INDUSTRIAL & ENGINEERING · PROPOSAL REVIEW

AI-Driven Proposal Review and Gap Detection

Multi-document comparison, CDE analysis, and bid win optimization

The client engaged Intics to develop an AI-based specification review solution, expanding a requirement classification pilot into a comprehensive proposal review support system. The solution acts as an intelligent reviewer support capability to assist proposal teams during technical scope and commercial document evaluations for RFIs, RFPs, RFQs, and RFTs (tenders), among others.

1,000–1,500
PAGES PER DOCUMENT REVIEWED

20–30 yrs
OF HISTORICAL DATA SEARCHABLE

70-20-10
CDE BID-COMPETITIVENESS RATIOS

The Problem

Proposal review teams face complex, labor-intensive workflows when evaluating multi-document supplier bids, complex BOMs, and customer specifications that span 1,000 to 1,500 pages per document. Manually reviewing line items — such as verifying IEEE cabling standards, AMP specifications, or exact numerical standards — was slow and prone to oversight. Evaluating compliance risks required identifying hidden omissions, partial coverage, and deviations before submitting bids.

Furthermore, teams lacked an automated method to cross-reference past project iterations against 20–30 years of historical organizational data, missing critical insights needed to optimize bid competitiveness.

The Solution

Intics developed a Compliance-Deviation-Exception (CDE) solution that automates multi-document comparison workflows, which can include historical documents such as customer specs, vendor proposals, and consolidated specs. The system features:

- **AI-Based Requirement Extraction & Categorization:** Ingests complex PDFs and scanned documents to parse technical specifications, line items, and schematics. An extraction engine categorizes requirements into Compliance, Deviation, and Exception (CDE) across technical, commercial, and scope-related criteria.
- **Requirement Coverage & Standard Verification:** Automatically compares responses against exact standards (e.g., detecting standard deviations like 6565 vs. 6575) and tags items as Addressed, Partially Addressed, Omitted/Missing, Potential Deviation, Unsupported Responses, or Insufficient Information.
- **Knowledge Base Connectors & RAG Pipeline:** Connects directly to Google Drive, SharePoint, and SQL databases, replacing reliance on public web searches with a Retrieval-Augmented Generation (RAG) search across decades of internal client records.
- **Reviewer Assistance & Validation:** Delivers summary tables, highlighted gaps, AI rationale generation, and export capabilities to Excel, CSV, or PDF, using confidence filtering and rule-based validation nodes to minimize hallucinations.

Business Impact

- **Reduced Manual Review Effort:** Automates line-item comparisons across multi-thousand-page RFPs, supplier proposals, and historical files, significantly reducing reviewer workload.
- **Faster Proposal Review Cycle:** Accelerates review turnaround times by automatically pinpointing omissions, technical deviations, and insufficient coverage during initial bid analysis.
- **Bid Win Data Optimization:** Generates clear CDE breakdown ratios (e.g., comparing 70-20-10 CDE values against competitor metrics) to analyze bid competitiveness and increase win rates on high-value tenders.
- **Improved Requirement Traceability & Trust:** Links AI outputs directly to source requirement locations and retrieved document chunks, delivering explainability and auditability for reviewers.
- **Historical Data Reuse:** Enables teams to instantly query past project iterations and precedent data centers, eliminating redundant effort without replacing formal human engineering, legal, or commercial judgment.

Roadmap

Automated RFP generation is planned for the next phase of the engagement.

Tech Stack and Infrastructure

Document Processing & Workflow	Intics Sovereign AI for Documents (SAID), in-house Compliance-Deviation-Exception (CDE) engine, and generation engine
Knowledge Base Integration	Native connectors for SharePoint, Google Drive, SQL databases, and internal PDF repositories accessing 20–30 years of historical proposal data
Local Lab Infrastructure	On-premise environment utilizing NVIDIA GPUs — one machine dedicated to model hosting and one to application hosting