

SUCCESS STORY

ASCENT AI Assistant

Transforming Enterprise Engineering Knowledge into an Intelligent AI Platform

Company Name

FUSO

Industry

Automotive

Location

Japan

Impact

Engineering knowledge made Intelligent

Application

ASCENT AI Assistant

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A CASE STUDY

Reimagining Technical Knowledge Retrieval Through Context-Aware Engineering Intelligence

Background

Mitsubishi FUSO Truck and Bus Corporation (MFTBC), part of Daimler Truck AG, relies on the ASCENT platform as the central repository for engineering knowledge supporting global after-sales operations. The platform contains extensive spare parts catalogues, workshop manuals, repair procedures, technical illustrations, wiring diagrams, and service documentation used throughout the vehicle lifecycle.

As engineering knowledge continued to expand across thousands of publications and multiple vehicle variants, locating accurate technical information became increasingly complex and time-consuming. To modernize knowledge access and improve engineering productivity, MFTBC partnered with Cubastion to transform traditional document search into an intelligent, AI-powered engineering knowledge platform.

Problem Statement

Although ASCENT contained comprehensive engineering knowledge, retrieving the right information remained a manual and knowledge-intensive process. Users had to navigate thousands of parts catalogues and over **31,000 shop manuals**, understand complex document hierarchies, and often depend on experienced support teams to answer routine technical queries.

MFTBC required an intelligent platform capable of understanding engineering context-not just keywords-to deliver accurate, vehicle-specific, and source-backed knowledge through a simple conversational experience.

Solutions

- Engineering Intelligence Platform**
 Designed an enterprise AI platform that transforms traditional document search into a conversational engineering knowledge experience, enabling users to retrieve verified technical information through natural language interactions.
- Context-First Retrieval Architecture**
 Unlike conventional enterprise chatbots, the platform first establishes vehicle context using VIN, Chassis Number, Model & Classification, or Publication Number before retrieving engineering knowledge, significantly improving response accuracy and relevance.
- Specialized Engineering Knowledge Intelligence**
 Developed dedicated AI capabilities for Parts Intelligence and Workshop Manual Intelligence, enabling users to retrieve accurate spare parts information and repair guidance from domain-specific engineering knowledge.
- AI-Ready Knowledge Foundation**
 Transformed thousands of engineering documents-including 31,000+ workshop manuals-into a structured enterprise knowledge repository optimized for semantic retrieval, contextual search, and AI reasoning.
- Responsible Enterprise AI**
 Implemented Retrieval Augmented Generation (RAG), semantic search, vector search, and source-grounded responses to ensure every AI-generated answer is accurate, explainable, and traceable to approved engineering documentation.
- Future-Ready AI Platform**
 Established a scalable enterprise AI architecture capable of supporting additional engineering domains, multilingual knowledge, and future AI-driven business capabilities.

Business Outcomes

Engineering Manuals AI-Enabled

31,000+ Transform a vast engineering knowledge repository into an intelligent, conversational knowledge platform.

Engineering Self-Service

24x7 Empower technicians, dealers, and support teams with round-the-clock access to trusted engineering knowledge.

Near Real-Time Knowledge Retrieval

- Enable engineers and technicians to access verified technical information within seconds instead of manually navigating thousands of documents.

Improved Technical Information Accuracy

- Deliver vehicle-specific responses using VIN, Chassis Number, and model context to improve the relevance and precision of engineering information.

Bilingual Engineering Knowledge Access

- Provide a unified AI experience supporting engineering documentation in both Japanese and English.

Future-Ready Enterprise AI Foundation

- Establish a scalable AI platform capable of supporting additional engineering domains and enterprise AI initiatives.

Challenges Faced

Business Challenges

• Engineering Knowledge Distributed Across Thousands of Documents

Critical engineering information was spread across multiple catalogues, manuals, and technical publications, making knowledge discovery slow and inefficient.

• Dependency on Technical Experts

Accessing the right engineering knowledge often depended on experienced personnel familiar with complex documentation and vehicle configurations.

• Time-Intensive Information Retrieval

Technicians and support teams spent considerable time locating repair procedures, spare parts, and technical references before work could begin.

• Limited Self-Service Experience

Traditional document search required users to understand document hierarchies rather than simply describing the technical issue.

• Rapidly Expanding Knowledge Repository

As engineering documentation continued to grow, maintaining fast, accurate, and scalable knowledge retrieval became increasingly challenging.

Technical Challenges

• AI-Ready Knowledge Preparation

Transforming thousands of structured and unstructured engineering documents into AI-ready knowledge while preserving technical relationships and accuracy.

• Context-Aware Information Retrieval

Building an AI engine capable of interpreting VIN, Chassis Number, Model & Classification, and Publication Number before retrieving engineering information.

• Semantic Understanding of Engineering Content

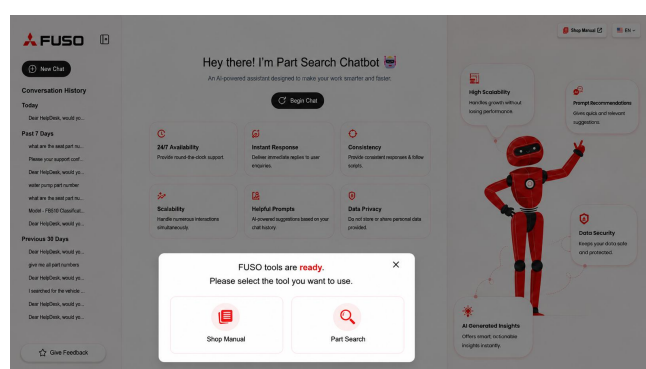
Enabling AI to understand complex automotive terminology, repair procedures, and multilingual technical documentation.

• Responsible AI Implementation

Ensuring every AI response remained grounded in approved enterprise documentation with complete source traceability.

• Enterprise Integration and Scalability

Integrating AI capabilities with enterprise repositories and authentication systems while supporting future scalability and security requirements.



Key Areas of Expertise Demonstrated

• Enterprise AI Solution Architecture

Designed enterprise-grade AI platforms that combine Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), and cloud-native architecture to solve complex engineering knowledge challenges.

• Knowledge Engineering

Transformed fragmented engineering documentation into structured, AI-ready enterprise knowledge while preserving technical relationships and domain accuracy.

• Context-Aware AI Systems

Developed intelligent AI solutions capable of understanding vehicle context and engineering intent to deliver precise, context-specific responses.

• Responsible Enterprise AI

Implemented secure, governed AI with source-grounded responses, traceability, and enterprise-grade security controls.

• Enterprise AI Integration

Integrated AI capabilities with enterprise repositories, authentication systems, and existing engineering applications without disrupting current operations.

• Scalable AI Platform Engineering

Built reusable AI foundations capable of supporting future business domains, multilingual knowledge, and enterprise-wide AI adoption.

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