A Multinational Manufacturer Fueled Asset Inspection Efficiency with C3 Generative AI

Overview

A large industrial company faced challenges in managing vast volumes of equipment inspection documentation required for critical fixed equipment turnarounds. The time-intensive scoping of detailed inspection plans (DIPs) required manual cross-referencing of data from multiple sources, including cloud storage platforms, asset performance management systems (APMs), handwritten notes/drawings, and non-digitized records spanning decades. To address this, the company partnered with C3 AI to implement C3 Generative AI, configured to streamline inspection data access by organizing decades of historical records, automating document classification, and generating concise, accurate summaries. These capabilities significantly accelerated the scoping of DIPs, enabling faster decision making and supporting sustainable operational productivity.

Challenge

Historically, asset inspectors had to search across multiple systems for equipment inspection data, manually piecing together information from cloud storage and asset management platforms, as well as hundreds of scanned pages from legacy records. The process was lengthy and non-scalable, especially with records including handwritten notes and inconsistent document formats. Such constraints affected turnaround time, consistency, and accuracy, impacting timely equipment maintenance.

Solution

Over a few weeks, the C3 AI team collaborated with subject matter experts and asset inspectors to configure an AI-powered inspection data pipeline. This solution provided real-time, AI-generated summaries of equipment inspection data, along with historical document search, annotation, and retrieval capabilities. The platform integrated data from cloud storage and asset management systems, enabling inspectors to quickly locate relevant insights and access AI summaries with source links for deeper verification.

Results

80%

Reduction in scoping turnaround times, allowing inspectors to complete tasks in hours instead of days.

70

years of non-digitized unstructured documents unified across seven structured data sources, allowing users to view consolidated asset history and identify risks and recommendations that were previously invisible to their data tools.

100%

of users reported that the solution significantly accelerates inspection scoping workflows and effectively surfaced critical technical data.

Project Outcome

With C3 Generative AI, the company obtained an 80% reduction in time spent on discovery and research for detail inspection plan scoping. Inspectors noted increased ease in locating critical information, leading to faster, data-driven decisions and allowing a greater focus on maintenance and operational quality.

Key Capabilities

- **Asset-Level Summaries:** Inspectors now receive AI-generated summaries on equipment status, inspection history, recommendations, and associated work orders, providing quick overviews with source references for detailed investigation.
- **Streamlined Document Search:** Users can filter documents by functional location, category, and date, then view summaries or original documents in one click.
- **Natural Language Querying:** Inspectors can ask specific questions and receive context-aware, accurate responses, supporting informed decision making directly tied to source passages.

About the Company

- $2.5+ billion annual revenue in 2023
- 700K+ barrels per day of refining capacity
- 28,000+ employees

Project Highlights

- Unified data from 91 physical assets
- Integrated 70 years of non-digitized unstructured documents unified across seven structured data sources
- Reduced error risks during turnaround scoping from improved historical inspection data accessibility

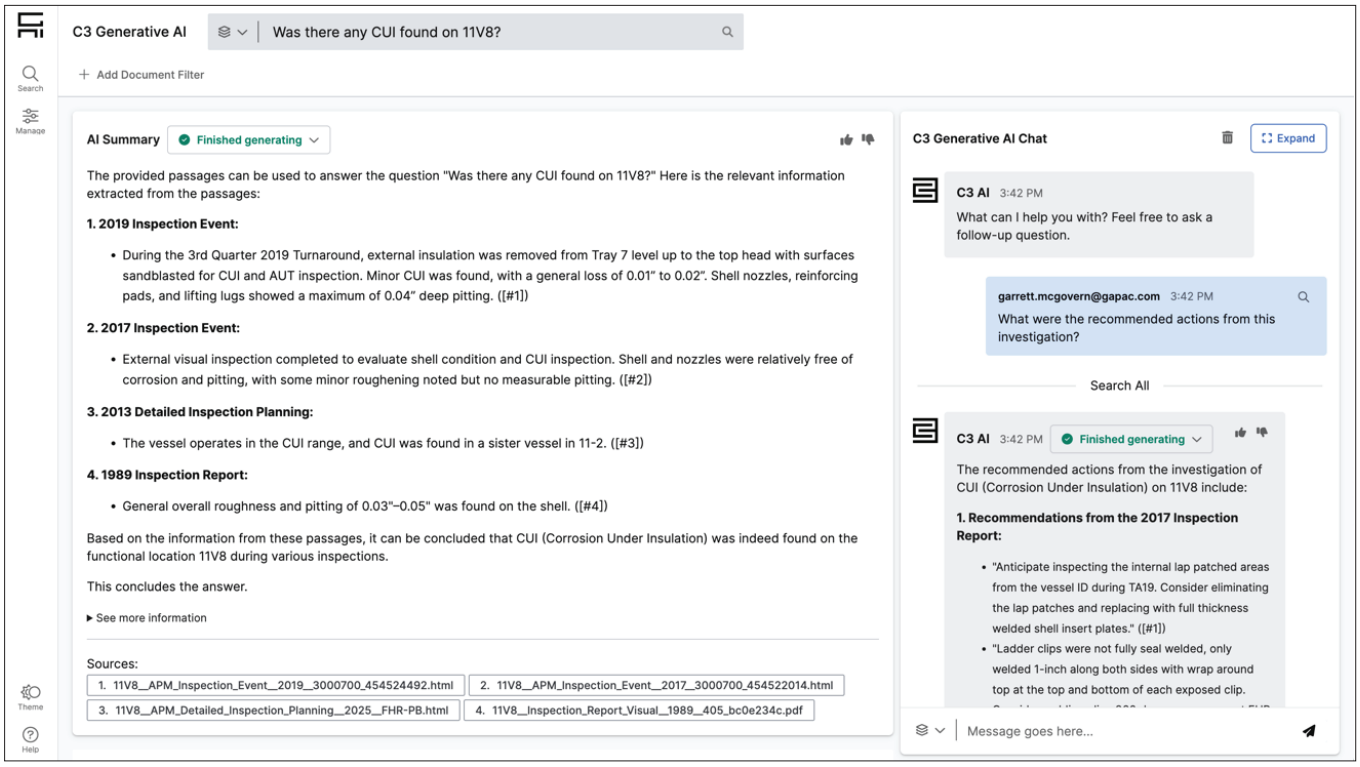

Figure 1. *Inspectors can efficiently retrieve answers with a question-driven workflow. Users input specific asset-related questions, and generative AI provides accurate, hallucination-free answers sourced from a reliable, indexed vector store. Each response includes references to original documents and related files for verification. Users can ask follow-up questions in the AI chat, receiving context-aware answers that continuously draw from the same trusted data sources.*

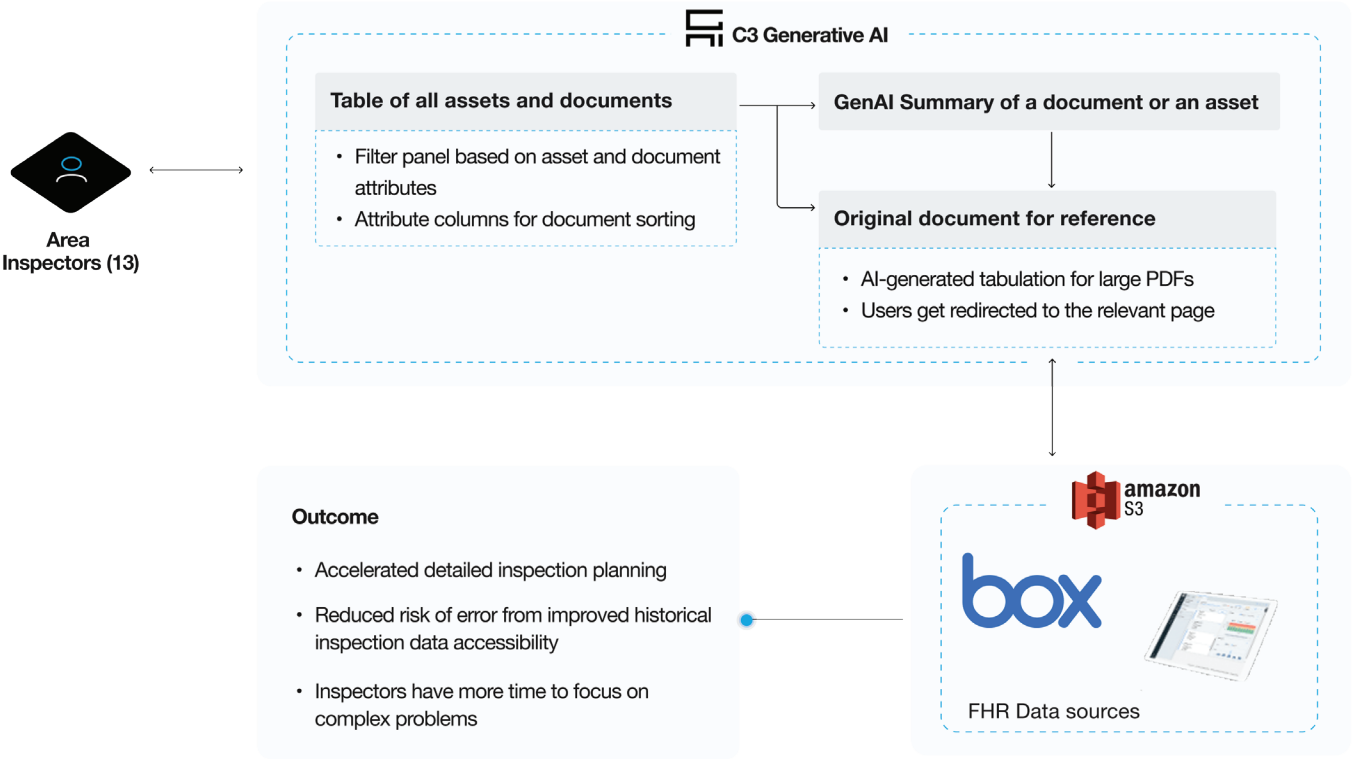

Figure 2. *C3 Generative AI consolidates disparate structured and unstructured data to accelerate inspector workflows.*

Conclusion

By partnering with C3 AI, the organization successfully transformed its fixed equipment inspection processes, enabling a scalable, sustainable solution for maintenance planning and equipment reliability.

Proven Results in Weeks **Visit C3.ai/get-started**