

Impact Analysis AI Agent - User Guide

Overview

The **Impact Analysis AI Agent** is a **Task Assistant Agent** within the **InnovatorEdge AI** framework. It operates directly inside Aras Innovator's Unified Change Management (UCM) system of record to assist Change Authors and Change Specialists during the drafting phase of an engineering Change Request (CR).

The agent analyzes the Change Request against your product structure and historical Change Order patterns, proposes a set of Affected Items with explicit AI-generated rationale, and lets the engineer review and selectively commit those changes, all without leaving the agent workspace.

What the Impact Analysis AI Agent Does

The agent supports engineers through four consecutive steps:

- **Select** the target Change Request from a searchable list of Draft-state CRs.
- **Analyze** the CR context by running five AI specialists in parallel against your product structure and historical Change Order records.
- **Review** a recommended set of Affected Items, each with a suggested action (Revise, Release, or Obsolete) and an AI-generated justification.
- **Commit** the accepted recommendations to the Change Request as Affected Item relationships in Aras Innovator, with rationale recorded in the SSVC comment thread for traceability.

Important

The agent is user-invoked and human-validated. No data is written to Aras Innovator until users choose to **Apply Changes**.

Prerequisites

Before starting an analysis session, confirm the following:

- **CR content:** The target Change Request must have substantive text in the **Title** and **Reason of Change** fields. Sparse or empty fields reduce recommendation quality.
- **Product structure:** Parts in the CR's existing Affected Items should have their structural links and child relationships correctly declared in Aras Innovator. Gaps in the product graph reduce



recommendation coverage.

- **Item number requirement:** The agent identifies recommended items by their `item_type` and `item_number` values. Items without an `item_number` value may be skipped or misidentified in the recommendation set. For standard UCM ItemTypes this is not an issue. For custom ItemTypes where `item_number` is not required or not unique, recommendations for those items may not work as expected - verify data quality before running analysis.
- **Lifecycle state:** The Change Request must be in **Draft** status. Only Draft CRs appear in the selection list.
- **Permissions:** Your Aras Innovator account must have read and update access to Change Requests and read access to Affected Items (Parts, CADs, Documents). Contact your system administrator if you are unsure whether your account has the required permissions.

Selecting a Change Request

Open the Impact Analysis application from the URL provided by your system administrator and log in. The application opens at the Initializing step, showing a searchable list of all Draft-state Change Requests in your connected Aras Innovator instance.

Search by CR number or title keyword, select the row for the CR you want to analyze, and click **Load Data**. The application advances to the **Preparing** step.

Important

Only Change Requests in **Draft** status appear in this list. If the CR you are looking for does not appear, verify its lifecycle state in Aras Innovator before proceeding.

Preparing the Analysis

The **Preparing** step displays the loaded Change Request context: its title, Reason of Change, and Description, drawn directly from Aras Innovator. These fields are read-only here; if the content needs



correction, update it in Innovator first and reload.

On the right, an optional **Analysis Instructions** field lets you focus or constrain the analysis before it runs. Instructions are free text and apply for this session only. Examples:

- "Prioritize historically validated Change Orders and call out high-risk affected items."
- "Focus only on components within the chassis sub-assembly. Ignore optical elements."
- "This change is safety-critical. Apply conservative recommendations."

When ready, click **Start Analysis**. Use **Back** to return and select a different CR.

Analysis in Progress

After clicking **Start Analysis**, the agent runs five AI specialists in parallel.

Their progress is visible on screen; each shows a running indicator while active and a checkmark when complete:

- **Change Management Expert:** Orchestrates the analysis and structures the final recommendations.
- **Part Model Checker:** Audits part properties and structural relationships.
- **Rationale Analyzer:** Builds a justification for each recommended item.
- **Prior Change Order Checker:** Searches historical Change Orders for relevant patterns.
- **ARAS Expert:** Reads live data directly from your Aras Innovator instance to ground recommendations in your actual product record.

Once the five specialists complete, a **Recommendation Validator** runs as a final step to consolidate and validate the recommendation set before results are presented.

Important

Do not close the browser window, refresh, or navigate away while the analysis is running. This will terminate the session and discard all progress. Use the Cancel button to safely abort.

Agent-Initiated Clarification

In some sessions, after the specialists complete, the agent pauses and presents a plain-language question before showing final recommendations. This occurs when the specialists produce conflicting



signals, for example, when multiple historical Change Orders point to different scopes, and the agent needs user guidance to proceed.

The interface shows the question and a set of clickable option chips, each representing a distinct resolution path. Select the chip that best matches your intent and click **Continue**. The agent resumes and advances to the Summary.

The screenshot displays the 'Impact Analysis' application interface. At the top, a progress bar indicates the current step is 'Summary' (Step 3 of 5). The main content area shows a 'Waiting for input' status with a progress indicator '5 of 5 steps complete'. Below this, the 'Agent response' section contains a paragraph of text: 'I found one scope conflict that materially affects the recommendation set: CAM-DOC-2200 appears in the current CR, but the specialists disagree on whether it is actually relevant. Which scope do you want applied?'. Two interactive buttons are provided: 'Keep CAM-DOC-2200 in scope' and 'Remove CAM-DOC-2200 from scope'. A 'Continue' button is located at the bottom right of the response area. The header includes a 'Logout' link and a 'Context' section with 'CR: CR-00012218' and 'Similar COs (2)'. The footer contains legal disclaimers and an instance ID '45078-optimum-optime'.

At any point during analysis you can click the **CR** badge or the **Similar COs** badge in the header to review the full detail of the loaded Change Request or the historically similar Change Orders the agent identified.

Reviewing Recommendations

When analysis is complete, the **Summary** step presents the results.

Read the Summary narrative first. Before evaluating individual items, read the paragraph at the top of the results. It describes the reasoning the agent applied, including any scope decisions made in response to clarification, and provides the context that makes the individual recommendations interpretable.



Recommendation list: Each recommended Affected Item appears as a card showing the item number, its ItemType, and a suggested action badge (Revise, Release, or Obsolete). Expand a card to see:

- **Rationale:** A synthesized justification from the Change Management Expert.
- **Checkers Insights:** Individual evidence notes from each specialist that flagged the item, showing exactly which historical Change Orders or structural patterns drove the recommendation. Use these to cross-reference against the source records in Aras Innovator before committing.

Important

Two separate "Action" concepts

The suggested action badge on a recommendation card (Revise, Release, Obsolete) is the agent's analytical recommendation based on historical patterns.

The Action column in the **Aras Innovator** Affected Items grid is a separate UCM field set through normal change governance. These two values are independent and are not expected to match automatically.

Accepting and rejecting items: Each card has a checkbox, selected by default.

Uncheck any item to exclude it from the commit.

The **Apply Changes (N)** counter in the header updates as you toggle selection.

Use the **All / Selected / Not Selected** filter to focus the view. Apply Changes is disabled when no items are selected.

Use **Back** to return to the **Preparing** step to revise your instructions and re-run. This discards the current recommendation set.

Applying Changes to Innovator

Click **Apply Changes (N)** to commit the selected items. The agent writes the Affected Item relationships to the Change Request in Aras Innovator in a single operation. A progress indicator is shown while the commit is in progress.

Important

Do not close the browser window or navigate away during the commit. Use **Process Another** after a successful apply to start a new session for a different CR without re-authenticating.



Successful Apply

On success, an **Apply Changes – Summary** is displayed with a count of relationships created and an **Open in Innovator** link to the Change Request record.

Apply Errors

If one or more items fail, the page shows the specific error returned by Aras Innovator. The most common causes are:

- **Relationship already exists:** The agent recommended an item already present in the CR's Affected Items. This is expected when the agent confirms an existing item's scope, i.e., the relationship already exists in Innovator. Verify the item in Innovator and update the action on the existing relationship manually if needed.
- **Insufficient permissions:** Your Aras Innovator account does not have write access to the Affected Items relationship on this Change Request.

Verifying Results in Aras Innovator

After a successful apply, open the Change Request in Aras Innovator to confirm:

1. Navigate to the **Affected Items** tab and verify the expected items are present with the correct Type and Item identifier.
2. Navigate to the **Secure Messages** section. The agent records a structured rationale entry for each committed item, creating a durable audit trail linked to the Change Request.

The Change Request remains in **Draft** status. The agent does not advance it through its lifecycle. Continue your normal UCM workflow from this point.

Guidelines and Best Practices

- **Richer CR context yields better recommendations.** Ensure the Change Request has substantive text in the Title, Description, and Reason of Change fields before starting. A title like "Update part" provides far less signal than "Replace aluminum clamp bracket with steel for load tolerance."
- **Use instructions to focus, not to override.** Custom instructions are most effective when they narrow the scope to a specific sub-assembly, a risk category, a constraint. The agent's analysis is grounded in your actual product graph; instructions complement but do not replace that evidence.



- **Use Checkers Insights for verification.** The per-specialist evidence trail is designed to support your validation step in Aras Innovator, not just to justify acceptance. Cross-reference the Prior Change Order Checker's cited CO numbers against the source records before committing.
- **The agent does not promote your CR.** Committing Affected Items does not change the lifecycle state of the Change Request. Continue your normal UCM workflow in Aras Innovator after applying.

Troubleshooting

Symptom	Resolution
CR does not appear in the selection list.	Verify the CR is in Draft status in Aras Innovator. Only Draft CRs are shown.
Analysis does not advance past the connecting state.	The agent service is not responding. Refresh and retry. If the issue persists, contact your system administrator.
" Analysis failed " on the Summary step.	Retry. If the CR has very limited text in its Title, Description, or Reason of Change, add meaningful content in Innovator before retrying.
Apply returns "already exists" for all items.	The agent confirmed the existing Affected Items scope is correct. No new relationships need to be created. Manually update action fields in Innovator if needed.
Open in Innovator link does not resolve.	Verify your network access to the Aras Innovator instance shown in the application footer.

