

# interlock - Project Proposal

## Project Idea and Motivation

Engineering teams are increasingly adopting AI assistants to support problem solving, design discussions, and ticket resolution. In most cases, however, these interactions occur in private, user-specific sessions. Each engineer consults their own agent independently, with no shared visibility into the reasoning process, the decisions made, or the conclusions reached.

This model introduces a fundamental limitation. Private agent sessions are ephemeral, siloed, and disconnected from the systems where work is actually tracked. The insights produced during these sessions are not preserved, cannot be reviewed by others, and do not contribute to organizational learning. As a result, similar problems are repeatedly analyzed from scratch, past decisions are difficult to rediscover, and both humans and agents remain unaware of relevant historical context.

At the same time, Jira continues to serve as the primary system of record for engineering work. While it captures outcomes such as status changes and final resolutions, it does not reliably capture the reasoning that led to those outcomes. Important architectural discussions, assumptions, tradeoffs, and coordination details often occur outside the ticket or remain implicit.

Interlock is motivated by the need to govern agent-assisted work at the ticket level rather than at the individual level. The project aims to move AI assistance out of private conversations and into a shared, persistent, and auditable space. By anchoring agent interaction directly within Jira tickets, Interlock ensures that reasoning, decisions, and progress are visible, reusable, and continuously improvable.

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## Problem Being Solved

Interlock addresses two closely related problems.

The first problem is the lack of structured reasoning within Jira tickets during their resolution. While tickets record what was done, they rarely document how decisions were made, which alternatives were considered, or what dependencies and risks were identified. This reduces the value of tickets as

learning artifacts and makes reviews, onboarding, and cross-team collaboration more difficult.

The second problem is uncontrolled agent usage at the individual level. When engineers interact with AI agents privately, the resulting insights are not shared, not retained, and not incorporated into future work. Each session operates in isolation, with no awareness of past tickets, prior discussions, or organizational decisions unless the user manually provides that context.

This model prevents both humans and agents from learning collectively. It also limits the ability to improve agent behavior over time, since there is no structured record of how tickets were actually resolved.

Interlock reframes the role of AI assistance. Instead of acting as a personal, disposable assistant, the agent becomes a governed participant in the ticket resolution process. Its contributions are persistent, visible, and tied directly to the work being done.

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## Presumed Solution (High-Level)

Interlock is implemented as a Jira extension that embeds an AI companion directly into the lifecycle of a ticket. All interaction with the agent takes place through Jira comments, either internal or public, according to the assignee's decision.

This design intentionally eliminates private, untracked agent sessions. Every analysis, summary, question, and update produced by the agent becomes part of the ticket's history. This ensures that the resolution process is transparent and that future engineers, reviewers, and even future agent instances can learn from past work.

The agent's role is explicitly constrained. It does not act as a solution designer or architectural authority. Instead, it supports the assignee by gathering context, structuring information, summarizing discussions, and keeping the ticket aligned with actual progress. Human engineers remain responsible for decisions and implementation.

By anchoring agent interaction at the ticket level, Interlock enables agent session governing. Each ticket effectively becomes a shared, persistent session that accumulates context and reasoning over time.

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## Companion Workflow and Main Features

Interlock supports ticket resolution through a structured, step-by-step workflow, with a strong emphasis on shared visibility and persistence.

First, the agent performs an automated overview scan of the ticket. It analyzes the issue description and metadata and retrieves relevant context such as similar past tickets, documentation, code references, and related discussions using the knowledge hub. The results are posted as a comment, establishing a shared starting point for the resolution process.

Second, the agent generates a concise summary of the problem and proposes several possible resolution strategies. These strategies are presented transparently within the ticket, allowing the assignee and other stakeholders to review and discuss them.

Third, once the assignee selects a strategy, the agent deepens the analysis for that specific approach. It summarizes relevant historical tickets and documentation, explains dependencies and potential cross-team impact, and highlights sensitive areas or risks. All of this information remains visible in the ticket comments.

Fourth, after discussion and approval, the agent breaks the selected strategy into tasks and subtasks. It updates the ticket's to-do section and acceptance criteria to reflect the agreed plan, ensuring alignment between discussion and execution.

Finally, throughout execution, the agent continues to accompany the assignee via comments. It helps summarize progress, adapts tasks and acceptance criteria when new information emerges, and documents issues encountered during implementation.

At every stage, the ticket itself serves as the single, governed session. This creates a durable record that benefits future engineers and improves the agent's effectiveness over time.

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## Expected Outcome

Interlock demonstrates a shift from private, ephemeral AI assistance to shared, governed agent participation in engineering workflows. By keeping all agent interaction inside Jira tickets, the system improves transparency, preserves reasoning, and enables collective learning.

Tickets resolved with Interlock are expected to contain not only outcomes, but also context, decisions, dependencies, and execution history. This makes them

valuable beyond their immediate purpose and establishes a foundation for more effective human and agent collaboration in the future.