

Specifications RAG Agent

(AI-Powered Document Intelligence System)

The **Specifications RAG Agent** is an advanced Retrieval-Augmented Generation (RAG) automation built in n8n that transforms static PDF specification documents, bylaws, and technical manuals into an **interactive AI-powered knowledge system**. Specialized in AI automation, RAG systems, and enterprise document intelligence solutions.

This workflow automatically ingests documents from Google Drive, converts them into vector embeddings using Ollama, stores them in a locally hosted Qdrant Vector Database, and enables real-time question answering via **chat interface** and **API webhook integration**. The AI agent strictly retrieves answers from source documents and returns **clause-level structured responses**, ensuring accuracy, compliance, and zero hallucination.

A. Key Features

1) Automated Document Ingestion

- Auto-fetches PDF files from Google Drive
- Extracts raw text content from specification documents
- Updates file metadata automatically

2) Vector Database Indexing

- Splits long documents into optimized chunks
- Generates embeddings using Ollama (local AI inference)
- Stores vectors securely inside Qdrant database

3) RAG-Based Knowledge Retrieval

- Searches document knowledge base in real-time
- Returns answers strictly from stored specifications
- Provides exact clause numbers and original wording

4) Dual Access Interfaces

- Chat-based AI assistant interface
- REST API webhook endpoint for system integration

5) Hallucination Prevention

- Enforced tool-only retrieval policy
- Auto fallback response when no relevant clause is found
- Source-grounded responses for legal and compliance use cases

B. System Architecture Overview

This workflow integrates:

- **n8n Automation Platform** — Workflow orchestration
- **Google Drive API** — Document ingestion
- **PDF Extraction Engine** — Text processing
- **Ollama Embeddings Engine** — Local AI vector generation

- **Qdrant Vector Database** — High-speed semantic search
- **OpenRouter Chat Model** — Natural language reasoning
- **Webhook + Chat UI** — End-user access channels

C. Typical Use Cases

- Legal document search automation
- Technical specification lookup systems
- Construction bylaws knowledge assistants
- Company policy bots
- Engineering manuals Q&A
- Compliance verification tools
- Enterprise knowledge bases

D. Deployment Requirements

To deploy this workflow:

- n8n instance (self-hosted or cloud)
- Google Drive OAuth credentials
- Qdrant Vector Database (local or cloud)
- Ollama installed locally
- OpenRouter API key
- PDF specification documents

E. Keywords

#KnowledgeBase
#ComplianceAutomation
#LegalTech

#SmartDocuments
#EnterpriseAI
#DataAutomation

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