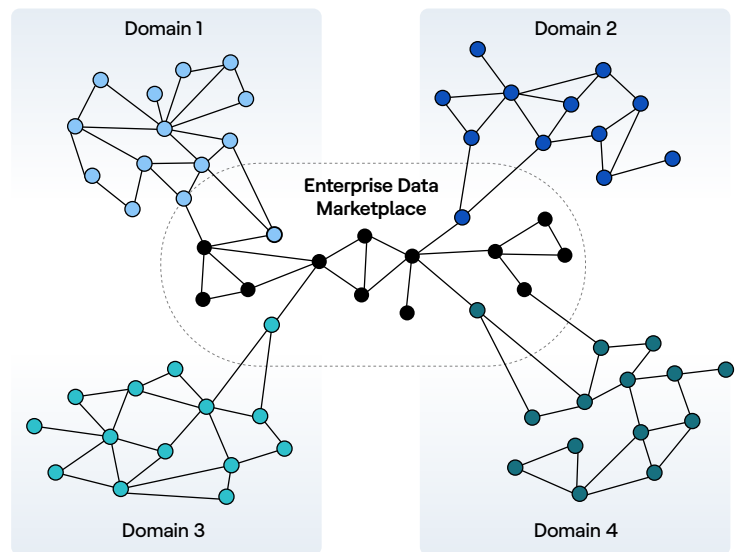# Achieving Domain Independence through Federated Knowledge Graphs

Agile Data Catalog Design and Intelligent Search

The Actian Data Intelligence Platform is built on a Federated Knowledge Graph architecture that enables each business domain to create and manage its own, domain-specific knowledge graph, utilizing structures and terms that align with specific needs. Domain-specific graphs can be connected into a single, enterprise-wide view, allowing everyone to find and use data across the company without compromising control or flexibility. This approach enables organizations to scale data governance and discovery, supports AI projects, and avoids the bottlenecks associated with rigid, one-size-fits-all systems.

Key Use Cases for a Domain-centric Data Catalog

Customizable Metadata Models and Decentralized Management

Each business domain can create, own, and curate its local knowledge graph, reflecting its unique language, workflows, and governance standards.

Multidomain Federation

Define domain-specific metadata models (metamodels) within the shared graph. These models can overlap or diverge, allowing for flexible and diverse organizational structures that a single, rigid central catalog cannot support.

Automated Data Governance

The graph tracks the origin, transformation, and usage of data for compliance needs and explainable AI/ML outputs.

Built-in governance, data quality, and lineage

Enforce governance policies for data sharing by automating data quality controls, encryption, and data access. Interactive diagrams and visualization components (dependency, inheritance, and knowledge graphs) allow users to explore large-scale data relationships, lineage, and hierarchy, supporting use cases in semantic web, machine learning, and regulatory compliance.

Trusted, Self-Service Data

Enable teams to easily discover and understand data across the organization.

Google-like search experiences

The platform delivers multi-dimensional search and topic-based browsing leveraging graph relationships, natural language processing (NLP), semantic analysis, and personalization based on user profiles—facilitating both targeted query and exploratory discovery.

Reduce the need for manual data documentation and improve collaboration across teams.

Automated Metadata Management and Data Discovery

Built-in scanners and APIs ingest and synchronize metadata from diverse systems as your infrastructure evolves, requiring minimal manual configuration.

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"The ease of use and data discoverability for our users is the direct result of the Actian Data Intelligence Platforms knowledge graph, which differentiates it from other products o the market."

– Dr. Vincent Dekker,
Head of Data Governance

A federated knowledge graph enables autonomous domains to innovate while maintaining shared governance, discoverability, and collaboration at scale.

Take a tour of the Actian Data Intelligence Platform >

About Actian

Actian empowers enterprises to confidently manage and govern data at scale with flexible solutions that work across on-premises, cloud, and hybrid environments. The data division of **HCLSoftware**, Actian delivers data management and intelligence solutions that accelerate AI-ready data delivery. Learn more at **actian.com**.

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