

## GenAI Powered Engineering Compliance in Regulatory Data Reporting

*How a global bank leveraged GenAI to automate 7,000+ rules, standardize reporting, and minimize regulatory data reporting gaps and issues*

*A leading global bank sought to strengthen its regulatory data reporting in the face of growing complexity and evolving global requirements. To ensure timely, accurate, and consistent submissions across jurisdictions, the bank prioritized a scalable and intelligent approach, anchored in automation, standardization, and enterprise-wide transformation.*

### Challenges

In its effort to modernize compliance operations, the bank needed to navigate several structural and regulatory complexities impacting speed, scalability, and standardization:

**Frequent regulatory changes** demanded coordinated effort from 20+ Business Analysts to interpret complex directives, slowing response times and increasing operational overhead.

**Legacy systems, though reliable**, lacked the flexibility to support rapid, large-scale rule updates across global entities, limiting adaptability in a fast-changing regulatory landscape.

**Variations in interpretation across regions**, combined with complex data environments, made global reporting difficult, leading to audit gaps and, in some cases, regulatory penalties.

### Solution

Xoriant engineered a **GenAI-powered compliance solution** to address the bank's regulatory reporting challenges. Built on **ORIAN**-Xoriant's GenAI foundation, the solution integrated advanced ML, domain-trained LLMs, and an agentic workflow while adhering to strict standards in architecture, model governance, data security, and audit readiness.

#### Interpreted regulatory complexity

with a Generative AI-powered Reg Assistant using **LangChain-based AI agents** and domain-specific **LLMs**, accelerating updates and reducing reliance on cross-functional reviews.

#### Configured an agentic workflow

to align specifications with regulatory PDFs using **OCR** and **RAG**, enabling consistent internal reporting across jurisdictions.

#### Converted regulatory instructions into executable rules

using a custom rule-authoring engine— ensuring traceability, jurisdictional accuracy, and compliance consistency.

#### Enabled self-service insights for compliance and business users

via natural language search (NLS) powered by **Azure OpenAI (GPT-4)** and custom LLM evaluators, improving access to rule logic and data.

#### Embedded AI-driven validation and reconciliation controls

to ensure rule alignment with regulatory standards, supported by **OCR-enabled data extraction** and proactive exception management.

#### Integrated compliance solution

within the bank's compliance ecosystem, connecting upstream data and downstream reporting systems through scalable, containerized microservices.

### Business Value



**7,000+ compliance rules automated**

freeing up **20+ Business Analysts** to focus on strategic compliance oversight and value-driven initiatives.



**20+ critical reports optimized**

for timely and accurate submissions across global jurisdictions, **strengthening regulatory responsiveness**.



**Deployed a scalable rule engine**

to accelerate rollout of new mandates, future-proofing compliance operations with minimal.

### Technology Stack

**Lang chain-based AI agents | Azure OpenAI (gpt 4, gpt 4 Turbo, gpt o1-mini) | Retrieval-Augmented Generation (RAG) | Python-based microservices | Custom domain-specific LLM evaluators | Fast Api | Docker | Kubernetes (Scalable deployment)**

OCR: Optical Character Recognition | NLS: Natural Language Search | RAG: Retrieval Augmented Generation | LLM: Large Language Model

Xoriant provides advanced technology solutions and software development services for global banks, software product companies and F500 market leaders. Based in the U.S. with 18 global offices and 5000+ engineering professionals, Xoriant demonstrates exceptional experience in banking and finance infrastructure modernization and cloud migration. We deliver expert digital engineering, as well as offsite and offshore services, across high tech, healthcare, pharma, industrial manufacturing, telecom, and automotive sectors. Customers credit technological innovation and delivery excellence for our shared success over three decades.