

Navigating AI Regulations in the Public Sector

How Tom Sawyer Data Streams and Tom Sawyer Perspectives Drive Compliance, Innovation, and Cost Savings

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In an era where artificial intelligence (AI) is transforming government operations, U.S. Federal agencies face a complex landscape of regulations, executive orders (EOs), and Office of Management and Budget (OMB) memos designed to ensure safe, secure, and equitable AI deployment. From the Biden administration's EO 14110 on Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (October 2023) to the Trump administration's more recent EO on Removing Barriers to American Leadership in Artificial Intelligence (January 2025) and the EO on Advancing United States Leadership in AI Infrastructure (January 2025), the emphasis has shifted toward balancing innovation with risk management, infrastructure security, and cost efficiency.

Amid these evolving mandates, software like Tom Sawyer Data Streams and Tom Sawyer Perspectives emerge as critical enablers for public sector AI architectures. Tom Sawyer Data Streams is a schema-driven Extract, Transform, Load (ETL)

platform that integrates structured and unstructured data from diverse sources including databases, files, APIs, and real-time streams via Apache Kafka into unified, governed knowledge graphs.

Complementing this, Tom Sawyer Perspectives is a low-code graph and data visualization and analysis development platform that allows users to build custom applications for exploring and interpreting these knowledge graphs, uncovering hidden connections and insights through intuitive interfaces.

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Figure 1: Tom Sawyer Perspectives low-code development platform enables exploration and interpretation of knowledge graphs to uncover hidden connections and insights.

Together, these products address key pain points in governmental AI systems: data silos, compliance burdens, and escalating costs. By facilitating real-time data integration, visual analysis, and auditable workflows, they not only align with federal guidance but also deliver substantial cost savings often in the range of 50-90% in data preparation and AI operations while enhancing decision-making in high-stakes environments like intelligence and cybersecurity.

This article explores how Tom Sawyer Software's solutions support compliance with AI-related EOs, OMB memos, and frameworks, such as the NIST AI Risk Management Framework (RMF). We delve into their cost-saving mechanisms, regulatory alignment, and real-world use cases, positioning them as strategic assets for government agencies striving for AI excellence under fiscal constraints.

Cost Savings Through Efficient AI Data Architectures

Data integration and preparation remain the most resource-intensive aspects of AI projects, often consuming 70-80% of budgets due to manual processes, redundant storage, and inefficient compute usage. Tom Sawyer Data Streams tackles these challenges head-on with its real-time ETL capabilities, processing data continuously via Kafka subscriptions to minimize latency and overhead. Unlike traditional batch-oriented tools, which can inflate cloud compute bills by 10-20x through periodic syncing, Data Streams applies transformations, filters, and enrichments in real-time, normalizing disparate data into a query-ready knowledge graph without unnecessary duplication.

This approach can reduce storage costs by 60-75% and ETL execution times by up to 90%, directly benefiting AI applications like Retrieval-Augmented Generation (RAG) and predictive analytics. For instance, in RAG pipelines where high-quality contextual data is crucial, Data Streams enables incremental graph enrichment, avoiding the need to re-index entire datasets for vector embeddings. This slashes embedding compute demands by 70-95%, translating to significant savings in cloud environments like AWS GovCloud or Azure Government. Agencies report 50-70% reductions in developer hours thanks to the platform's visual data flow designer, which accelerates prototyping and iteration compared to code-heavy alternatives.

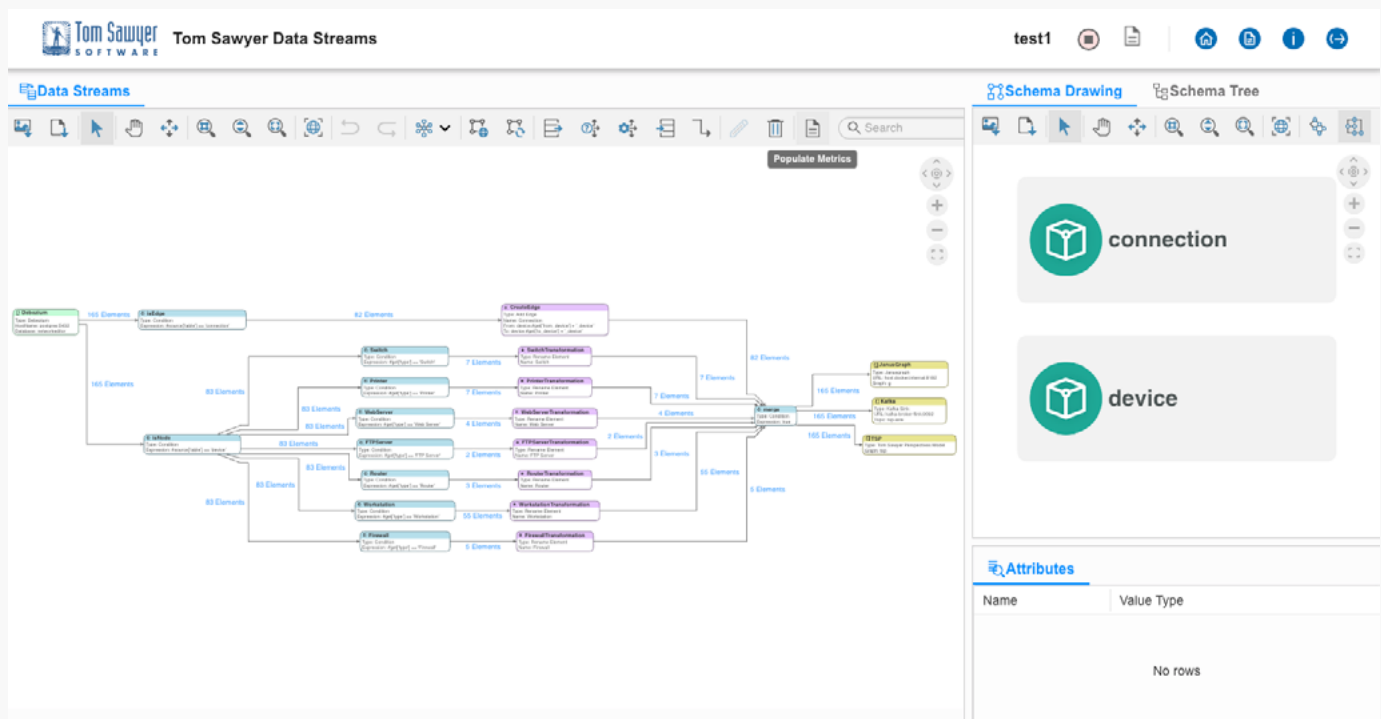


Figure 2: Tom Sawyer Data Streams visual data flow designer and real-time ETL capabilities accelerate prototyping and iteration, minimizing latency and overhead.

Tom Sawyer Perspectives amplifies these efficiencies by providing low-code tools for graph and data visualization and analysis. Integrated with Data Streams, it allows non-technical users to design interactive views of knowledge graphs, revealing patterns and relationships that inform AI models. This reduces the token usage in large language model (LLM) queries by 80-95% through targeted subgraph injection, preventing the inclusion of irrelevant data and potentially cutting inference costs by 10-50x. In a typical high-volume government RAG setup, this could lower monthly expenses from millions to tens of thousands of dollars.

Moreover, both products support federated architectures, where data stays in its original sources rather than being migrated to centralized warehouses. This eliminates migration costs of often \$500,000 to \$2 million per project and cuts cloud egress fees by 50-80%. For AI systems, Perspectives' advanced natural language and visual pattern matching query builder and traversal tools, compatible with graph databases like Neo4j and Amazon Neptune and with no need to know complex database query languages, enable multi-hop analyses that are 10-1,000x faster than relational equivalents.

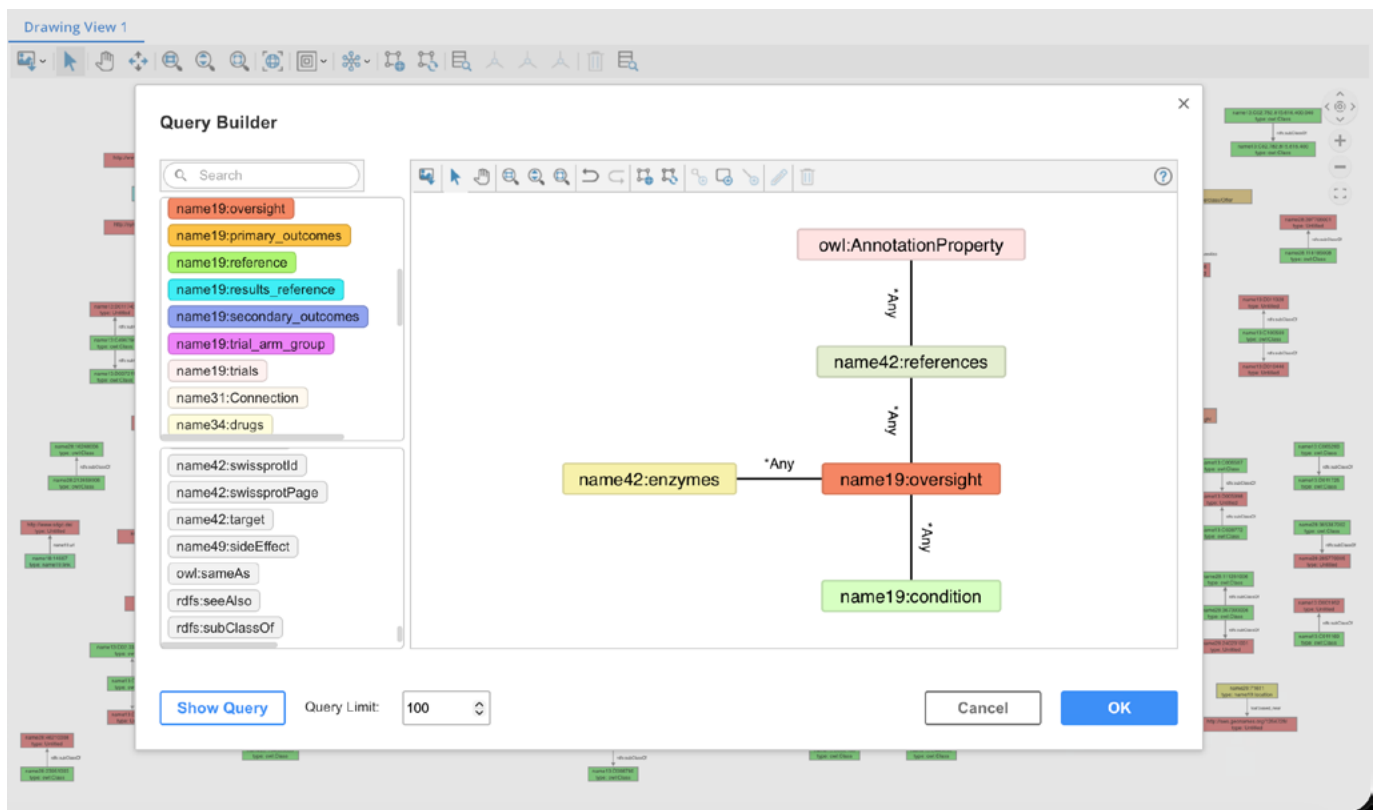


Figure 3: Perspectives advanced natural language and visual pattern matching query builder eliminates the need to know complex database query languages, enabling multi-hop analyses.

Overall, a \$1-2 million investment in these Tom Sawyer Software solutions can yield \$10-30 million in annual returns through optimized resource allocation, as evidenced in enterprise benchmarks. In the public sector, where budgets align with the Federal Cloud Computing Strategy, these savings are compounded by compliance with zero-trust models, further trimming operational overhead.

The outcome: Threat detection accelerates from days to minutes, enhancing national security without budget overruns.

Alignment with Federal AI Regulations, EOs, and OMB Guidance

Tom Sawyer Software's products are uniquely positioned to support the government's AI governance priorities, from risk assessment and data provenance to secure procurement and innovation. While not explicitly certified for every mandate, their emphasis on governed data flows, lineage tracking, and visual analytics makes them compliance enablers in regulated settings.

Consider EO 14110 (Safe, Secure, and Trustworthy AI), which mandates risk assessments, bias mitigation, and auditable outputs for high-impact AI uses. Data Streams' schema-driven ETL ensures traceable data lineages, building knowledge graphs that normalize inputs to reduce biases in AI systems. Perspectives enhances this by offering visual tools for bias detection—such as highlighting skewed relationships in graphs—aligning with NIST RMF updates. Although parts of EO 14110 were modified under the new administration, its core principles persist in the 2025 AI Action Plan, which emphasizes efficient AI infrastructure.

The Trump-era EOs, such as the one on Removing Barriers to AI Leadership (January 2025), revoke overly restrictive policies to foster innovation while maintaining security. Here, Tom Sawyer Software solutions shine by streamlining AI development without compromising safeguards. Data Streams integrates with OAuth 2.0 for secure identity verification,

supporting proactive threat detection via graph-based analytics key for cybersecurity under EO 14028 (Improving the Nation's Cybersecurity, May 2021). Perspectives' low-code platform aids secure software supply chain management by mapping dependencies in graphs, facilitating Software Bill of Materials (SBOM) attestations as per OMB M-22-18. Recent OMB memos from April 2025 on AI use and procurement further underscore the need for mature governance and cost-effective adoption.

These directives require agencies to assess AI risks, ensure public trust, and prioritize reusable models. Data Streams facilitates cross-agency data sharing through federated graphs, reducing silos and enabling compliant procurement under FedRAMP and DoD Cybersecurity Maturity Model Certification (CMMC) 2.0. Perspectives supports maturity assessments by visualizing AI workflows, potentially accelerating audits by 50-70% with built-in governance features. Additionally, alignment with NIST SP 800-218 (Secure Software Development Framework) is achieved through Perspectives' visual designer, which promotes model-based systems engineering (MBSE) as encouraged in DoD digital engineering memos. In classified environments, the products ensure Controlled Unclassified Information (CUI) protection via controlled data flows, complementing the 2025 AI Action Plan's focus on threat mitigation and industry collaboration.

Use Cases in Government AI Applications

To illustrate these benefits, consider a U.S. Department of Defense (DoD) use case in intelligence fusion for threat analysis, a common application in public sector solutions.

An agency integrating data from satellite APIs, threat report databases, and real-time sensor streams via Kafka traditionally faces \$1.5 million in annual migration costs and \$500,000 monthly in cloud reprocessing. Using Data Streams, the team can design a real-time ETL flow to transform and enrich data into a knowledge graph, reducing migration expenses by 75% and ETL compute by 50%.

Perspectives then enables visualization of the knowledge graph, enabling analysts to explore multi-hop connections for AI-driven predictions, such as identifying emerging threats through pattern recognition. This integration potentially cuts LLM query tokens by 85%, yielding \$800,000 in annual savings. Compliance-wise, lineage tracking supports EO 14110 audits,

federated access aligns with EO 14028's zero-trust principles, and secure flows meet CMMC Level 2. The outcome: Threat detection accelerates from days to minutes, enhancing national security without budget overruns.

Another potential use case involves cybersecurity in federal agencies, where Perspectives can be used to uncover vulnerabilities in network graphs derived from Data Streams integrated logs and APIs. Aligning with the April 2025 OMB memos on AI procurement, this setup enables risk-based procurement decisions, reducing exposure to breaches and saving millions in remediation. For infrastructure oversight, such as in transportation or energy sectors, the products facilitate regulatory compliance by visualizing compliance graphs, ensuring adherence to standards like those in the AI Action Plan.



Conclusion: A Path to Compliant, Cost-Effective AI Innovation

As federal AI guidance evolves from EO 14110's trustworthiness focus to the 2025 EOs' emphasis on leadership and infrastructure, Tom Sawyer Data Streams and Perspectives provide a robust foundation for government agencies. By slashing data integration costs by 50-90%, enabling real-time governance, and supporting visual analytics, they deliver 5-10x ROI multipliers while addressing mandates for risk

management, security, and efficiency. In a resource-constrained public sector, these tools not only ensure compliance but empower innovation, turning regulatory challenges into opportunities for strategic advantage. Agencies adopting them can lead in AI, fostering public trust and operational excellence amid tightening budgets and complex threats.

By slashing data integration costs by 50-90% [Tom Sawyer Data Streams and Perspectives] deliver 5-10x ROI multipliers.

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