LiveRegent

A Continuous-Memory AI Agentfor Real-Time Regulatory Intelligence

Track 1 – Agentic AI (Applied GenAI)

Synaptix Frontier AI Hack | Build-athon
Indian Institute of Technology (IIT) Madras

1. Problem Statement

Organizations operate in environments where regulations, policies, and compliance rules evolve continuously. Most AI systems reason over static data snapshots, leading to outdated guidance and operational risk. The core limitation is memory: traditional transformer-based systems rely on batch ingestion and periodic re-indexing, preventing real-time adaptation.

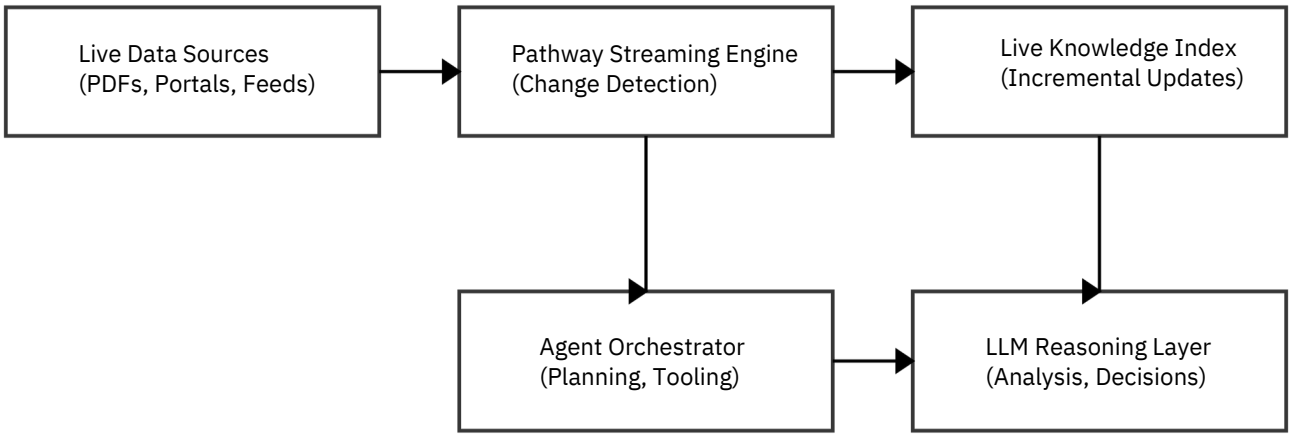
2. Proposed Solution

LiveRegent is a real-time regulatory intelligence agent built using Pathway's streaming engine. It continuously ingests evolving documents and maintains an always-current knowledge state. The system performs multi-step agentic reasoning to generate actionable, up-to-date insights.

3. System Architecture

The architecture is designed around continuous data ingestion, explicit agent orchestration, and a future-ready reasoning layer aligned with post-transformer principles.

System Architecture Overview



4. Live Adaptation Capability

LiveRegent reflects document additions, modifications, or deletions immediately in its reasoning. Only affected sections are reprocessed, eliminating stale outputs without retraining or redeployment.

5. Post-Transformer Alignment

The system treats memory as a first-class architectural component. It is designed to integrate Dragon Hatchling models as the reasoning layer, enabling continuous learning, interpretability, and long-horizon reasoning.

6. Expected Impact

LiveRegent reduces compliance risk, improves trust in AI-driven decisions, and demonstrates how agentic systems can adapt continuously to real-world change.

7. Conclusion

LiveRegent showcases how combining real-time data streaming with agentic reasoning moves AI beyond static intelligence toward adaptive, memory-centric systems.