the **-recipient** argument of the handler. Your administrator can configure the notification mode (email, alert, or both) through the user-based **WRKFLW_notification_mode** preference. See the section **Results** for more information.

Procedure

1. Open the fast track change notice that includes the assembly to update. This change notice will eventually be released and auto-merged into the other work-in-progress change(s).

   When another user makes a concurrent change to the assembly being updated, the **Concurrent Changes** column in the **Impacted Items** table on the **Affected Items** tab shows the change notice(s) happening simultaneously for the affected assembly.

   This indicates to each user that another change notice has been opened for the assembly. For example, User A can see that there are two concurrent changes opened for the Baseplate Assembly and one for the Spindle Motor Assembly, in addition to his own change notice.



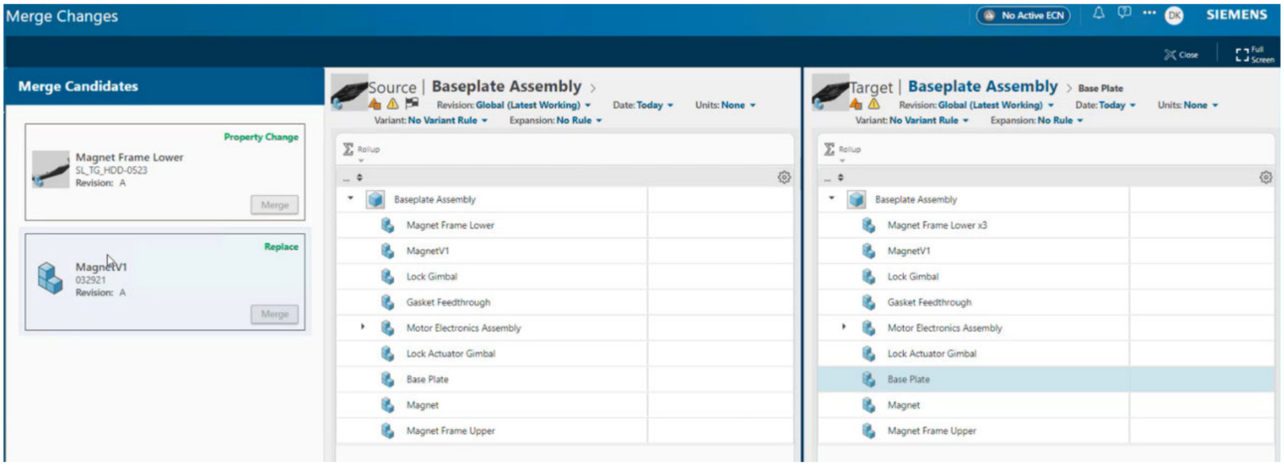
▼ Impacted Items

Object	Lineage	Type	Requested Change	Concurrent Changes
SL_TG_HDD-0507/A;1-Baseplate Assembly	2	Item Revision		ECN-000047/A;1-ECN-FT1, ECN-000050/A;1-ECN-LT
SL_TG_SA000316/A;1-Spindle Motor Assembly	1	Item Revision		ECN-000047/A;1-ECN-FT1

2. Once the assembly is ready, click **Release Change** on the **Overview** tab.

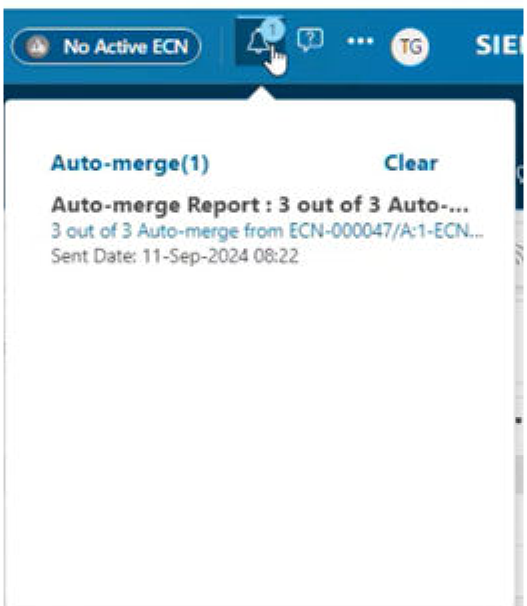
   The released change notice's modifications are automatically merged into all other applicable open concurrent changes.

   The Change Summary for the released change notice and the concurrent change notice(s) displays the updated assembly. A green icon indicates merged assembly items. Click this merge icon to view a side-by-side comparison of the source and target merges. The released change (source) will override any changes made to the same assembly item(s) in the concurrent changes (target).



Results

Since the CM-merge-changes handler is configured and running in the background on the task, a notification summarizing the auto-merge details is sent to the users specified in the **-recipient** argument of the handler.

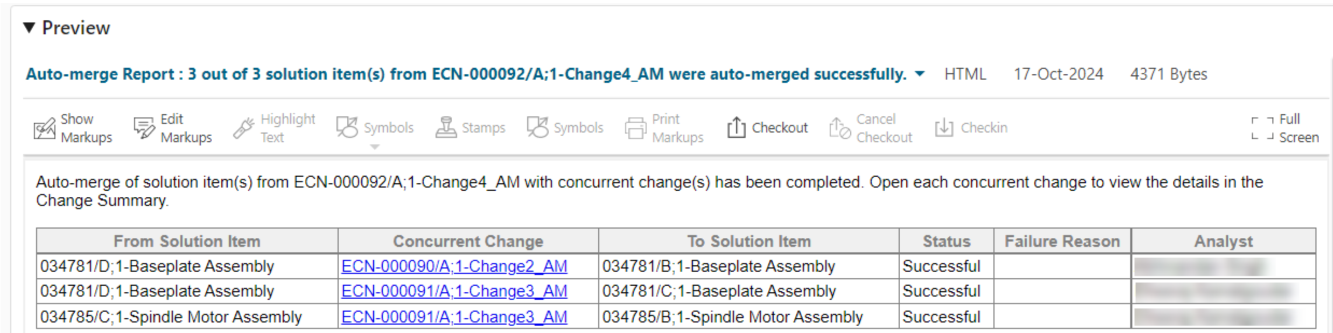


Clicking the link in the notification takes you to the summary page, which lists details about the solution items that were auto-merged. The summary page also includes a **Related Objects** link to the **Auto-merge Report**.

Successful auto-merge:

Failed auto-merge:

This table shows that the updates were successfully integrated into the same assemblies within the concurrent change notices of both users.



From Solution Item	Concurrent Change	To Solution Item	Status	Failure Reason	Analyst
034781/D;1-Baseplate Assembly	ECN-000090/A;1-Change2_AM	034781/B;1-Baseplate Assembly	Successful		[illegible]
034781/D;1-Baseplate Assembly	ECN-000091/A;1-Change3_AM	034781/C;1-Baseplate Assembly	Successful		[illegible]
034785/C;1-Spindle Motor Assembly	ECN-000091/A;1-Change3_AM	034785/B;1-Spindle Motor Assembly	Successful		[illegible]

This report lists:

- **From Solution Item**

  The solution item of the source/released change notice.

- **Concurrent Change**

  - The target/open change notice in the source change's auto-merge report.

  - The source/released change notice in the target change’s auto-merge report.

- **To Solution Item**

  The solution item of the target/open change.

- **Status**

  The state of the merge(s): **Successful** or **Failed**.

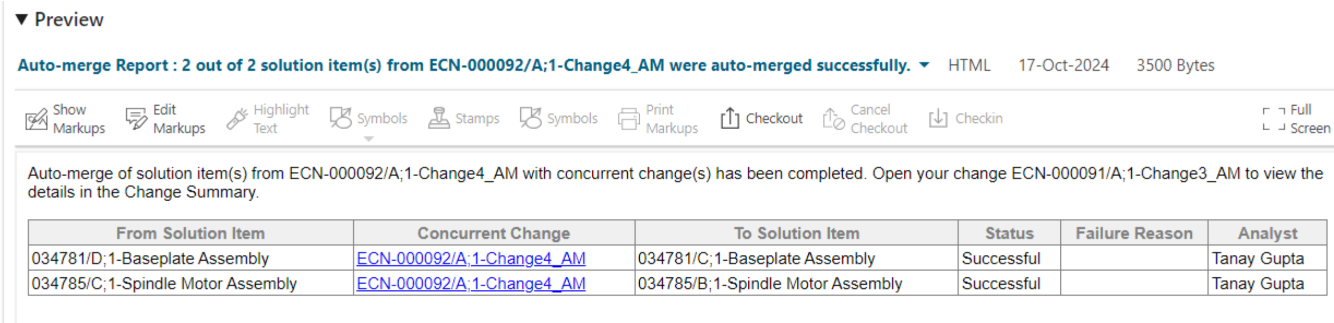
- **Failure Reason**

  A specific explanation or cause for why the merge was unsuccessful.

- **Analyst**

  The Change Analyst of the concurrent change.

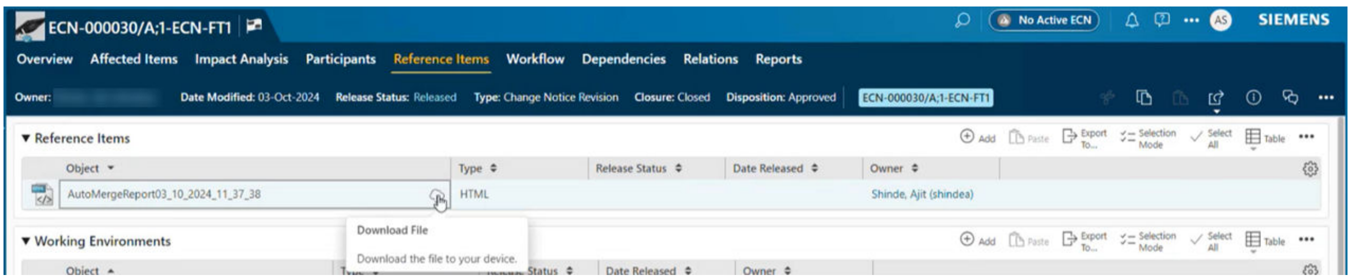
Change Management generates a unique auto-merge report for each source and target change notice. Each report lists the concurrent change(s) and corresponding analyst for that change. For example, this report was received for the target/open changes for the same instance as in the previous report:



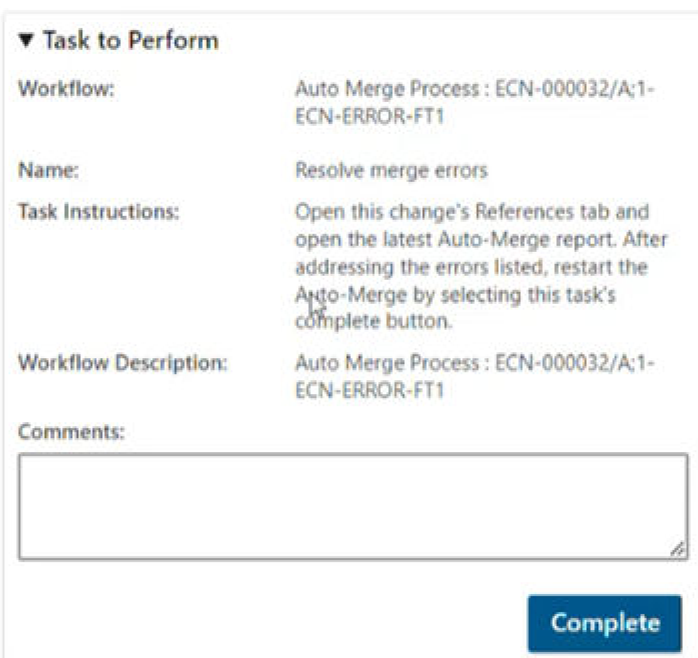
Auto-merge of solution item(s) from ECN-000092/A;1-Change4_AM with concurrent change(s) has been completed. Open your change ECN-000091/A;1-Change3_AM to view the details in the Change Summary.

From Solution Item	Concurrent Change	To Solution Item	Status	Failure Reason	Analyst
034781/D;1-Baseplate Assembly	ECN-000092/A;1-Change4_AM	034781/C;1-Baseplate Assembly	Successful		Tanay Gupta
034785/C;1-Spindle Motor Assembly	ECN-000092/A;1-Change4_AM	034785/B;1-Spindle Motor Assembly	Successful		Tanay Gupta

This report is also available to open or download on the **Reference Items** tab of the released (source) and open (target) change notice (appended by the date, which provides a history for the auto-merges).



If an error occurs, a task is sent to the owner of the released change in the Inbox on the **Overview** tab. Instructions are provided to address the errors and restart the auto-merge by clicking **Complete**.



Examples

When performing an auto-merge of change notices, Change Management handles modifications based on whether they are conflicting or non-conflicting. For example, when the source and target change notice have non-conflicting modifications made (edits made to different items in the BOM), all edits are auto-merged.

However, when two change notices have conflicting changes (different values made to the same BOM line) the source's change notice modifications take precedence. For example, if a source change notice increases a BOM line part's **Quantity** value from **1** to **2**, and the target change notice changes the **Quantity** value from **1** to **3**, the auto-merge will take the source's value and keep it as **2**.

7. Managing change lineage

Change lineage overview

Change lineage tracks the evolution of impacted items through a relationship between **Solution Items** and the corresponding **Impacted Items**. It helps ensure that the change impact can be understood by downstream systems such as manufacturing and purchasing, and provides audit information.

Impacted Items are the old revisions or versions of content (parts, design elements, part usage, document and item revision) that are revised, versioned, or replaced as part of the change.

Solution Items are the new revisions or versions of content that are released by this change.

Capture change lineage information

Manually set change lineage

1. From the **Change Summary**, select one item from the **Solution Items** table.

2. Click **Create Replace Group** .

3. In the **Set Lineage** dialog, selected the object to link to the **Solution Item**.

   The lineage number is assigned, and it appears in the Lineage column for both the **Solution** item and the **Impacted** item, indicating that lineage is established.

Automatically set change lineage

Change lineage is automatically set if you create a revision to an object when a change notice is selected as an **Active Change**.

A revision created from a change object is automatically added to the **Solution Items** table and the lineage is set and displayed in the **Lineage** column.

Delete change lineage information

You can delete the change lineage by deleting relations between a group of solution items and their respective impacted items associated with the lineage group.

1. From the **Change Summary** tab, select one or more objects in the **Solution Items** table for which to delete lineage.

2. Click **Remove Replace Group**.

A message indicates that the lineage was unset. The **Lineage** column is now empty for the **Solution** items and their respected **Impacted** items.

Replacement groups

Parts and assemblies are often added to and deleted from a product structure during its construction or modification. Some of these additions and deletions can be grouped together as a *replacement* action. For example, two added parts may replace the form and functionality of one canceled component, making a replacement. When you create and replace groups in a product structure, a graphical representation (often referred to as a supercedure) is created that represents the replacement history of a given occurrence in the product structure.

Oftentimes, various intricate relationships are formed during a change to an object. For example, in Change Management, a solution to an impacted item is not always a revision of the impacted item. It can be a separate item (for example, a markup). In addition, there can be more than one revision of the same item in either or both the **Impacted Items** and **Solution Items** folders.

Creating replacement groups can assist with simplifying these complex relationships by tracking the evolution of impacted items through a relationship between **Solution Items** and the corresponding **Impacted Items**. This helps ensure that the change impact can be understood by downstream systems such as manufacturing and purchasing, and provides audit information.

Create replacement groups

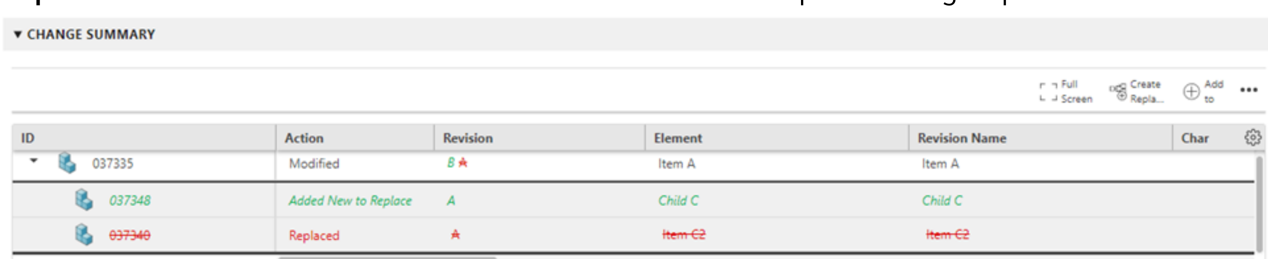
Create replacement groups (or a supercedure) to represent the replacement history of a given occurrence in the product structure.

Procedure

1. In the **Change Summary**, select multiple rows with the **Action** columns listed as **Added New** and **Removed** to create a new replacement group. All selected rows must be under the same parent object.

2. Click **Create Replace Group** .

   A message indicates that the replacement group was set successfully. The **Added New** items display as **Added New to Replace** and the removed item displays as **Replaced** in the **Action** column. A black outline borders the replacement group.

Delete replacement groups

You can remove the create-replace group relationship by deleting the interaction between a group of solution items and their respective impacted items associated with the lineage group. This removes future traceability between the **Impacted Items** and the **Solution Items**.

Procedure

1. In the **Change Summary**, select the **Added New to Replace** object.

2. Click **Remove Replace Group**.

   A message indicates that the replacement group was removed. The replacement group and **Action** column display the previous action types.

Genealogy

In a parent assembly, *genealogy* provides a visual representation of how a particular occurrence in an assembly evolves over multiple ECNs.

Genealogy for any part correlates to a parent assembly that was successively revised with a property change or a replacement group of changes. Genealogy can *only* be viewed in the context of the parent assembly.

For example, our manufacturer creates the Spindle Motor Assembly. The Spindle Motor Assembly includes a part called Bearing-Old. This assembly has gone through a number of replacement group changes via the following ECNs:

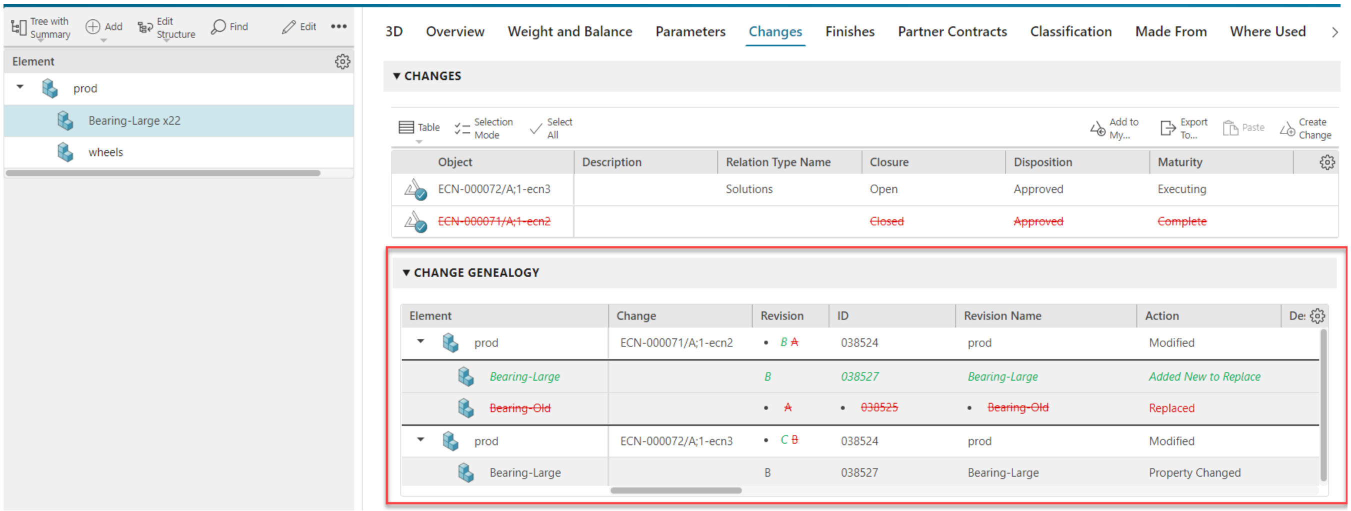
- **ECN1**

  Spindle Motor Assembly is revised from A to B. Bearing-Old is replaced with Bearing-Large, and the ECN is released.

- **ECN2**

  Spindle Motor Assembly is revised from B to C. The Quantity property of Bearing-Large is increased and the part is replaced.

Now, the **Change Genealogy** displays this evolution of the Bearing in the context of the Spindle Motor Assembly.



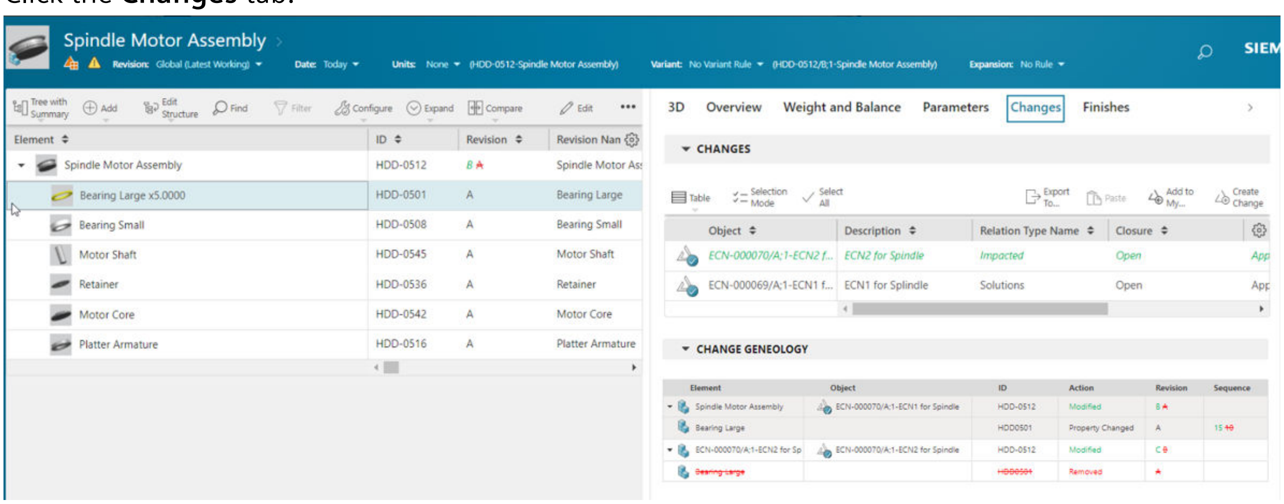
View the genealogy of a part or assembly

Genealogy is the evolution of the part and changes. It provides a visual representation of how a particular part in an assembly structure evolves over multiple ECNs in the context of its parent.

Procedure

1. Open any revision of an assembly and select a part that has multiple ECNs opened against it.

2. Click the **Changes** tab.



- The ECN assembly on the left panel lists changes from top to bottom, identifying how the part has evolved from when it was first created to its current state.

- On the right panel, the top **Changes** table shows the list of ECNs associated with the selected part.

- The **Change Genealogy** table shows how the selected part evolved and highlights the changes that were made for each ECN in the assembly, in the context of the parent revision. Use the scroll bar to view all the revisions in the table.

8. Generating change reports

Generate the Change Item Report

The **Change Item Report** summarizes the information in the **Overview**, **Affected Items**, **Reference Items**, and **Participants** tabs of a change notice. This also includes revision information from the **Change Summary**, if available.

1. Select a change notice.

2. Go to **More Commands** ••• > **New** > **Generate Report** from any tab.

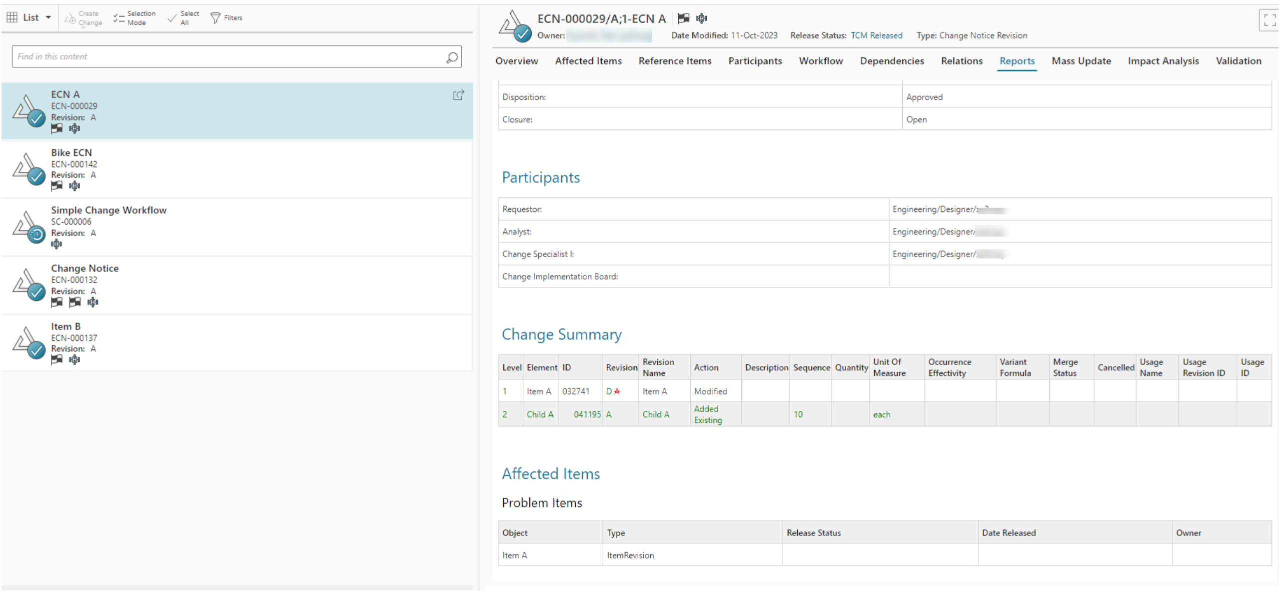
3. Select **Change Item Report**.

4. (Optional) Enter a unique name for **Save to FileName** to save the report.

5. (Optional) Generating the report could take several minutes. You can select **Run in Background** to continue working while the report is generated.

6. Click **Generate**.

   The **Change Notice Report** opens in the **Reports** tab of the change notice and saves a copy of the report in **Reports** > **Saved Files**.



Generate the As Planned/As Released baseline report

The **As Planned/As Released baseline report** displays the structural hierarchy of an object and provides details about attached documents, the authorizing change notice, effectivity, and release date. It also displays the planned change notice for in-process documents as well as change effectivity.

> Example:
>
> Run the report on an assembly with multiple levels, attachments, and revisions. The report identifies affected items with document attachments and their respective change notices.
>
> To see the structure of a change notice, generate the **Change Item Report**.

1. Select an object.
2. Go to **More Commands** > **New** > **Generate Report**.
3. Select **As Planned As Released Baseline Report**.
4. (Optional) enter a unique name for **Save to FileName** in the **Generate Report** panel.
5. Click **Generate**.

   Generating the report could take several minutes. You can optionally click **Run in Background** to continue working while the report is generated.

   The report automatically opens in the **Reports** tab.

   A copy of the report is available in **Reports** > **Saved Files**.

The report's table is broken down into three main sections. The contents of the columns are dependent on the structure configuration, whether or not an attachment is revised or released, and if it is part of a change notice.

> Note:
>
> Revisions to document attachments are not automatically updated in the **Attachments** tab. When a document attachment is revised, manually add it to the **Attachments** in order to accurately display the revision history in the **As Planned As Released** report.

Items

Contains all of the items in an assembly.

Documents As Planned/As Released

Contains documents and other attachments.

If an attachment is released as part of a change with a **Proposed Effectivity** this is listed in the Effectivity Date column with the related change notice number in the Change Notice column. If the attachment was not released as part of a change, those columns are empty.

Planned Changes

Contains only items that currently part of an unreleased change. Solution items that are revisions of an impacted item are added and include the change notice. The related impacted items shows that it will be deleted.

The **CM_PRIMARY_DOCUMENT_RELS** preference must be configured by your administrator in order for the baseline report to run. It defines the relations through which a document is attached to an Item Revision. If a document is primary and the Item Revision is secondary in the relationship, the prefix **S2P:** must be provided.

The default settings are as follows:

IMAN_specification

Fnd01isDescribedByDrawing

FND_TraceLink

FND0DesignToBomRelation

IMAN_METarget

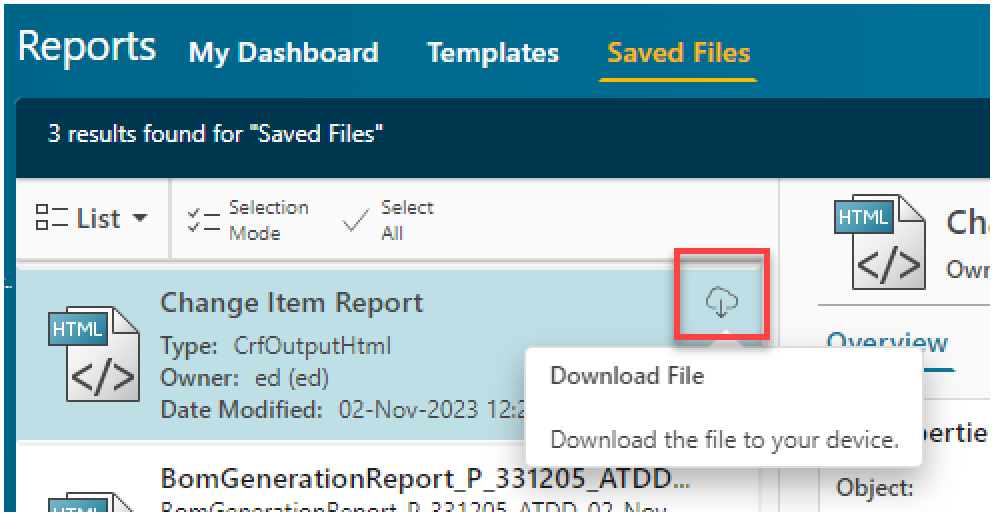
Allowable values are any relation that can be associated with an ItemRevision.

View and share reports

1. On the **Home** page, click the **Reports** tile.

2. Select a report from the list to preview it.

3. Select a report and click download .



The file is saved as an HTML file in the default downloads location.

4. Go to **More Commands** ••• > **Share** > **Copy Link** to copy the report link to your clipboard and paste the link into an email or any other message for distribution.

5. (Optional) Open the downloaded file in a browser to view or print the report.

9. Setting change relations

Set change dependency

You can order and sequence change notices with respect to each other across change requests, by designating a change notice as before, after, or concurrent with respect to another change notice. There are three dependency types: **Preceding**, **Concurrent**, and **Succeeding**.

Only privileged users can manage change sequencing. More information on the following conditions can be found in *Business Modeler IDE* in the Teamcenter collection.

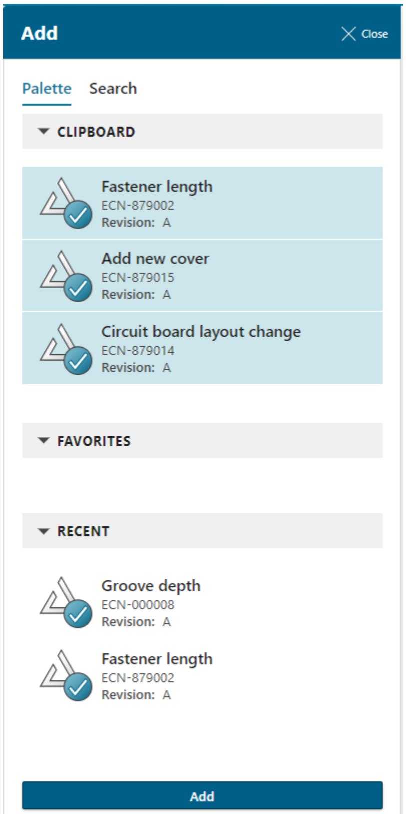
- **Cm0IsCmDependencyEditableForPrimary**
- **Cm0IsCmDependencyEditableForSecondary**
- **Cm1Awp0CutCmdCond**
- **Cm1SequenceChangeCmdCond**

> Note:
>
> Your administrator can set the **CM_validate_changeNotice_dependency** preference. This preference controls the change notice dependency when adding a release status to a change notice revision. The default value is **false**.

1. Copy the change notices to sequence by selecting them and clicking **Copy**.
2. Select the change notice you want to sequence the copied change notices with, and click **Dependencies**.
3. In the row containing the dependency type (**Preceding**, **Succeeding**, or **Concurrent**), click **Add**.

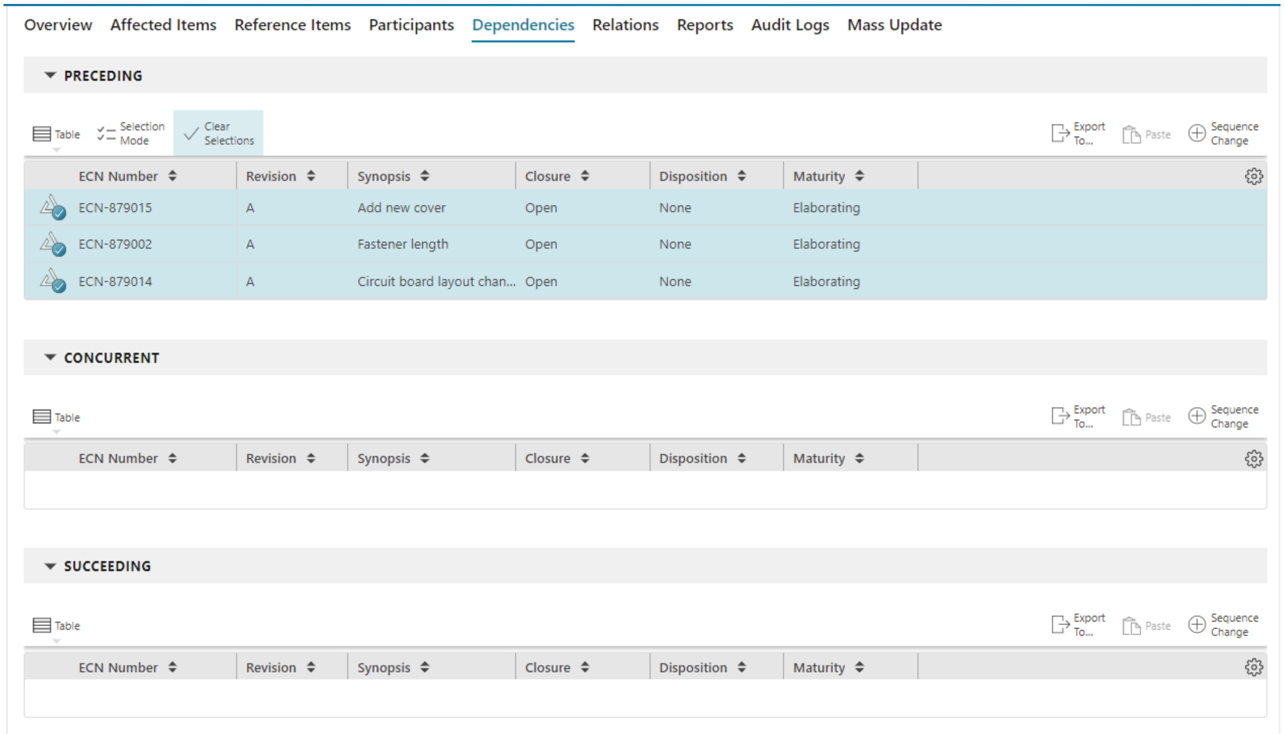
   The **Add** palette appears.

   Alternatively, you can select **Search** from the **Add** panel, and search for the specified change notice.



4. Select the copied change notices from the palette clipboard, or those returned from the search, and click **Add**.

   The relations are created and appear as sequenced under the appropriate heading.



View change relations

Improve efficiency by graphically viewing and exploring change dependencies using the relations diagram. This provides a graphical representation of the dependencies in a change sequence.

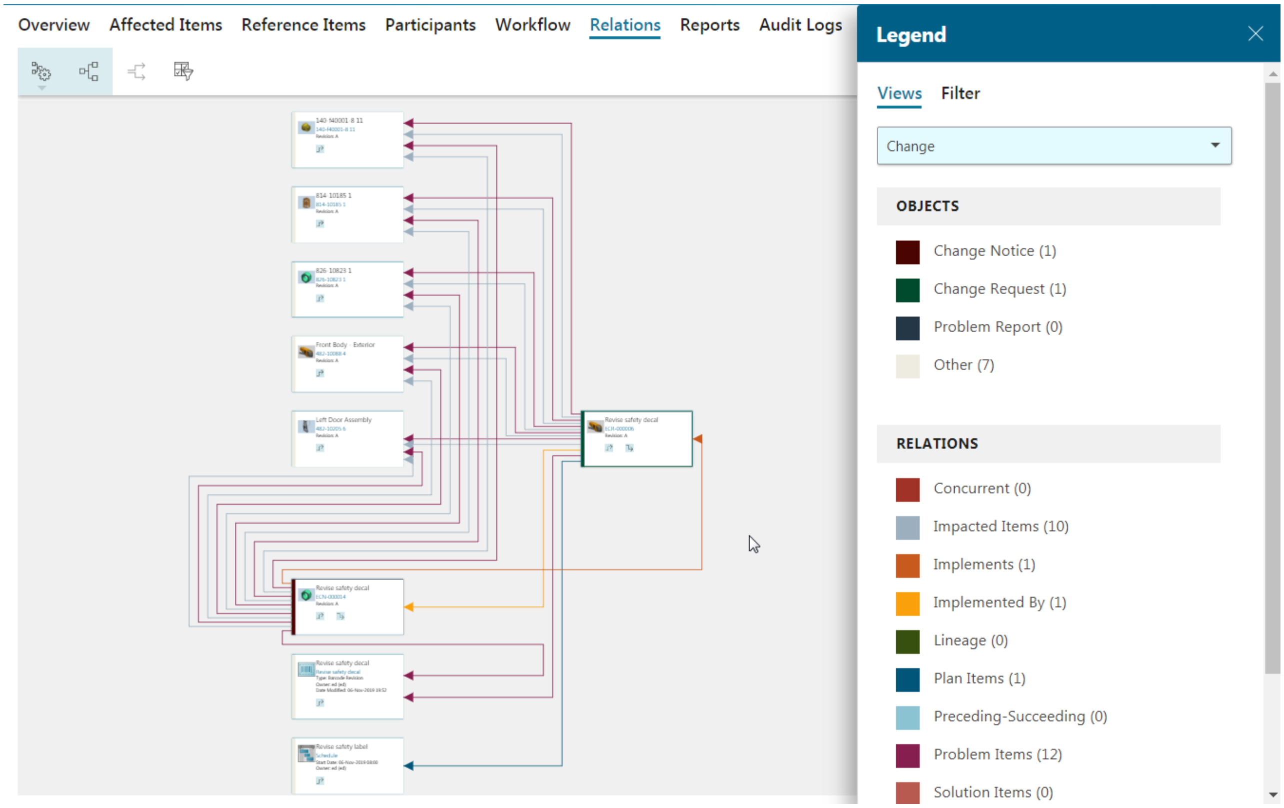
1. Open the change notice to view.

2. Click the **Relations** tab and then **Legend** to open the **Legend** panel.

3. Select **Change** from the list of available views.

4. Select the **Object** or **Relation** you want to view from the **Legend** panel.

   The **Legend** displays the full **Change** view. You can switch between the **Change** or **Change Impact Analysis** view without navigating to the **Impact Analysis** tab.



The diagram is arranged to show preceding through succeeding items, based on diagram layout. The legend appears on the right side of the window. In addition to the legend, the number of objects or relations of each type is indicated.

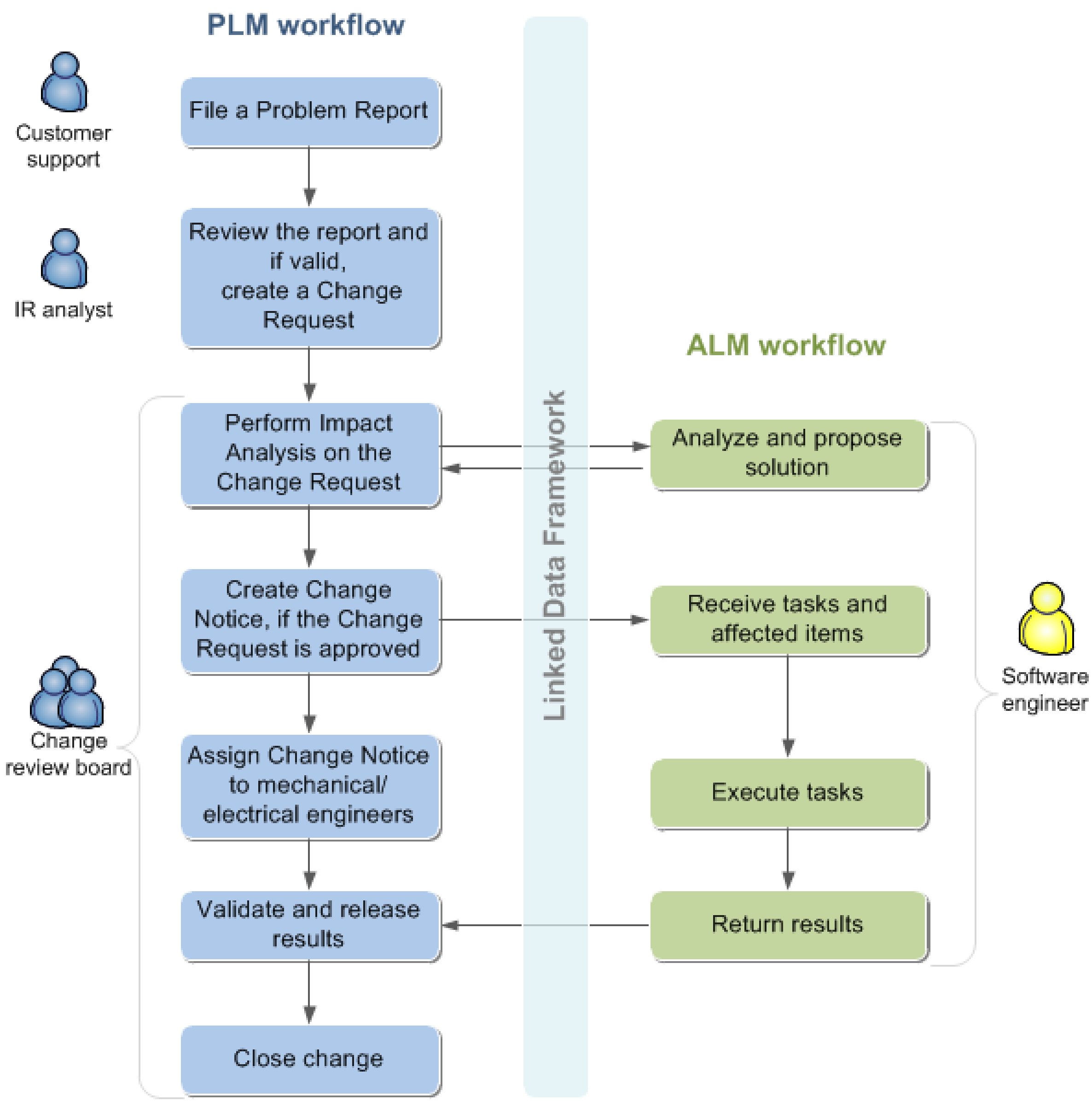
Color	Represents
Objects	
Burgundy	Change notice
Forest green	Change request
Navy blue	Problem report
Pale gray	Other
Relations	
Rust	Concurrent
Gray	Impacted items
Orange	Implements
Yellow	Implemented by
Olive Green	Lineage
Turquoise	Plan items
Light blue	Preceding-succeeding
Magenta	Problem items
Salmon pink	Solution items

10. Linking Active Workspace change elements to external application elements

Overview of linking changes using Linked Data Framework

Linked Data Framework is an integration framework based on linked data standards. Using Linked Data Framework, customizers can integrate Teamcenter with external applications such as Polarion.

The following process depicts an integration between Teamcenter, which is a PLM application, and an ALM application by using Linked Data Framework.



Elements in Teamcenter are associated with the external elements using HTTP links or remote links. Once a remote link is created, you can view the external element within Teamcenter. For example, you can create a link from a change request in Teamcenter to a software defect in the external application. Once this is done, you can view the software defect from Teamcenter.

Customizers must set up the integration before you can use it.

Creating and deleting links

Link to a change by creating a resource in the external application

By default, *items*, *change*, and *requirements* are the only elements that Linked Data Framework supports. Contact your administrator if you wish to create links for other Teamcenter elements.

1. Select a change and then click the **Reference Items** tab.

2. In the **Remote Links** section, click **Create Remote Link** ⊕.

3. In the **Add** panel, update the properties as follows:

   a. Select the project from the **Project** list.

   b. Click the **New** option.

   c. To create a resource in the external application, click **Add** ⊕ next to the **Remote Reference** label.

      Log on to the external application if prompted and create the resource in that application.

   d. Click **Create** to go back to the **Add** panel.

   e. From the **Relation Type** list, select the relation you want to create between Teamcenter and the external element.

      > Note:
      >
      > If only one relation is applicable, this relation is used automatically. Manual selection is not required.

   f. In the **Add** panel, click **Add** to create the link.

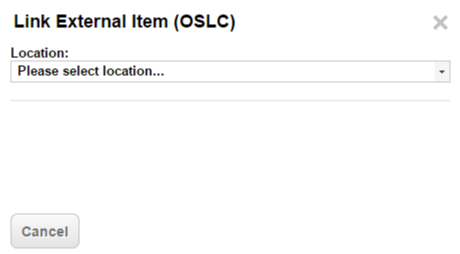
      The new links appear in the **Remote Links** section.

Create a link from the external application by selecting a change in Teamcenter

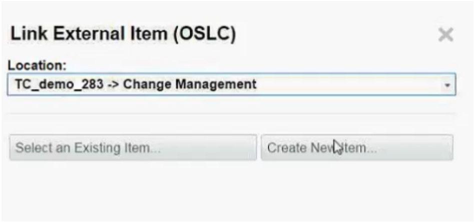
The exact method for creating a link to a Teamcenter resource from an external application differs across applications. Refer to your application documentation for more information.

In Polarion, you can create a link to a Teamcenter change request as follows:

1. In Polarion, navigate to a project and select a work item such as Issue.
2. In the **Linked Work Items** section, click **Edit** .
3. Select a relationship for the link from the **Role** list.
4. Click **Select Work Item from Linked Data Friend Server** .
5. In the **Link External Item (Linked Data)** dialog box, select a service provider from the **Location** list.



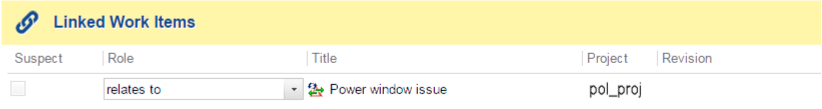
6. Click **Select an Existing Item**.



If this is a new session, you must log on to Teamcenter.

7. From the **Select** dialog box, select the change, and click **OK**.

The link to the Teamcenter Change Request is created in Polarion.



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1. In Polarion, navigate to a project and select a work item such as Issue.

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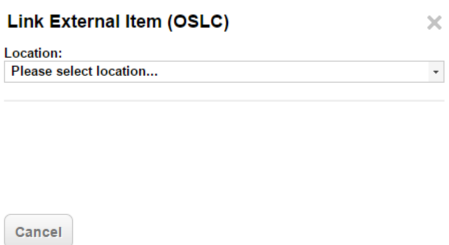
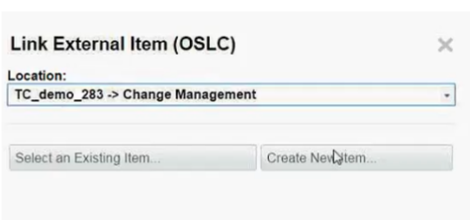


6. Click **Create New Item**.

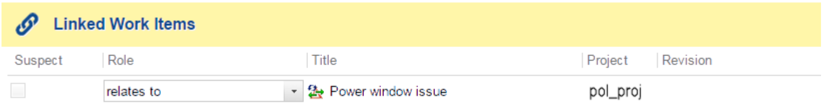


   If this is a new session, you must log on to Teamcenter.

7. From the **Create** dialog box, select the *Change type*, for example, **Change Request**.

8. Update the properties of the change and click **Add**.

   The link to the Teamcenter Change Request is created in Polarion.



Link to a change by selecting an existing resource in the external application

By default, *items*, *change*, and *requirements* are the only elements that Linked Data Framework supports. Contact your administrator if you wish to create links for other Teamcenter elements.

1. Select a change and then click the **Reference Items** tab.

2. In the **Remote Links** section, click **Create Remote Link**.

3. In the **Add** panel, update the properties as follows:

   a. Select the project from the **Project** list.

   b. Click the **Existing** option.

   c. To select a resource in the external application, click **Add** next to the **Remote Reference** label.

      Log on to the external application if prompted and select an existing resource in that application. This action takes you back to the **Add** panel.

   d. From the **Relation** list, select the relation you want to create between Teamcenter and the external element.

      > Note:
      >
      > If only one relation is applicable, this relation is used automatically. Manual selection is not required.

   e. Click **Add** to create the link.

      The new links appear in the **Remote Links** section.

Delete remote links

1. Select a remote link.

2. Go to **More Commands** > **Edit** > **Delete Remote Link**.

   When you delete a remote link, backlinks are also deleted.

11. Viewing external links

View and edit resource information for external applications in Active Workspace

1. Select a remote link and click **Open** to see information about the link in the **Preview** tab.

2. To edit the external resource, go to **More Commands** ••• > **Edit** > **Start Edit** and update the resource.

3. To save the edits, use the save functionality of the external application. This is available as an embedded section in Active Workspace.

View links to objects in external applications using the Relations tab

The Relations tab allows you to view and navigate the relations between different objects in a graph view. With Linked Data Framework, you can view the relations between Teamcenter objects and objects in external applications.

A relations graph shows two elements: objects and relations. When you click the **Relations** tab or expand relations, you may need to log on to external applications.

You can perform all the operations that Relations supports such as expand, collapse, filter content, and change layout with Linked Data Framework objects. You can also expand external objects.

You can also expand to all the levels below the Requirement Collections artifact in Polarion, for example, a Polarion Live Document.

12. Change management configuration

Change management configuration tasks

What is change management?

Change management is an organized way to implement changes to products and ensure the quality of every change. Users can access the changes they have implemented by clicking the **CHANGES** tile to display the **Changes** page.

Why configure change management?

How your organization processes changes is unique, and you can configure aspects of how changes are handled to match your organization's process. For example, you can set a different default workflow to be initiated when a user submits a change request.

What can I configure?

You can configure the following aspects of change management:

- **Set the default workflow**.
- **Configure how changes are derived**.
- **Define deep copy rules**.
- **Setting up filtering in the Changes page**.
- **Configure the contents of tabs in the Changes page**.

What do I need to do before configuring?

Before you can configure change management, you must add the application to your existing Teamcenter environment.

1. Log on to Deployment Center and select the environment to which you want to add Change Management.
2. Go to the **Applications** tab. Click **Add or Remove Selected Applications**.
3. In the **Available Applications** panel, use the web browser search to find the **Change Management** application. Select the application, and then click **Update Selected Applications**.

   Deployment Center automatically selects any additional dependent applications.

4. Go to the **Deploy** tab. Click **Generate Install Scripts** to generate deployment scripts you will use to update affected machines.

   When script generation is complete, note any special instructions in the **Deploy Instructions** panel.

5. Locate deployment scripts, copy each script to its target machine, and then run each script on its target machine.

   For more information about running deployment scripts, see *Deployment Center —Usage*.

Or, if you see Teamcenter Environment Manager (TEM), add the following features in the **Features** panel:

- **Change Management** (server)

  Installs the server-side definitions for changes.

  Select **Active Workspace→Server Extensions→Change Management**.

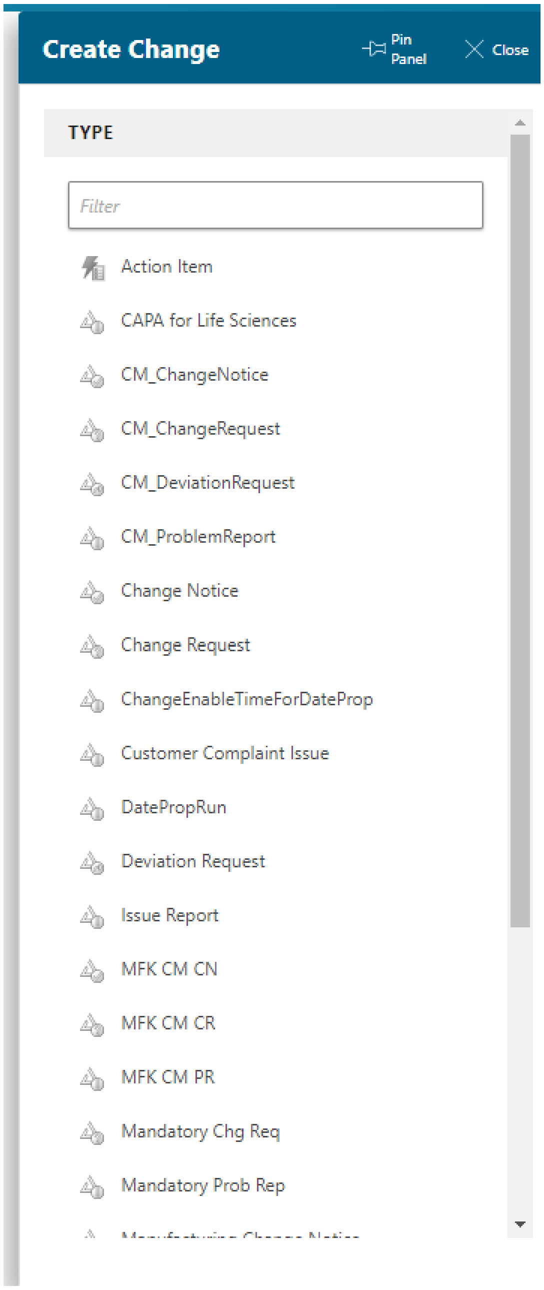
- **Change Management** (client)

  Installs the user interface elements for viewing changes in Active Workspace.

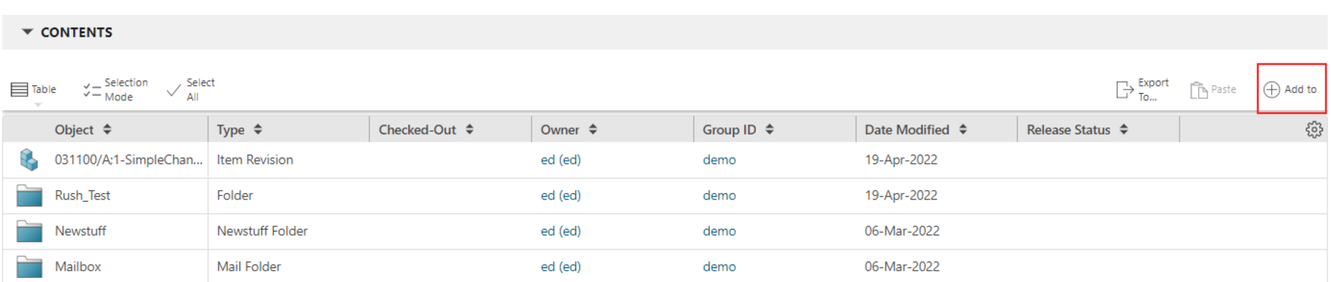
  Select **Active Workspace→Client→Change Management**.

Configuring the availability of ChangeItem custom objects

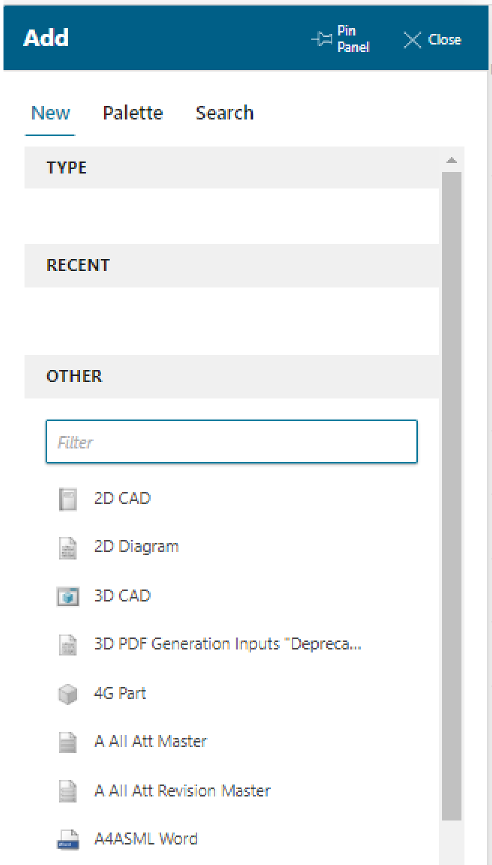
User-defined child objects of the **ChangeItem** business object are displayed in the **Create Change** panel (**More Commands** ••• > **New** > **Create Change**. These are based on the creatable conditions defined in BMIDE.



Custom child objects can also be made available on the **Home** page (click **Folders**). Click **Add to** (above the **Contents** table):



This displays the **Add** panel containing the custom child objects.



To implement this behavior, add the internal names of the custom child objects of the **ChangeItem** business object to the **AWC_TypeSelectorExclusionTypeList** site-level preference.

The internal names of the following child objects are included in the **AWC_TypeSelectorExclusionTypeList** site-level preference:

- **ChangeNotice**
- **ChangeRequest**
- **ProblemReport**
- **Cm0GnWorkOrder**

Automating the submission of changes to workflow

Use the following preferences to set the default workflow that should start when a user submits a problem report, change notice, or change request. The default workflow is

ChangeItemRevisionDefaultWorkflowTemplate, which is a simple process to select a signoff team and then have each participant of the team perform his/her signoff task to approve the change.

For a	Use the preference	Its default is
Change notice revision	**ChangeNoticeRevision_default_workflow_template**	CN Fast Track Process
Change request revision	**ChangeRequestRevision_default_workflow_template**	ChangeItemRevisionDefault WorkflowTemplate
Problem report revision	**ProblemReportRevision_default_workflow_template**	ChangeItemRevisionDefault WorkflowTemplate

Configuring how changes are derived

When deriving a change from another use the **CM_automate_derive_propagation** preference to enable the automatic propagation of the relations (such as reference items and problem items) from the source change to the derived change. You configure which relations to propagate using the following preferences. For example, for a problem report enable the propagation of its problem items (**CMHasProblemItem**) and its reference items (**CMReferences**).

When deriving a change object from a	Set the relations propagated using
Problem report	**CM_ProblemReportRevision_Relations_To_Propagate**
Deviation request	**CM_Cm0DevRqstRevision_Relations_To_Propagate**
Change request	**CM_ChangeRequestRevision_Relations_To_Propagate**

You configure which change object users can derive from another using the **CM_change_derivations** preference.

For more information, refer to *Teamcenter Environment Variables* in the Teamcenter help.

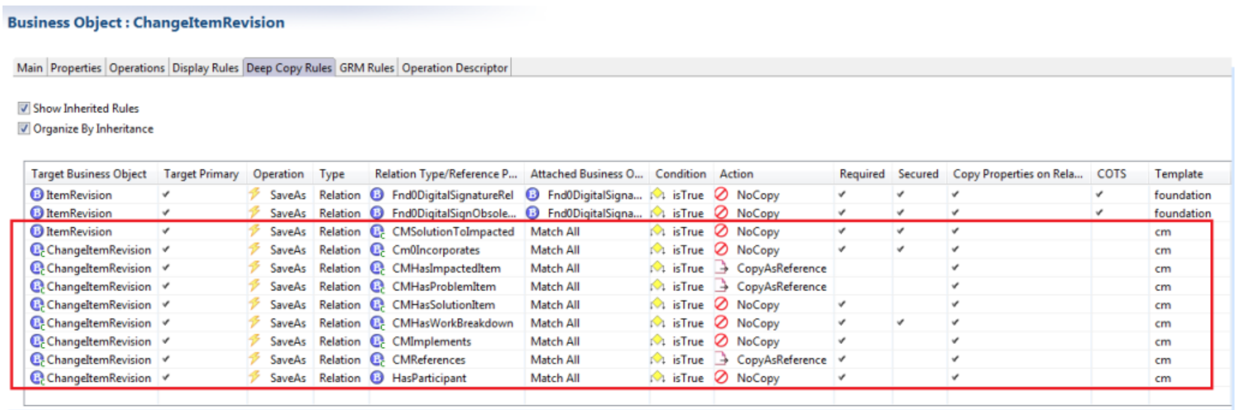
Defining deep copy rules for creating changes

Use the Teamcenter Business Modeler IDE deep copy rules to set what objects and attributes are copied when a user creates a copy of a change. Deep copy rules define whether objects belonging to a business object instance can be copied when a user performs a save as or revise operation on that instance. Deep copy rules can be applied to any business object type and are inherited by children business object types.

Using deep copy rules, you can configure whether the following are copied for a change:

- Name, subject, description
- Problem and Impacted Items
- Referenced or related documents

The figure shows the deep copy rules defined by default for a **ChangeItemRevision** in the **Deep Copy Rules** editor. The rules define that when copying a change, copy the problem, impacted, and reference objects, but do not copy the incorporates and solution items.



Target Business Object	Target Primary	Operation	Type	Relation Type/Reference P...	Attached Business O...	Condition	Action	Required	Secured	Copy Properties on Rela...	COTS	Template
ItemRevision	✔	SaveAs	Relation	Fnd0DigitalSignatureRel	Fnd0DigitalSigna...	isTrue	NoCopy	✔	✔	✔	✔	foundation
ItemRevision	✔	SaveAs	Relation	Fnd0DigitalSignObsole...	Fnd0DigitalSigna...	isTrue	NoCopy	✔	✔	✔	✔	foundation
ItemRevision	✔	SaveAs	Relation	CMSolutionToImpacted	Match All	isTrue	NoCopy	✔	✔	✔		cm
ChangeItemRevision	✔	SaveAs	Relation	Cm0Incorporates	Match All	isTrue	NoCopy	✔	✔	✔		cm
ChangeItemRevision	✔	SaveAs	Relation	CMHasImpactedItem	Match All	isTrue	CopyAsReference			✔		cm
ChangeItemRevision	✔	SaveAs	Relation	CMHasProblemItem	Match All	isTrue	CopyAsReference			✔		cm
ChangeItemRevision	✔	SaveAs	Relation	CMHasSolutionItem	Match All	isTrue	NoCopy	✔		✔		cm
ChangeItemRevision	✔	SaveAs	Relation	CMHasWorkBreakdown	Match All	isTrue	NoCopy	✔	✔	✔		cm
ChangeItemRevision	✔	SaveAs	Relation	CMImplements	Match All	isTrue	NoCopy	✔		✔		cm
ChangeItemRevision	✔	SaveAs	Relation	CMReferences	Match All	isTrue	CopyAsReference	✔		✔		cm
ChangeItemRevision	✔	SaveAs	Relation	HasParticipant	Match All	isTrue	NoCopy	✔		✔		cm

Note:

Validate that the setting **copyFromOrignal** is set to true on persistent properties to copy them during a save as or revise operation. If **copyFromOrignal** is set to false on persistent properties, the properties are not copied during save as or revise.

Refer to the *BMIDE for Data Model Design* in the Teamcenter help for more information.

Note:

Copying changes is not available in the Teamcenter rich client.

Define deep copy rules for copying options from an ECR to an ECN

Use Teamcenter Business Modeler IDE deep copy rules to configure the copying options when a user derives an ECN from an ECR. Deep copy rules define whether objects belonging to a business object instance can be copied when a user performs a **Derive** operation on that instance. Deep copy rules configure the copy option, providing the ability to select individual objects from the **Affected Items** and **Reference Items** in an ECR.

Using deep copy rules, you can configure whether the following are copied into the ECN:

- **Impacted Items**

- **Problem Items**
- **Reference Items**

You can create rules for the default relation types **CMHasImpactedItem**, **CMHasProblemItem**, **CMReferences**.

Refer to *BMIDE for Data Model Design* in the Teamcenter help for more information.

> Note:
>
> Validate that the setting **copyFromOrignal** is set to true on persistent properties to copy them during a save as or revise operation. If **copyFromOrignal** is set to false on persistent properties, the properties are not copied during save as or revise.

Create Deep Copy Rules in BMIDE

1. Create a custom template based on the **Change Manager** template.
2. Open the **Change Item Revision Business Object**.

   You can create a **Derive** deep copy rule for **GnChangeRequestRevision** and **GnProblemReportRevision**.

   - Select the **Show Inherited Rules** check box to display all rules inherited from parent business objects.
   - Select the **Organize by Inheritance** check box to sort the rules by parent business object names.
   - Use the **Add**, **Edit**, or **Remove** buttons to work with the deep copy rules.
3. Select the **Deep Copy Rules** tab and click the **Add** button to add a row for each rule.
4. Choose the business object that the deep copy rule is applied to.

   Specify the parameters for each rule.

<table>
<tr><th>Parameter</th><th>Description</th></tr>
<tr><td>Target Primary?</td><td>Mark or clear the check box as appropriate.
<table>
<tr><td>☑</td><td>When the checkbox is marked, Target Business Object is the primary object of the relationship specified in the Relation Type box. When the business object instance is revised or saved, the secondary objects are carried forward and</td></tr>
</table>
</td></tr>
</table>

Parameter	Description
	related using the relation in the **Relation Type** box.
	 When the checkbox is clear, **Target Business Object** is the secondary object of the relationship specified in the **Relation Type** box. When the business object instance is revised or saved, the primary objects are carried forward and related using the relation in the **Relation Type** box.
Operation Type	Select **Derive**.
Type	**Relation** creates the deep copy relationship
Relation / Reference Property	Select **CMHasImpactedItem**, **CMHasProblemItem**, or **CMReferences**. You will supply a rule for each relation.
Attached Business Object	For **CMHasImpactedItem** and **CMHasProblemItem** types select **ItemRevision**. For **CMReferences** select **WorkspaceObject**.
Condition	Select the condition **isTrue**.
Action	Choose the kind of copying to be allowed for the business object. The available options differ depending on the type of target business object. Select **CopyAsReference**. This creates a new relation between the new revision and the related object. Therefore, modifications performed on the copied object are propagated to the source object.
Required	Leave blank.
Secured	Select if you want to prevent the deep copy rule from being modified or overridden by another template.
Copy Properties on Relation	Select if you want persistent properties on relation objects carried forward when the primary objects participating in relations are revised or saved as new objects. If not selected, only mandatory properties are carried forward.

5. Click **Finish**.

The rule is created and appears in the table in the **Deep Copy Rules** editor.

Configuring requested change type for impacted items

As an administrator, you can configure the list of values (LOV) for the requested change types available for the **Impacted Items** table.

The **Cm0RequestedChangeLOV** is attached to the **Cm0RequestedChange** property and contains the list of requested change types.

The default LOV includes:

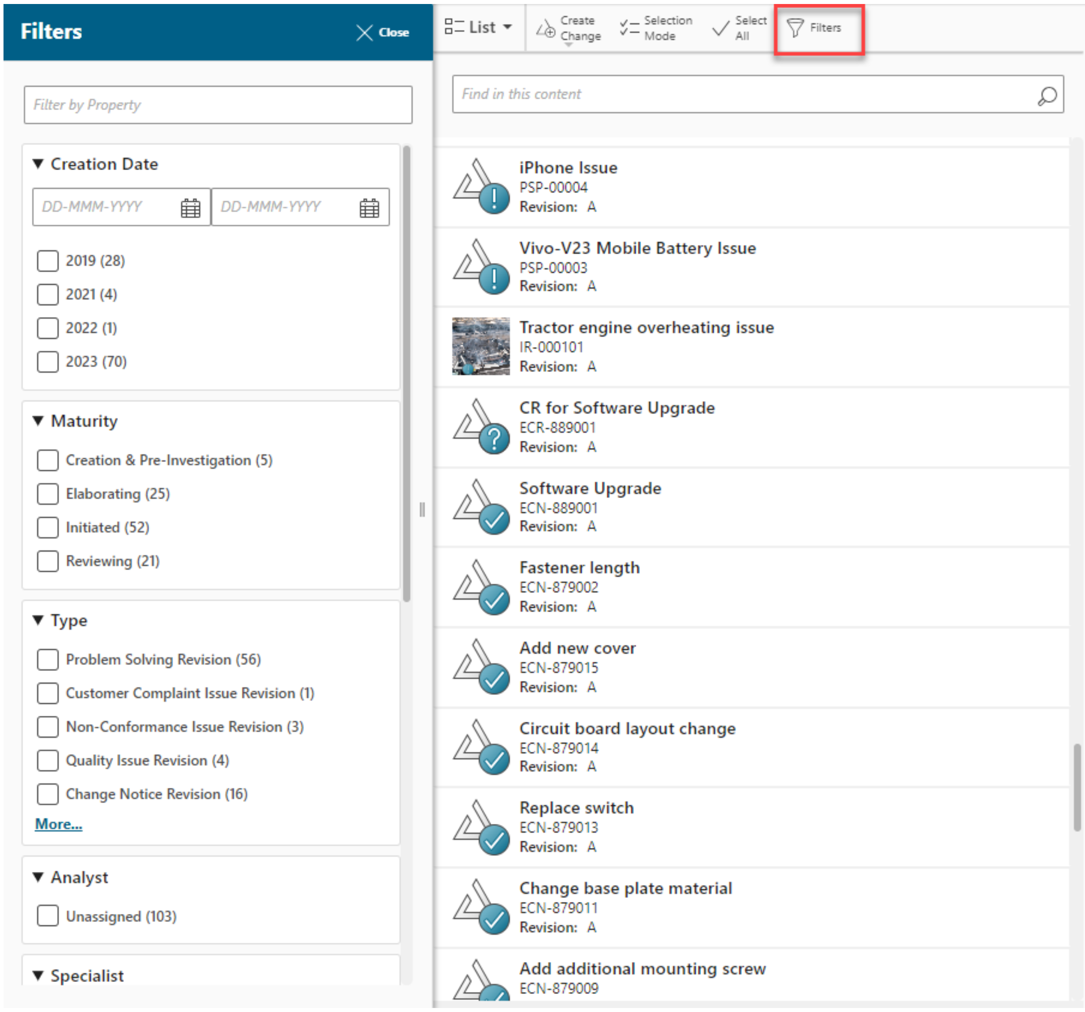
- **Revise**
- **Create New**
- **Replace with Existing**

Modify the list and the description, as necessary.

Configuring the Changes page

Setting up filtering in the Changes page

You can set the properties that filter the changes that appear in the **Changes** page for changes found when selecting the **Submitted** tab. The changes are change business objects of the **ChangeItemRevision** type and its subtypes.



To set the filter, in the Business Modeler IDE, set the following property constants on the property of the change object on which you want to filter.

- **Cm1ChangeCanFilter**

  Indicates that change business objects can be filtered on the property.

- **Cm1ChangeFilterPriority**

  Indicates the priority of the property that determines its order in the list of filters displayed in the **Changes** page. The lower the value, the higher its priority and, therefore, the higher its position in the list of filters.

  Siemens Digital Industries Software recommends that you assign values from a range to accommodate additional properties in the future. For example, assign priorities such as 100, 200, and 300, instead of 1, 2, and 3.

By default, the following properties are shown as filters for Change business objects:

- **Creation Date**
- **Maturity**
- **Type**
- **Analyst**
- **Specialist**
- **Requestor**
- **In Process**
- **Closure**
- **Fast Track**
- **Disposition**

Change filters can only be set on persistent and compound properties.

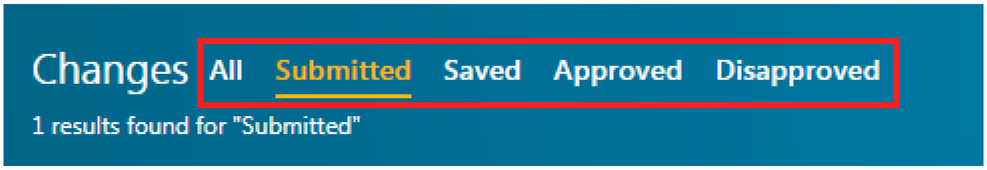
Properties supported for filtering	Properties not supported for filtering
• Date • String • References • Logical	• String properties with long string as storage • Numeric properties • Array properties

Refer to *BMIDE for Data Model Design* in the Teamcenter help for more information.

Configuring the contents of tabs in the Changes page

> Note:
>
> For more information on creating a sublocation tab, refer to Using configuration builder to manage routes.

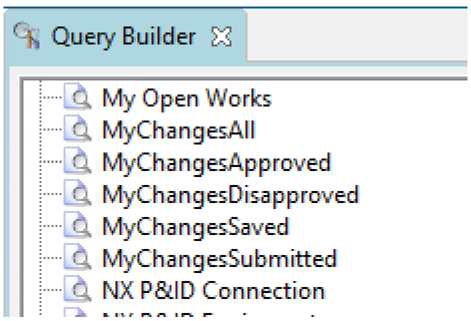
You can define which queries are used for each sublocation within the **Change** location.



The queries used for each sublocation *must* be the server-side Teamcenter platform saved queries. Saved queries in Active Workspace will not work in this case.

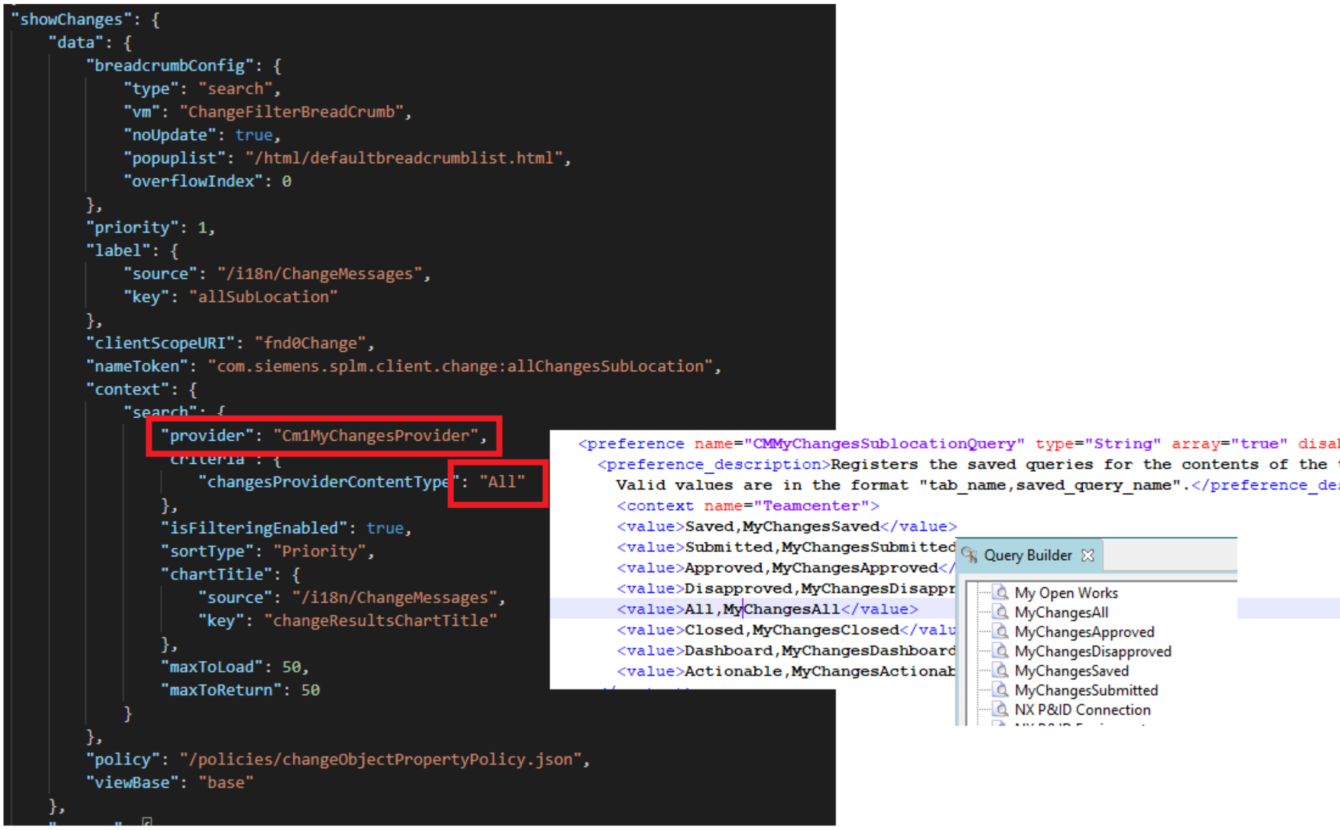
You can see a list of server-side saved queries (and execute them manually) by using Advanced Search.

You can view the definition of and create new server-side Teamcenter platform saved queries by using the Query Builder application in the rich client.



Redefining the queries of the tabs is particularly helpful when you have defined custom participants or changes. You can replace your custom participants and changes with those in the default queries so the tabs show your company's content.

You must modify the **CMMyChangesSublocationQuery** preference to modify which queries are used for each sublocation. The **Cm1MyChangesProvider** uses the preference value pairs to select the query which provides the data to the page. The preference definition contains the details of implementation.



Following are the default queries for each tab to display changes with a closure setting of **Open** and the logged-on user is the requester, analyst, or change specialist:

- **All** tab

```
Get all ChangeItemRevs where Closure=Open AND (Requestor = Logged-in User OR Analyst =
Logged-in User OR Change Specialist1 = Logged-in User)
```

- **Submitted** tab

```
Get all ChangeItemRevs where Closure=Open AND (Requestor = Logged-in User OR Analyst =
Logged-in User OR Change Specialist1 = Logged-in User) AND ProcessStageList != NULL
```

- **Saved** tab

```
Get all ChangeItemRevs where Closure=Open AND (Requestor = Logged-in User OR Analyst =
Logged-in User OR Change Specialist1 = Logged-in User) AND ProcessStageList = NULL
```

- **Approved** tab

```
Get all ChangeItemRevs where Closure=Open AND (Requestor = Logged-in User OR Analyst =
Logged-in User OR Change Specialist1 = Logged-in User) AND Disposition = Approved
```

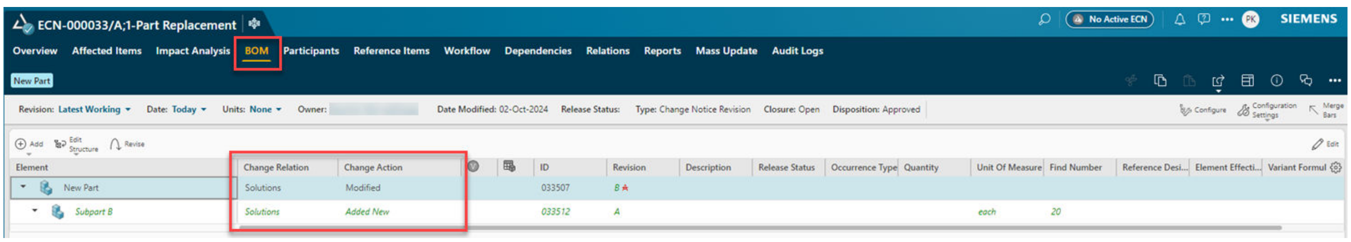
- **Disapproved** tab

```
Get all ChangeItemRevs where Closure=Open AND (Requestor = Logged-in User OR Analyst =
Logged-in User OR Change Specialist1 = Logged-in User) AND Disposition = Disapproved
```

Viewing the BOM tab for a change notice

To simplify managing multiple BOMs affected by a change notice, enable the **BOM** tab. This tab displays all impacted and solution items in an assembly, eliminating the need to navigate away from the Change Management interface. It provides essential BOM-related functionalities, including **Add**, **Edit**, **Revise**, **Revert**, **Remove**, and **Replace**.

Using the **BOM** tab, you can revise and modify parts in an assembly. It shows all affected items in one place, enabling BOM authoring and displaying redlines as in the Change Summary. The **Change Relation** column indicates the relation of the object and the **Change Action** column indicates the actions performed on the object.



You must modify the **EnableMultiBOM** preference to true from false (the default) to enable the **BOM** tab.

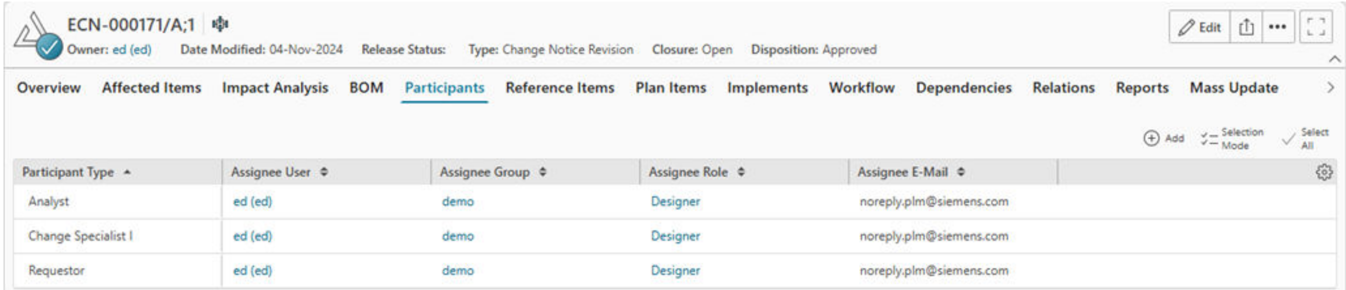
Consolidate tables in a change notice

Several preferences are available for table organization inside of a change notice.

AWC_enable_single_participants_table (false by default)

This preference consolidates all tables on the **Participants** tab into a single table. It organizes participant information by centralizing data in one location, which can make it easier to locate and manage information related to individuals involved in the change notice.

Filtering and search capabilities are available for the consolidated **Participants** table, and you can add additional participants via the **Add** ⊕ button. Right-clicking a participant provides remove and replace options as well.

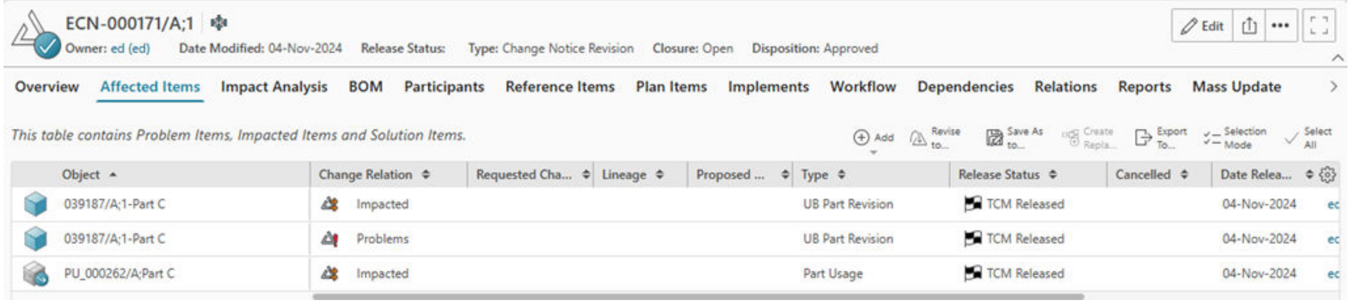


You can configure participant types for objects, such as **ChangeNoticeRevision**, using the **ParticipantUsedOnObjectTypes** business object constant. The (!) NOT operator specifies which object types should not appear for a given participant. For example, if you want to exclude the **Designer** from **ChangeItemRevision** objects and the **Requestor** from **ChangeNoticeRevision** objects, you would set the business object constant values as follows (separated by commas):

Participant Type	ParticipantUsedOnObjectTypes value
Requestor	ChangeItemRevision, !ChangeNoticeRevision
Designer	ItemRevision, !ChangeItemRevision
Contributor	ChangeNoticeRevision

CM_enable_singletable_affected_items (false by default)

This preference consolidates all tables on the **Affected Items** tab into a single table, making it easier to track and update item statuses, changes, and related information without navigating through multiple sections. You can add additional impacted, problem, or solution items to the change notice via the **Add** ⊕ button. Icons indicate the relation type.



CM_affected_items_table_source (string array)

When the **CM_enable_singletable_affected_items** preference is set to true, the **CM_affected_items_table_source** defines the relation and the business object type (separated by a dot), to be shown in the consolidated **Affected Items** tab.

Values include:

- CMHasSolutionItem.ItemRevision

- CMHasSolutionItem.Fnd0AbstractOccRevision
- CMHasSolutionItem.Mdl0ModelElement
- CMHasSolutionItem.Cfg0AbsConfiguratorWSO
- CMHasSolutionItem.Bom0ConfigurableBomElement
- CMHasImpactedItem.ItemRevision
- CMHasImpactedItem.Fnd0AbstractOccRevision
- CMHasProblemItem.ItemRevision
- CMHasProblemItem.Fnd0AbstractOccRevision