

EDM Webinar

Why Your AI Needs an Ontology: Getting Started with FIBO

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Introducing today's speakers



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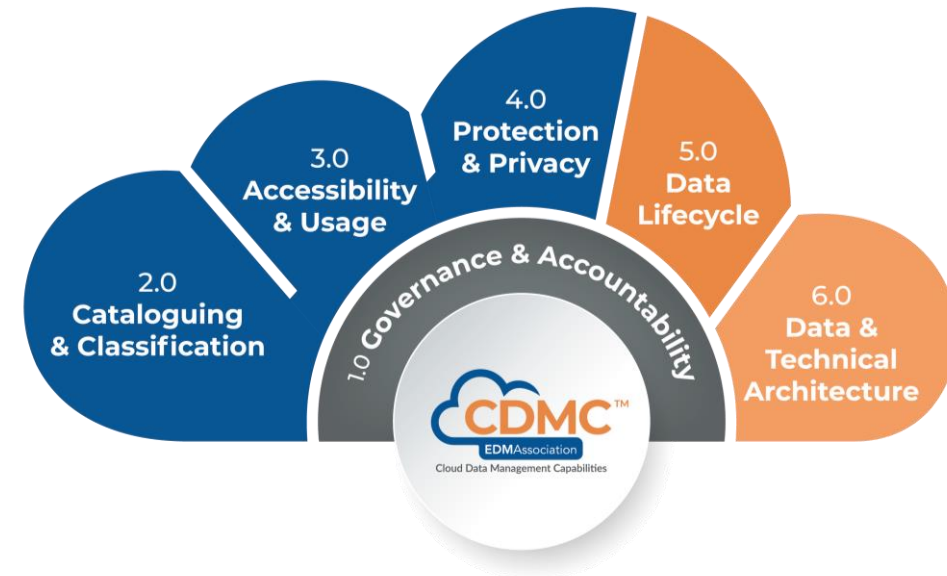
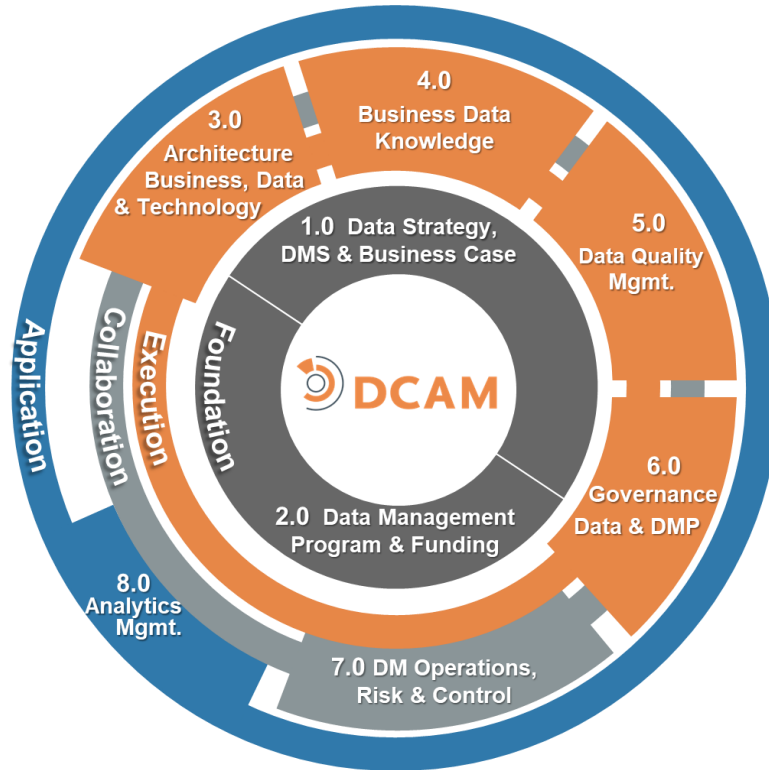


Insights for 2026

Beginning the Journey to AI Optimization

- **AI Bubble will Burst** – *Stay the Course*
- **AI Hallucinations** – *“G/GO”*
- **Human in the Loop** – *Data Management*
- **AI Optimization**
 - **Ontology** – *Shared Meaning*
 - **Data Products** – *Knowledge Graph*
- **The Data Economy** – *Digital Isle of Man*
- **AI Adoption** – *Technology Partners*
- **The Next Frontier** – *Speed and Accuracy*

Ontologies Are Part of the Journey to Data Success



Learn more about the EDM Association [DCAM](#) and [CDMC](#) data management frameworks

The AI Execution Gap

95%

Failure Rate in AI Execution
([MIT Report](#), 2025)

- ✓ It's not the tech, it's the adoption
- ✓ Al investments are increasingly fragmented, poorly governed, short-term focused, and misaligned to business strategies.
- ✓ Garbage in, Garbage out

When AI Underperforms or Misbehaves in Finance

Searching for patterns in enormous data sets is different from knowing the meaning of data

AI does not know, and unless instructed, derives:

- What financial concepts mean
- How concepts relate precisely across sets, models, and systems
- The rules and contexts that govern or condition the relationships between concepts
- Same vs. similar vs. different
- Explicit vs. implicit meaning

- *Finance has real rules and definitions*
 - *Enterprise*
 - *Legal/Regulatory*
 - *Practices*
- *Decisions and explanations cross domains and lines of business and jurisdictions*
- *Meanings need to be aligned and consistent*

**Expense, Risk, and Error:
“Naked” AI doesn’t seem built for modern banking**

Ontologies Changes the Game For AI: FIBO

Common definitions, rich relationships, rigorous governance, give FIBO incredible power to improve data management, analysis, and decision-making.

- The most rapidly growing use for FIBO today is to operationalize AI platforms
 - Radically improve the ability for AIs to use data to carry out more precise and explainable reasoning.
 - Enable discovery, classification and integration of enterprise data based on the definitions
- Data standardization across firms and systems, for example:
 - Reference glossary
 - Securities master data interoperability and management
- Facilitate enterprise interoperability (systems can understand each other)
- Regulatory reporting consistency, e.g., for BCBS 239 compliance
- Provisioning critical risk assessments and analytics (e.g., for KYC and AML)
- Integration of heterogeneous data sources across business units and enterprises

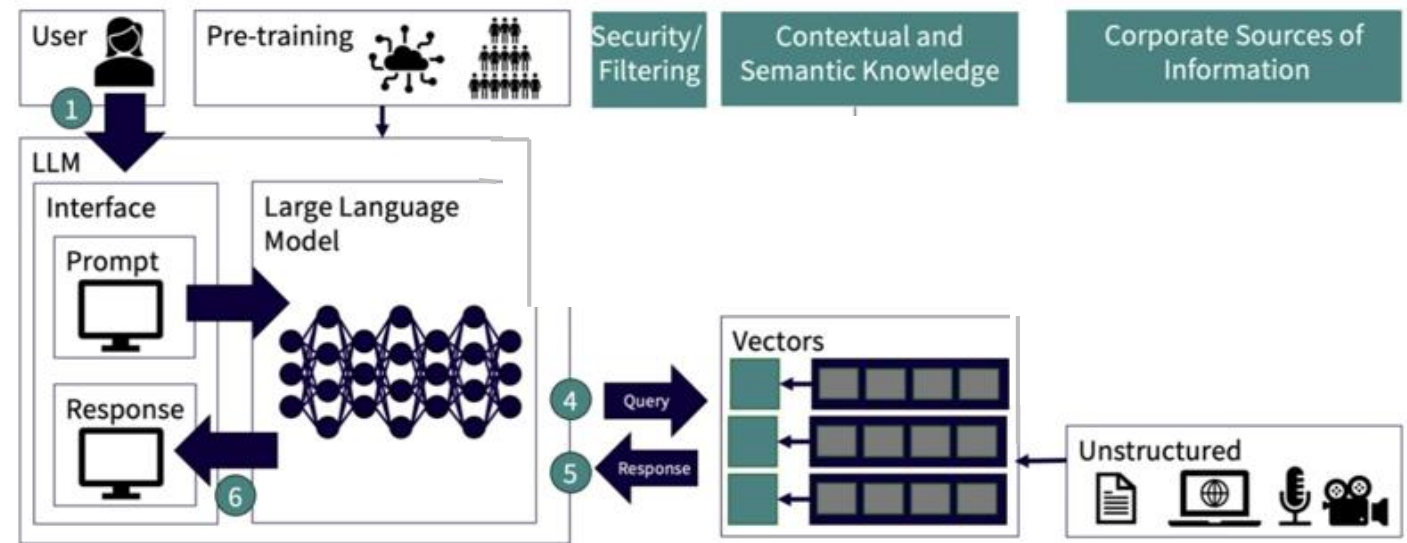
Today's Discussion

- Why AI Needs Ontologies
- What Is an Ontology
- FIBO: the Financial Industry Business Ontology
- Putting FIBO to Work
- EDM Association Research Findings
- Getting Started: Resources

Why AI Needs Ontologies

“Probabilistic” Isn’t Enough to Keep AI On Track

- Most AI – generative, agentic, etc. – relies on probabilistic reasoning applied to data sets (e.g., LLMs)
- Without proper context, semantics, and defined constraints, AI is prone to reasoning failures, inaccuracy, even hallucinations
- When anything is possible, behavior of AIs can be impossible to explain, improve, or trust



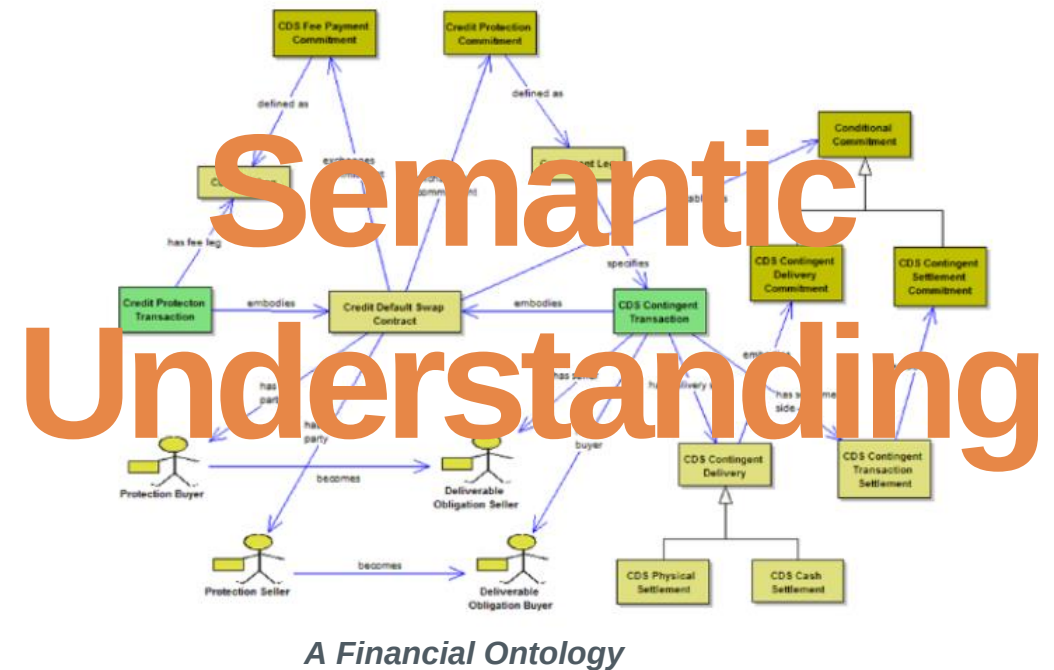
Probabilistic Reasoning Inside, But Need Logical Guardrails Outside!

Real Intelligence Requires Meaning, Context: Semantics

We know the missing information that makes data meaningful

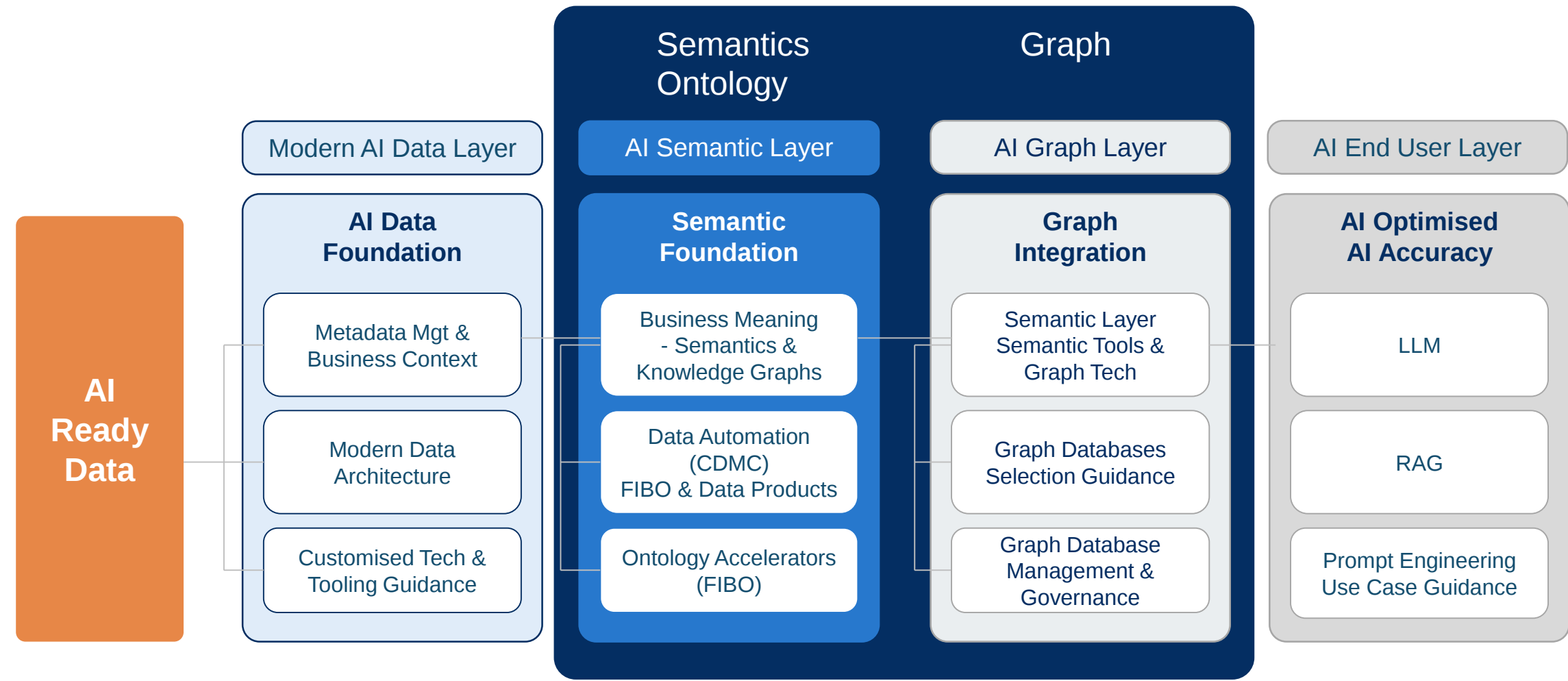
We can add:

- Definitions that are
 - Precise and unambiguous
 - Enterprise and industry-consistent
 - Readable by both humans and machines
- Context-specific roles
- Relationships between concepts
- Metadata, rules, constraints



Add these to data and you have “Precise, Unambiguous Meaning” ready for compute: An Ontology

Optimized Approach to Intelligence-Ready Data: Semantics, Graphs, Ontology



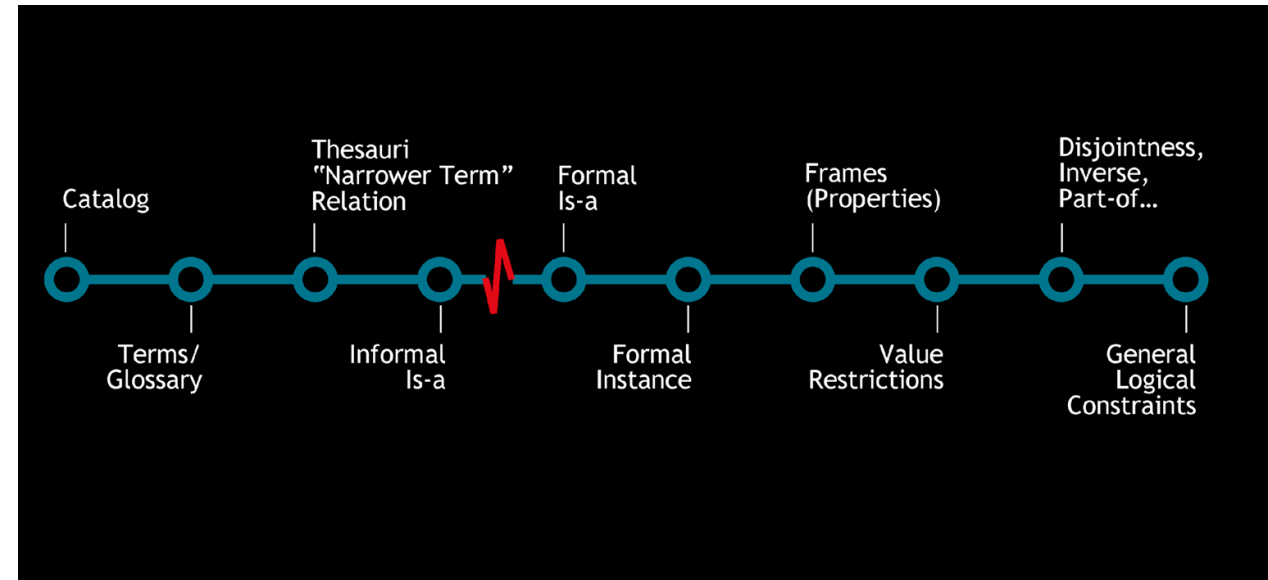
What Is an Ontology

Ontologies Are the Missing Ingredient for AI Success

Ontologies provide meaning, relationships and structure needed for AI ... and all computing

An ontology is a rich description of a domain with:

- Robust, shared, **explicit** definitions of terminology, concepts, nomenclature, and relationships
- Sentences *distinguishing* similar concepts, refining definitions and relationships (constraints, restrictions, regular expressions)
- Alignment between business and data
- Formal modeling using standards

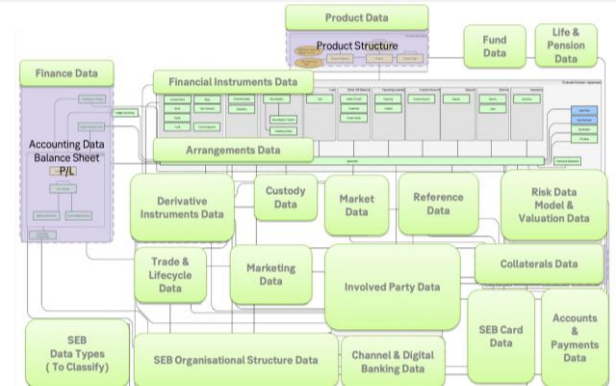


Source: Based on AAAI '99 Ontologies Panel – McGuinness, Welty, Uschold, Gruninger, Lehmann

Ontologies provide the guardrails: structured domain knowledge, connections between abstract concepts, integrate data, and validate outcomes logically

Ontologies Build From and Add to More Traditional Methods of Knowledge Representation

(1) CONCEPTUAL DATA MODEL



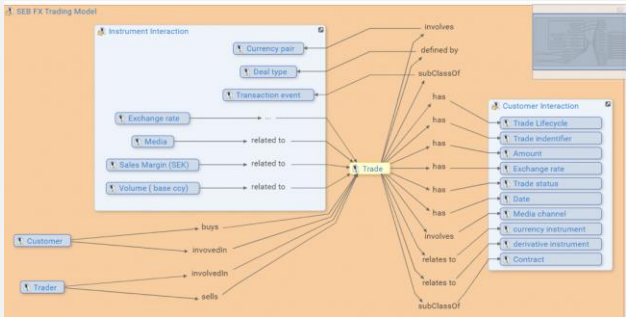
Context & Domain

(2) TAXONOMY: DATA CATALOGUE



Classify Data

(3) ONTOLOGY and KNOWLEDGE GRAPH



Concept relationships expressed

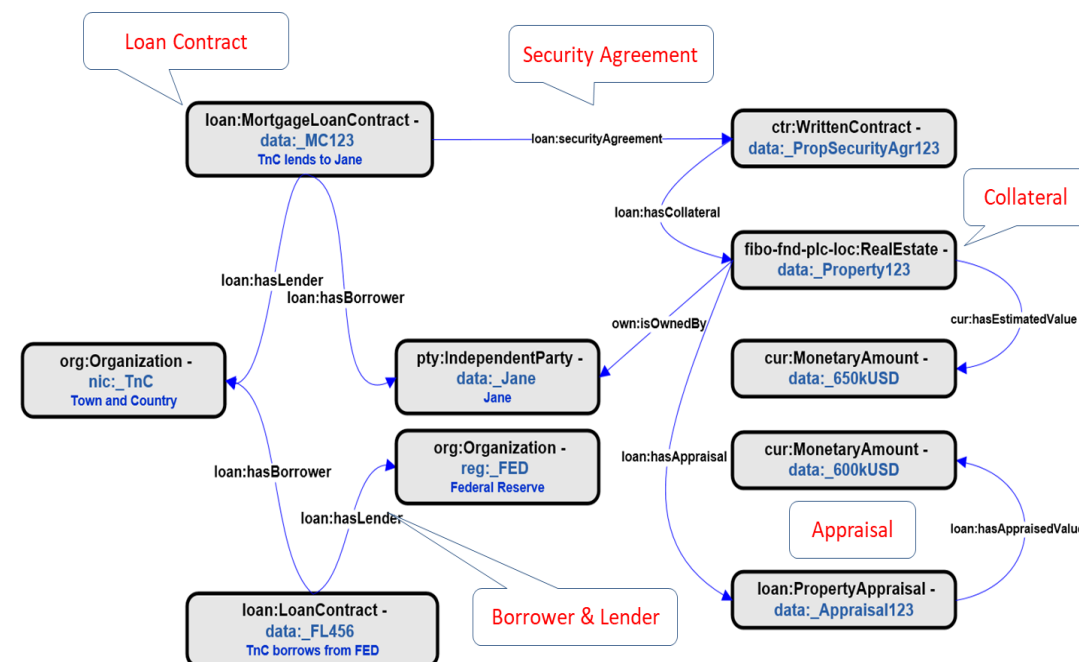
FIBO

FIBO: The Financial Industry Business Ontology

The ontology for the financial sector



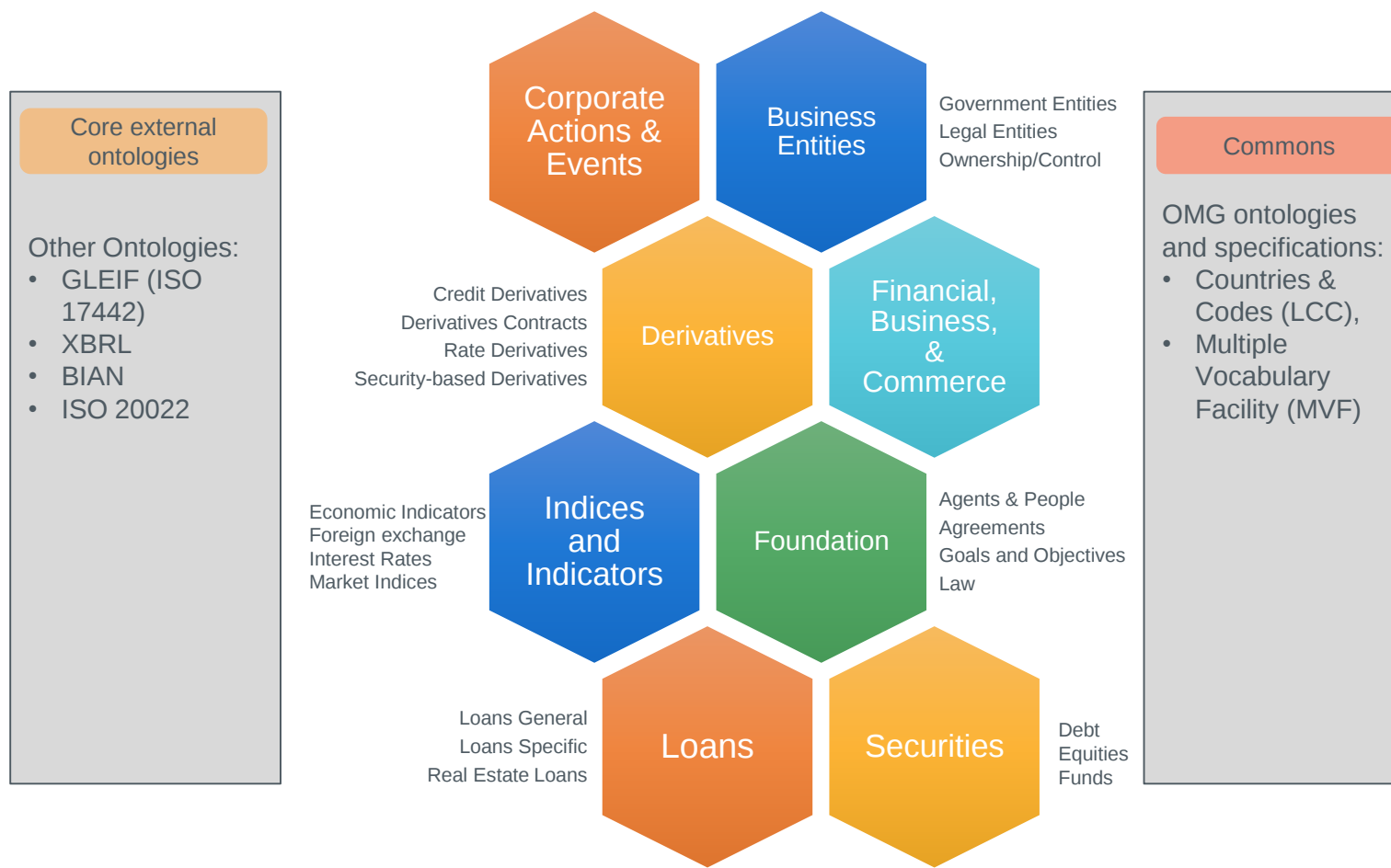
- Hundreds of classes and thousands of “precise and unambiguous” concepts defined by financial sector SMEs
- Downloaded and used as a whole, by financial concept domain or subdomain, or by individual concepts/ definitions
- FIBO is open source and free
- Downloaded by thousands of financial institutions and adopted by hundreds
- Developed and maintained by EDM Association since 2007



**Ontologies are “old”, but ready:
The missing link for today’s tools and technologies – especially AI**

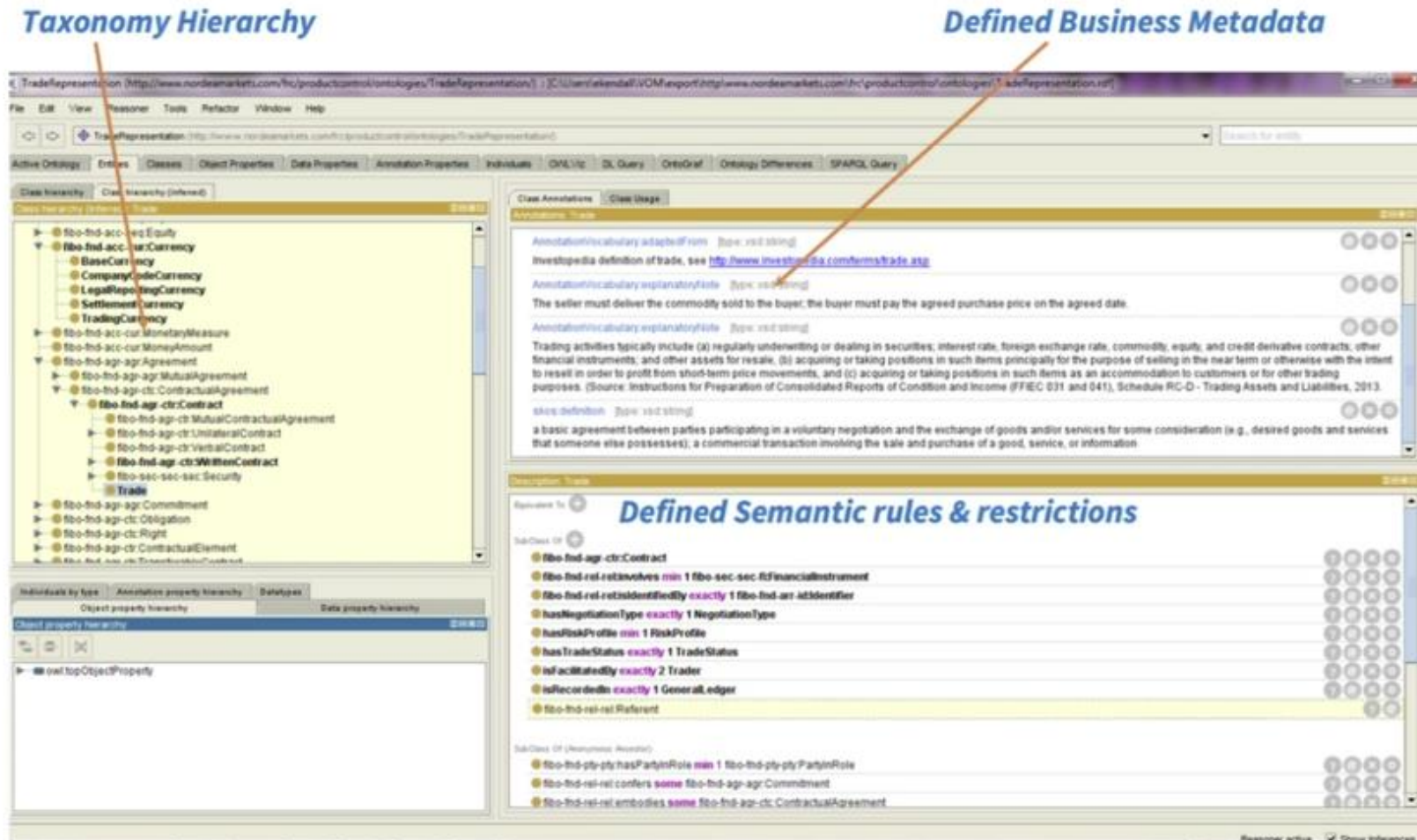
FIBO's Structure Is Built on Industry Logic

FIBO is organized into modular domains covering all major areas of finance



FIBO Domains
And Selected Subdomains

Using the Protégé platform

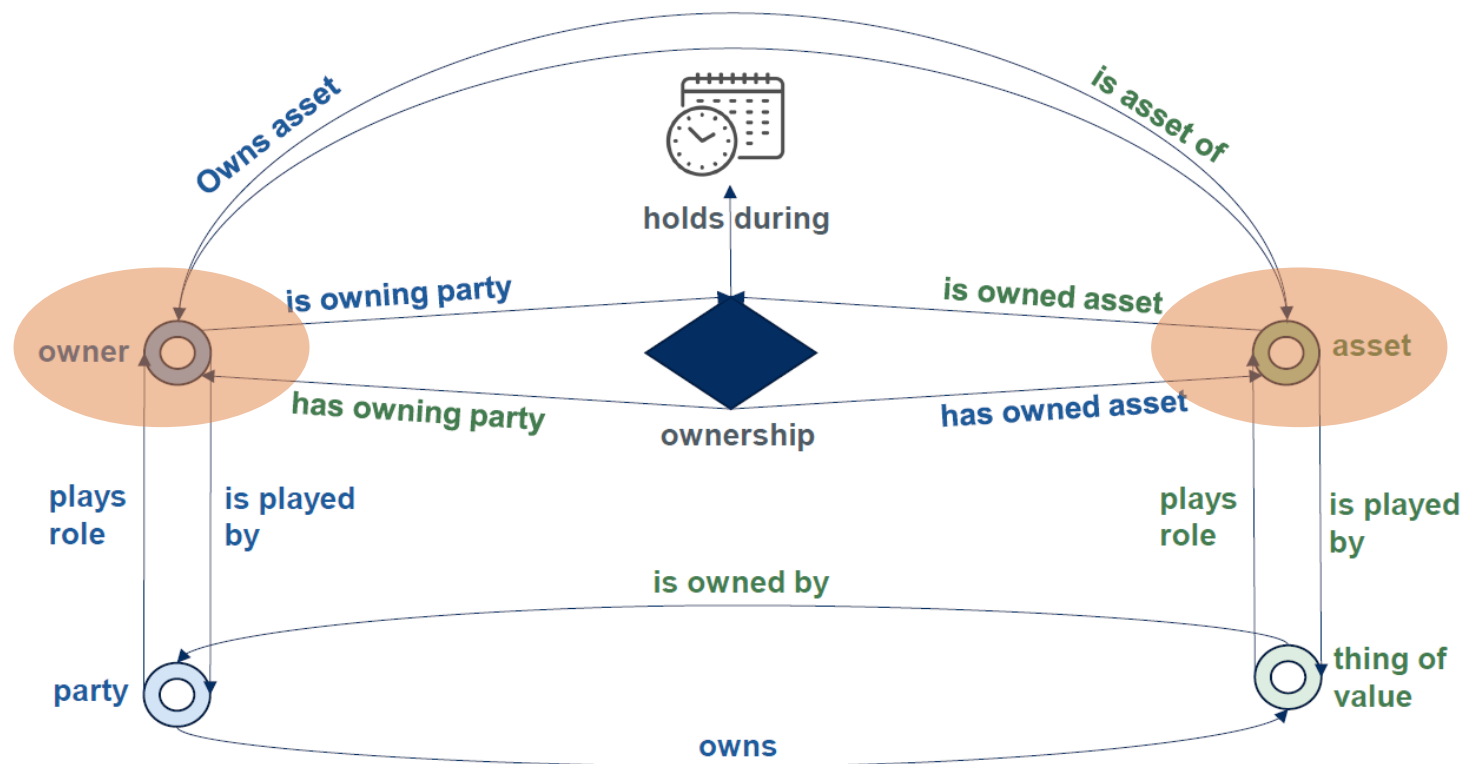


How AI Reasoning Is Enhanced Using FIBO



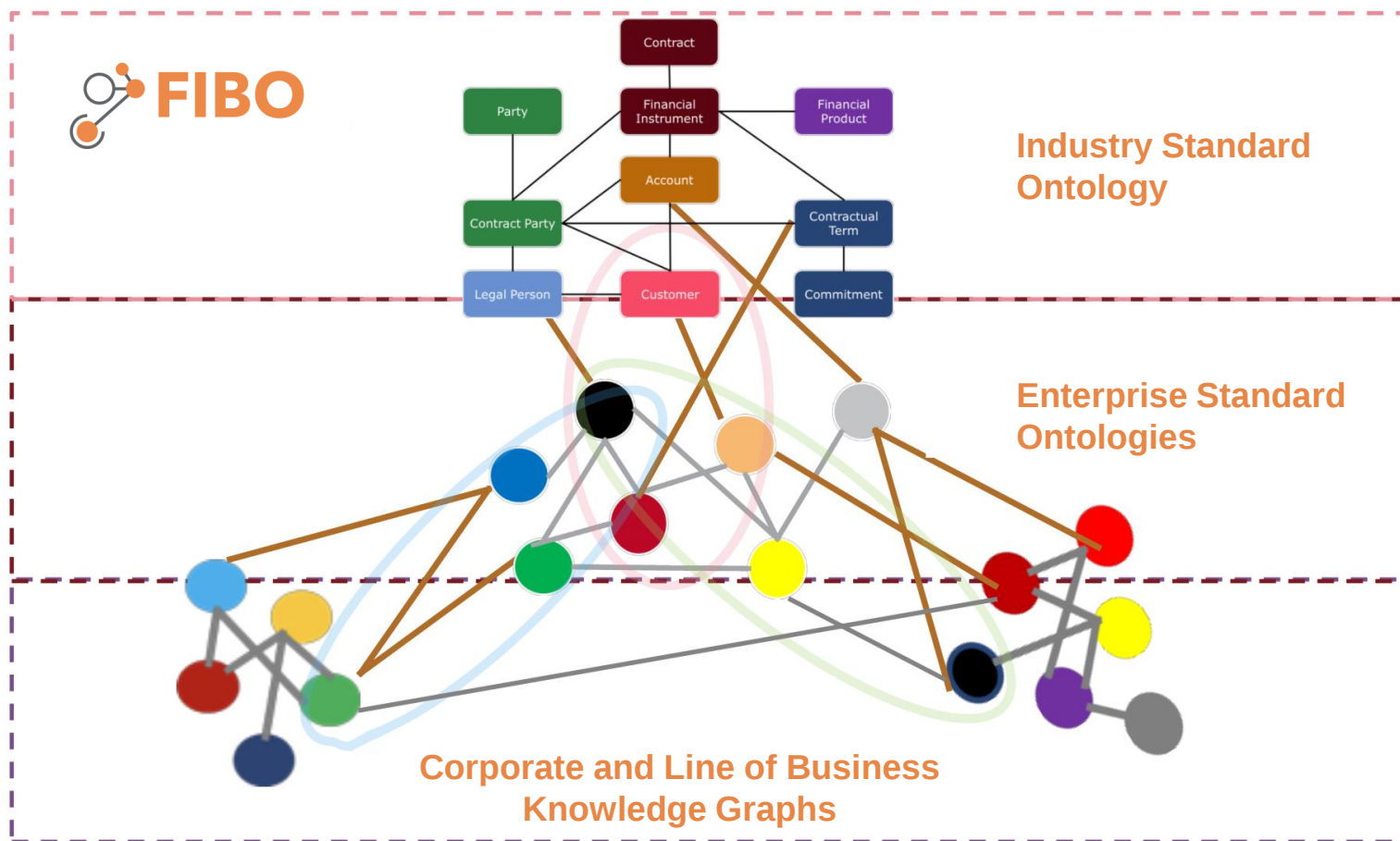
Illustration: Holdings of Entities and Assets

- Full or partial ownership?
- Evidence
- Direct, or beneficial through a broker or custodian?
- Corporate ownership structures can be layered thru subsidiaries
- *Combined with identity resolution, this pattern is critical to understanding exposure across complex financial instruments*



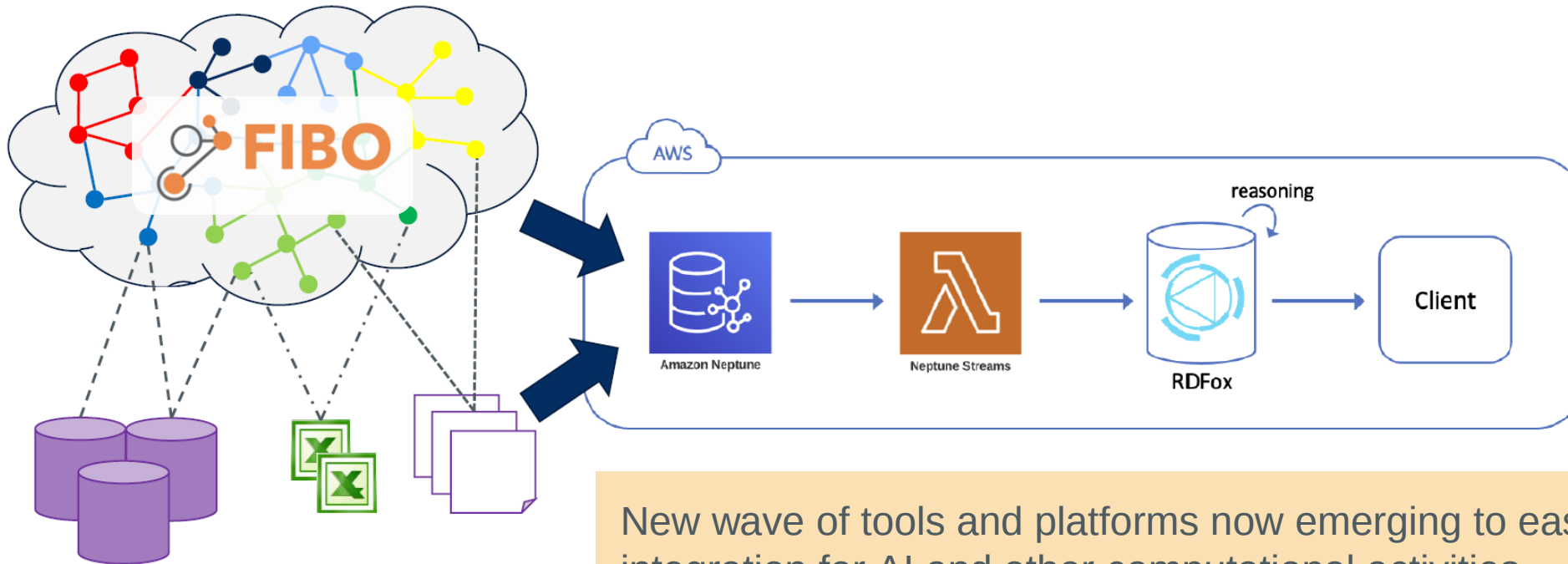
Putting FIBO to Work

FIBO as the Scaffolding for Enterprise Data



- Works with and maps to existing data structures, and especially ontologies
- A foundation and reference model, not a replacement
- Requires mapping, alignment, and translation
- Reconciliation of “sames” and “similar”

Illustrative Deployment of FIBO For AI



New wave of tools and platforms now emerging to ease FIBO integration for AI and other computational activities

- Ontology management and deployment tools
- “FIBO Inside”: Advanced platforms that already integrate FIBO
- Coming: Data products, enabling use of FIBO components and reducing the size of FIBO deployment

Research Findings: Bank Loans

Data Management for Asset Managers: **DMAM**

DMAM Community Interest Forum hosted by the EDM Association

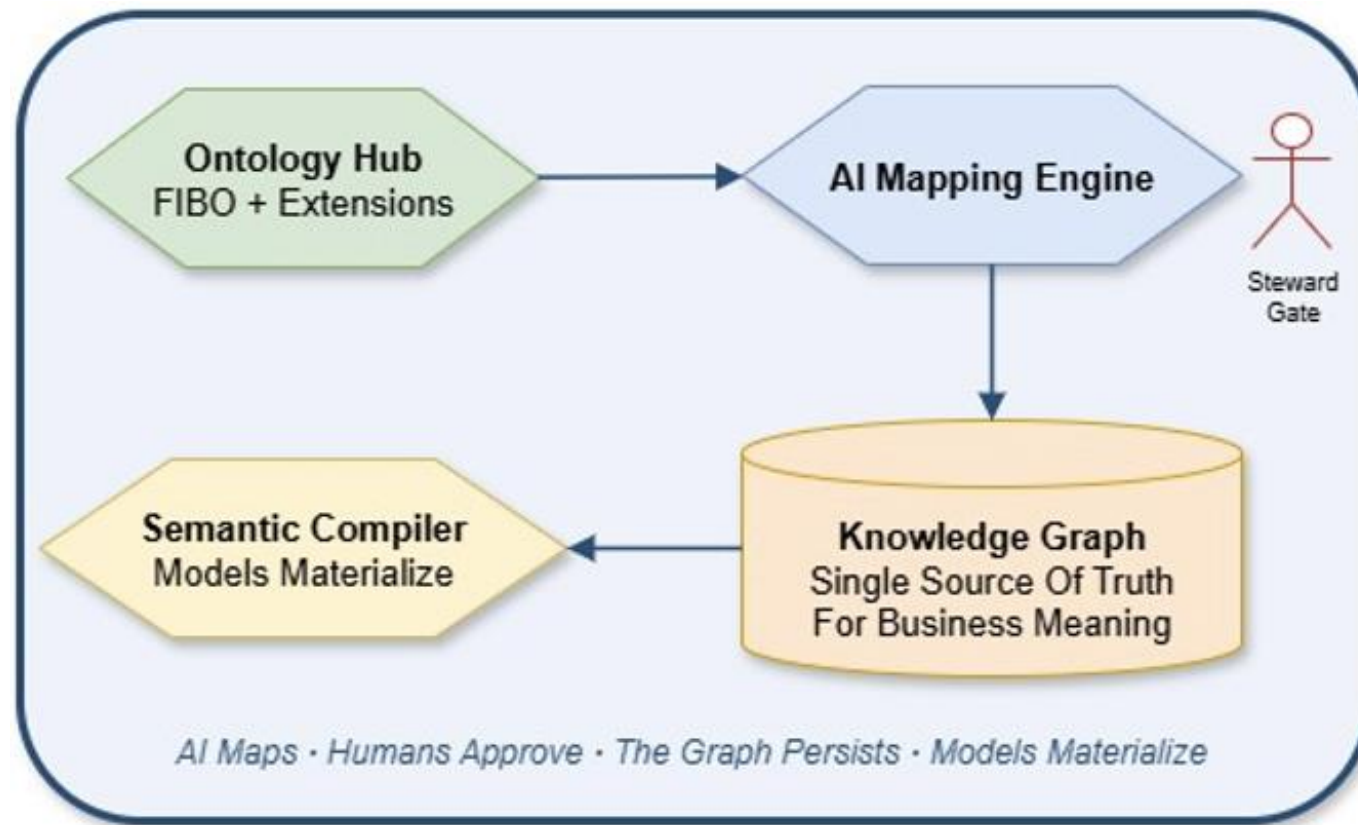
- A collaborative group of buy-side firms comprised of CDOs, operations executives, technology executives, and trading executives
- Dedicated to solving industry-wide problems related to:
 - Rising market data costs
 - Inadequate market data quality & delivery
 - Data governance for AI
 - Agentic AI governance

Exploring:

- Framework for market data quality & delivery
- Benchmarks for market data quality & delivery
- Registry for market data quality checks
- Industry-wide market data utility – securities reference data, syndicated bank loan data, etc.
- Golden source repository for securities and syndicated bank loan deal documents
- Agentic AI governance framework

Get involved in our [**DMAM Forum**](#) on EDMConnect

Semantic Layer for Bank Loan Credit Agreements



Analysis of Different AI-driven Approaches

Approach 1: Claude-only

Unified approach using Claude for all steps



1 Claude PDF Understanding

Claude reads and understands the entire document

+



2 Extraction

Extract structured information directly

+



3 Vectorization

Create embeddings for retrieval

+



4 RAG

RAG chatbot for question answering

Approach 2: Pipeline

Modular pipeline with specialized tools at each step



1 MinerU

Convert PDF to structured content (Markdown)



2 Markdown

Preserve document structure and headings



3 Structured Vectorization

Heading-based chunking for clean, semantic boundaries



4 GPT-4o Extraction

Extract structured fields from Markdown sections



5 GPT-4o RAG

RAG chatbot using retrieved context + extracted data



Objective: Evaluate both architectures across key dimensions to determine the optimal solution for accuracy, performance, cost, & explainability.

Analysis of Different AI-driven Approaches

Dimension	Approach 1: Claude-only	Approach 2: Pipeline
Accuracy	76%	95%
Cost per Document	\$0.39	\$0.14
Time per Document	57 seconds	180 seconds
Cost per Query	\$0.21	\$0.02
Time per Query	15-30 seconds	3-5 seconds

Analysis of Different AI-driven Approaches

- Pipeline approach wins on explainability, auditability and cost.
- Structured chunking improves retrieval precision and cross-section reasoning.
- Structured chunking significantly improves query response times.
- Retrieval quality will likely matter more than model IQ.
- Use of FIBO / Knowledge Graphs significantly improves results.

Getting Started: Resources

“NEW FIBO” Meets Your Need for AI Optimization

EDMA is investing to accelerate FIBO’s coverage and support infrastructure, especially for members

- [FIBO Forum](#), your home for FIBO insights, tools, resources, and instructions
 - Links to download and FIBO viewer sites
 - Get-started videos, “office hours”, discussions and insights
 - Library of presentations, cases, documentation, and research
 - Access to special Working Groups
 - Engagement with colleagues, regulators, vendors, ontologists
 - ***First FIBO Forum open meeting: September 22, 11 AM Eastern***
- Look for more webinars, cases, and training opportunities
- For a more rigorous session, register for EDM Association’s upcoming 2-day [AI Optimization Masterclass](#) – *More dates coming soon!*



Resources



- **Join the FIBO Forum:** <https://edmconnect.edmcouncil.org/fiboforum/home>
- **View FIBO:** <https://spec.edmcouncil.org/fibo/ontology>
- **Download FIBO:** <https://github.com/edmcouncil/fibo>
- **Training:** *Coming soon!*
- **For more information:**
 - David Blaszkowsky: DBlaszkowsky@edmcouncil.org
 - Elisa Kendall: EKendall@edmcouncil.org

Learn more about EDM Association

The screenshot shows the EDM Association website homepage. The header includes the EDM Association logo, navigation links (Membership, Frameworks, Training, Engage, Innovation, About), and buttons for 'Sign In' and 'Join now'. The main content area features a large hero section with the title 'Global Advocates for Data & Analytics Management' and a sub-headline 'The leading global trade association providing best practices, standards and education to data and business professionals in our data-driven world.' Below this is a 'What we do' button. To the right, there's a 'TODAY'S HIGHLIGHTS' section with three items: 'Isle of Man and EDM Association Join Forces to Build a New Data Economy', 'EDM Council and Object Management Group Combine to Create Global End-to-End Data and Standards Authority', and 'Eyes on Data: Best Practices and Excellence in Data Management Matter More Than Ever'. The footer includes a call to action 'Join a vibrant community of 25,000+ business leaders, CDOs, and data and analytics professionals across all industries.' and a row of partner logos: Bank of England, NOVARTIS, HSBC, verizon, Schneider Electric, Microsoft, Google, and AEGON.



700+ Member Firms
Cross-industry,
including Regulators



30,000+
Professionals



Worldwide
Americas, Europe,
Africa, Asia, Australia



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