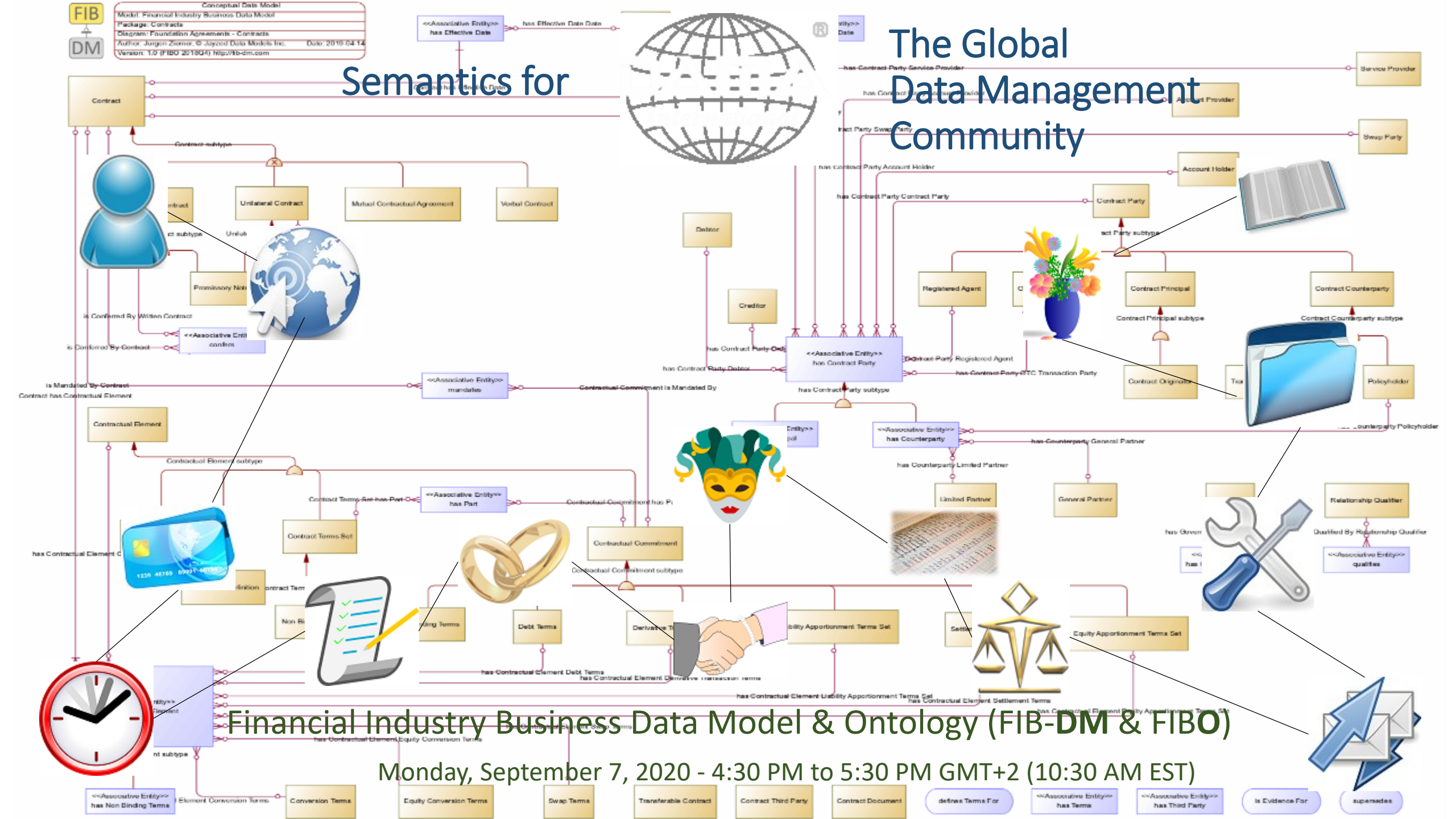

Semantics for
The Global
Data Management
Community
Financial Industry Business Data Model & Ontology (FIB-DM & FIBO)
Monday, September 7, 2020 - 4:30 PM to 5:30 PM GMT+2 (10:30 AM EST)

FIBO, FIB-DM, and this DAMA session

The Financial Industry Business Ontology, FIBO, is the most extensive Domain Ontology Schema.

The Financial Industry Business Data Model is the complete model-transformation of the industry-standard ontology into a Conceptual Data Model.
800 users downloaded the FIBO Data Model.

In June, the South Afrika chapter hosted a meeting about managing huge models in PowerDesigner with FIB-DM as an example. Participants wanted to learn more about the Finance Model.
You can view and download today's presentation and watch a replay of this session:
https://fib-dm.com/semantics-for-dama-international/

Finance key point

You work at a Financial Institution and already embrace model-driven development, reference models, and industry standards.

Data Architect experienced in Enterprise Reference models. You want to get started on the new industry-standard.

Ontologist with FIBO experience. Semantic technologies are still emerging at your bank. You want to promote FIBO concepts across your organization

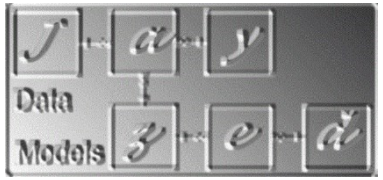
Finance / **Business** / **Management**. You want to improve Information Management with a strategic path to semantic excellence.

Finance key point

Presenter – ontologist and data architect

Jurgen Ziemer has 20 years of industry experience as a data architect and ontologist at leading Financial Institutions and service providers.

- Seven years as an IBM Software Group Consultant for the Banking and Financial Markets Data Warehouse (BFMDW) model at 45 banks in North America, Europe, and Asia.
- Four years were implementing BFMDW at Citi and Deutsche Bank.
- Contributor, reviewer, and speaker at FIBO conferences



Jayzed Data Models Inc. is a US consulting company incorporated in 1999.

Jayzed holds the FIB-DM copyrights and is the designated assignee of the Configurable Ontology to Data Model Transformation (CODT) Patent.

Jayzed Data Models

Accenture

IBM

Credit Suisse

Deutsche Bank

Citi

Reuters

German Stock Exchange

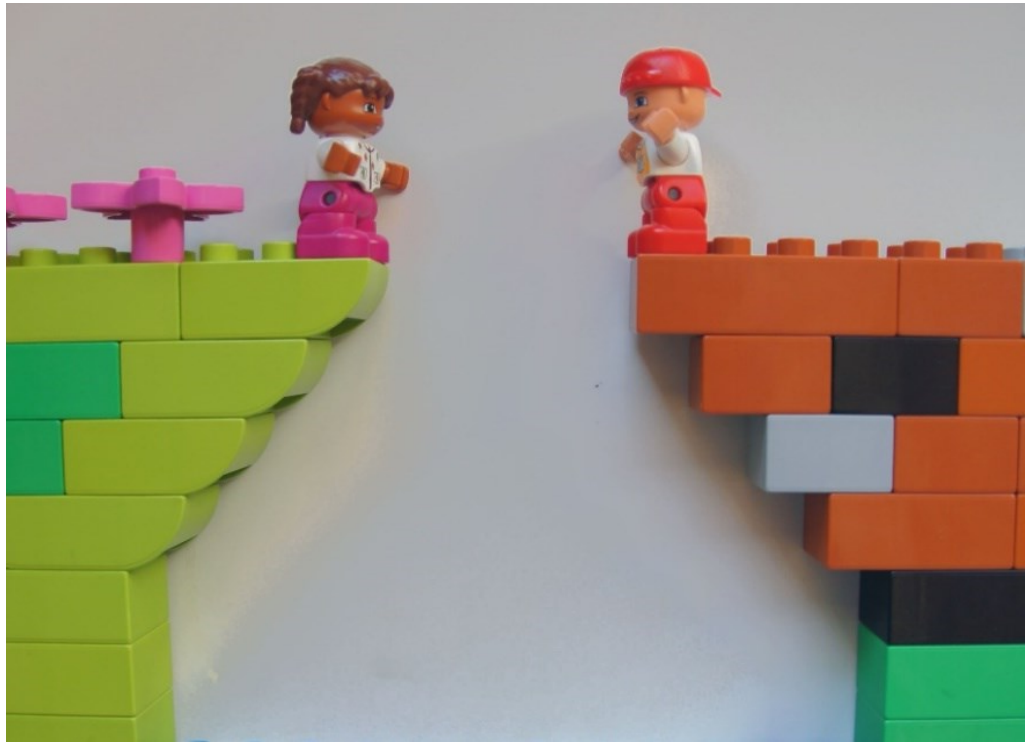
The Challenge:

There is a chasm between semantic and conventional data management.

Global Financial Institutions (FI) already implemented FIBO.

The EDMC specified FIBO in Ontology Web Language (OWL).

OWL runs on specialized databases, RDF (triple) stores



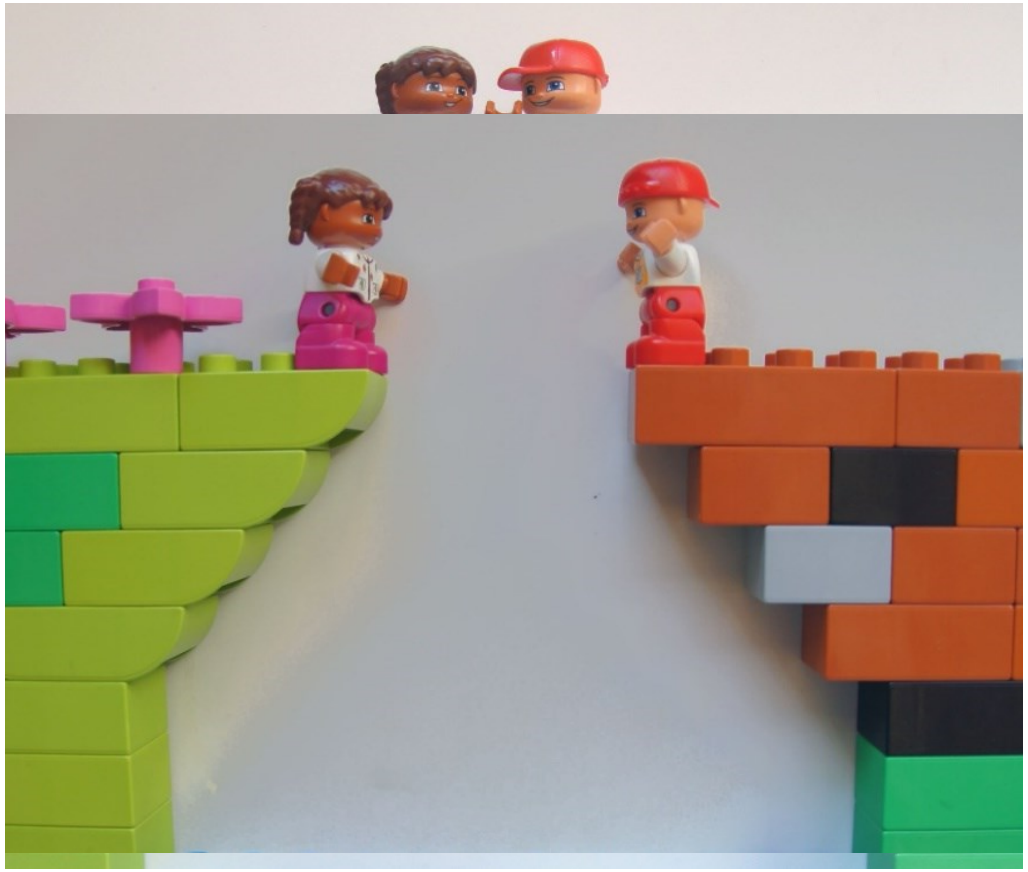
Midsize banks face high barriers - tooling and human expertise.

OWL is a complex language that needs highly specialized ontologists.

IT-departments must still support and design relational databases.

Finance key point

FIB-DM is the bridge across the chasm.



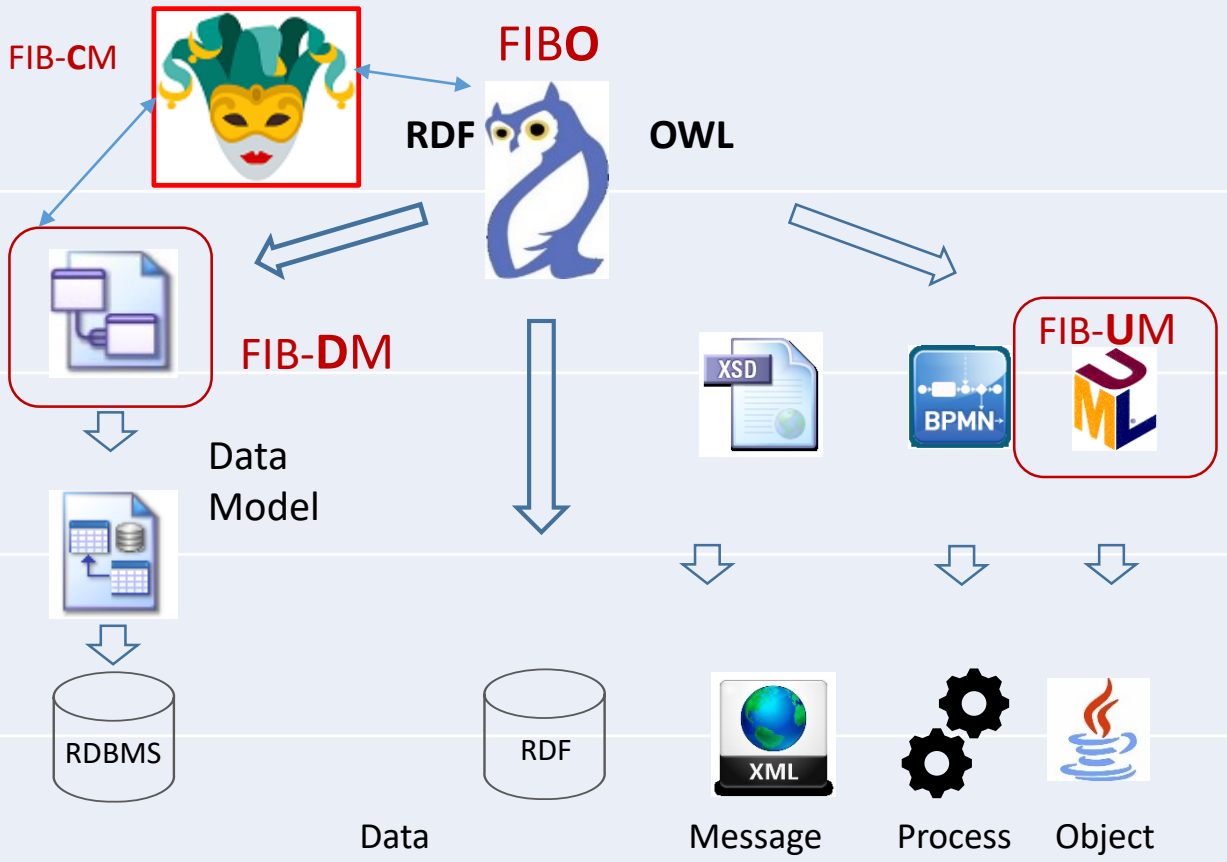
The Industry Standard is available in your Data Modeling tool.

Finance key point

The Vision:

Semantic Enterprise Information Architecture (SEIA)

Use	Type		Level
Business	Conceptual		Enterprise
Design	Logical		Department
	Physical		
Development	Implementation		Project

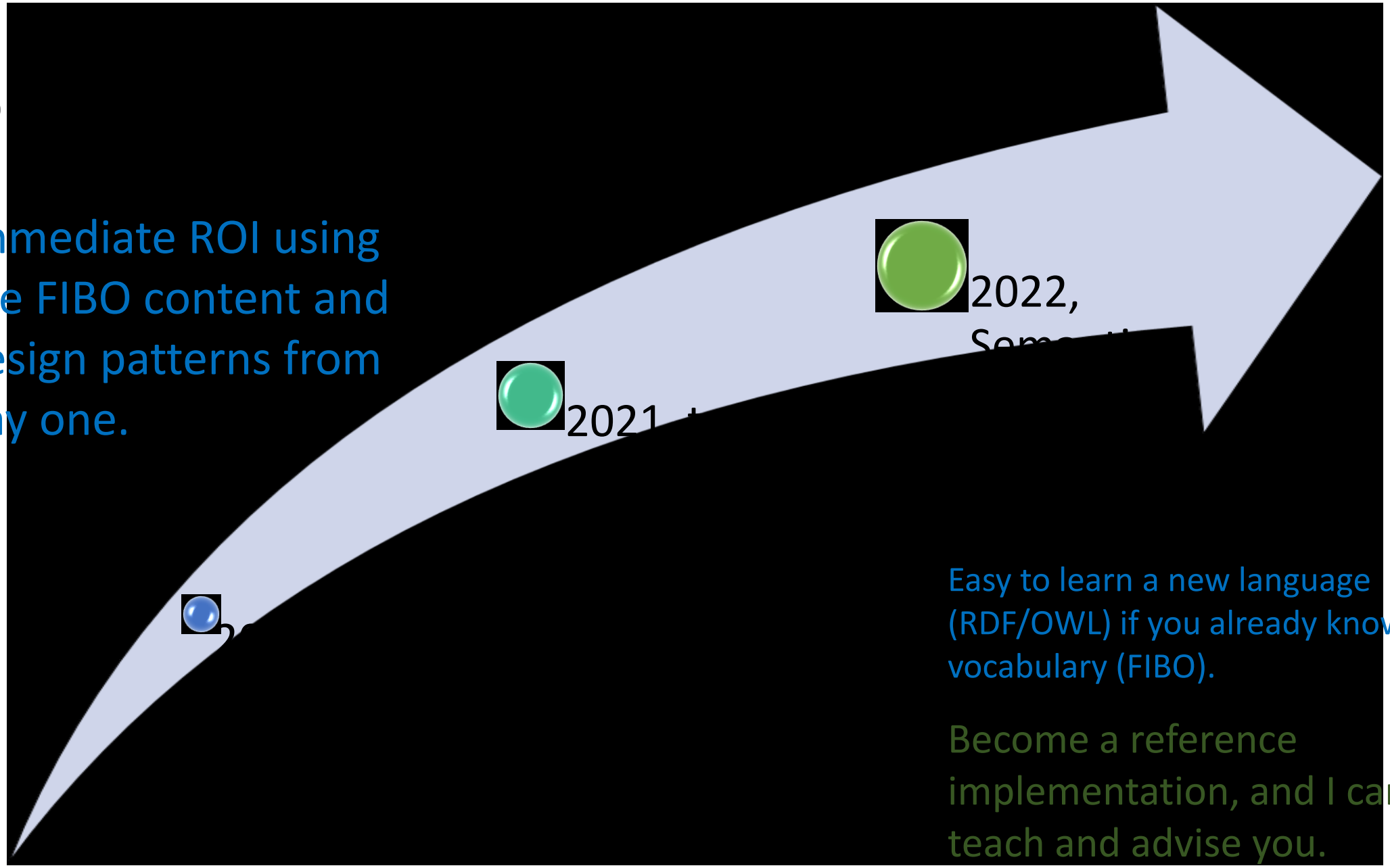


Finance key point

The Way:

Yo

Immediate ROI using the FIBO content and design patterns from day one.



Easy to learn a new language (RDF/OWL) if you already know the vocabulary (FIBO).

Become a reference implementation, and I can teach and advise you.

Finance key point

FIBO is the authoritative model of Financial Industry concepts, their definitions, and relations.

- Both EDMC and DAMA promote Data Management best practices.
- DAMA is the world's largest association of professionals, and not sector-specific.
- The Enterprise Data Management Council (EDMC) is the Global Association of over 200 Financial Institutions (FI).

"The Financial Industry Business Ontology (FIBO) is a **business conceptual model** developed by our members."

*The EDMC membership Tier A starts at $200 billion in assets under management. Midsize banks for FIB-DM licenses and this document are banks with assets between $50 and $200 billion.

Finance key point

Origins of CODT and FIB-DM

NY Bank needs Schema for a new Security Master System, trying to leverage FIBO for Logical Data Model.

Challenge: Data Architects are not familiar with RDF/OWL and have no experience in Protégé or Topbraid
Workaround: Ontologist writes SPARQL queries to extract metadata into MS-Excel spreadsheets.

CT AIM with Hedge Fund Ontology SEC Form PF assessments needs a relational platform

Challenge: Converting operational ontology of some 200 FIBO and hedge fund specific classes
Workaround: Manual transcription of graphs into ERWin diagrams.

Existing tooling chokes on very large ontologies and does not derive a useful Data Model.

Ontologists and Data Architects copy and paste manually.

So, I developed a better transformation and FIBO data model.


Data Architect

Ontologist

Premium / Freemium is the FIB-DM Funding Model

Learn French
10 Free Lessons

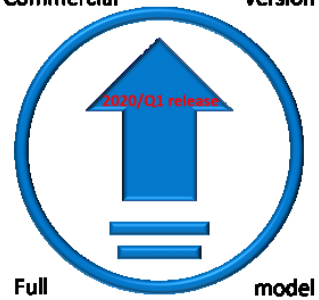
10 more
Premium Lessons

Freemium
Marketing /Pricing

FIB
Core
DM

open source initiative®

Commercial Version



FIB 2020/Q2
Full
DM release

4 modules, 1029 entities

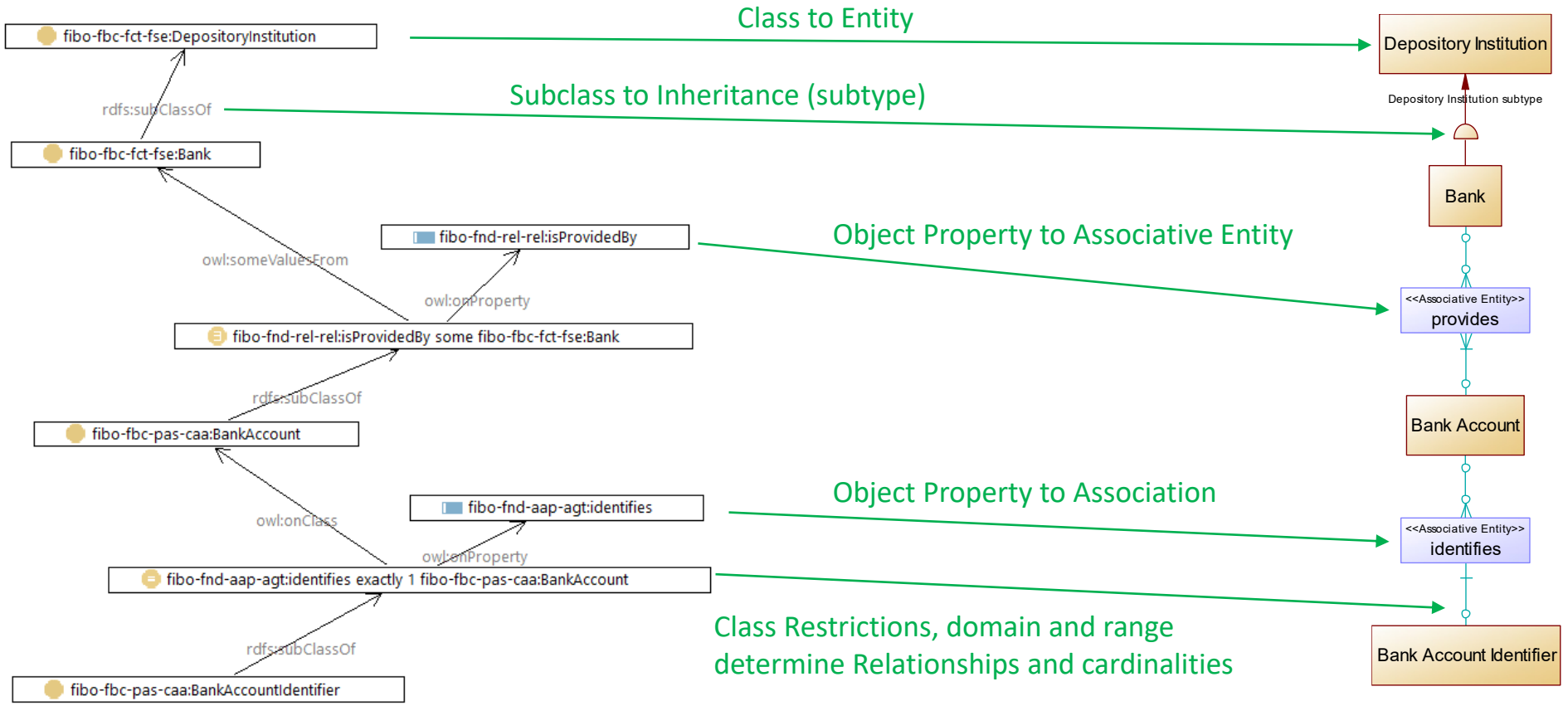
8 more modules, 3534 entities

4,568 entities

Finance key point

Ontology-derived Data Model

Ontology graph | **Transformation/mapping** | **Conceptual Data Model**



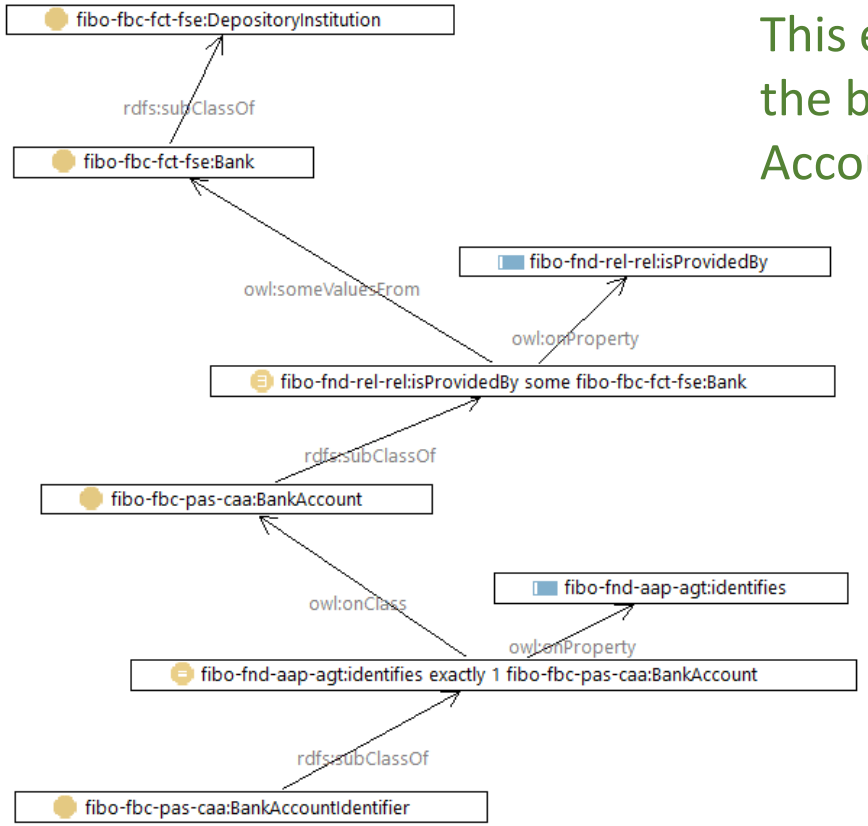
CODT patent drawing FIG.1 System (removed numerals and added colors)


Data Architect

Ontologist

Ontology-derived Semantic Data Model

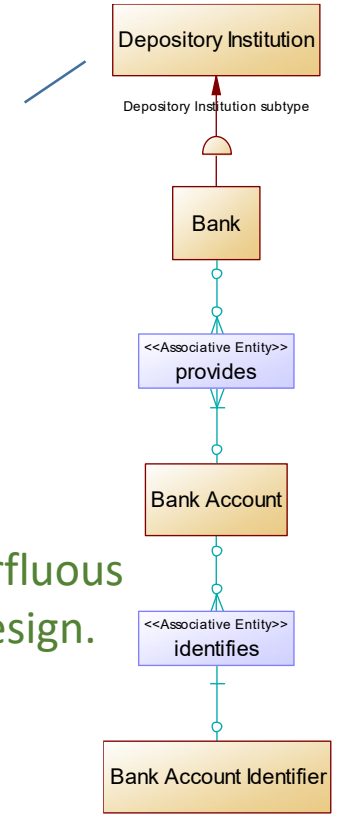
Ontology graph



This entity-relationship diagram is the best representation of the Bank Account, its provider, and ID.

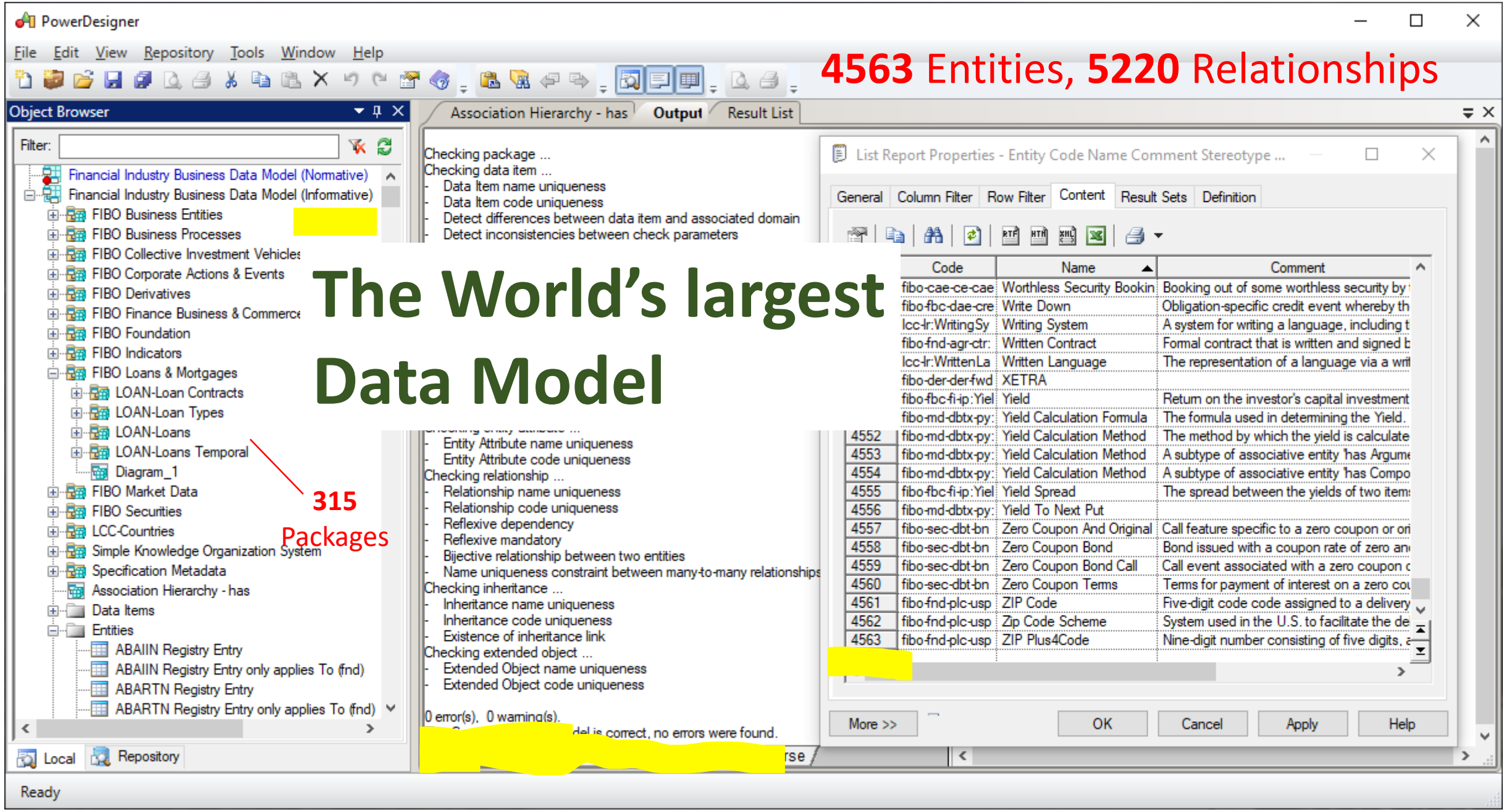
There are no missing and no superfluous entities and relationships in the design.

Conceptual Data Model



Data Architect

Ontologist



The World's largest Data Model

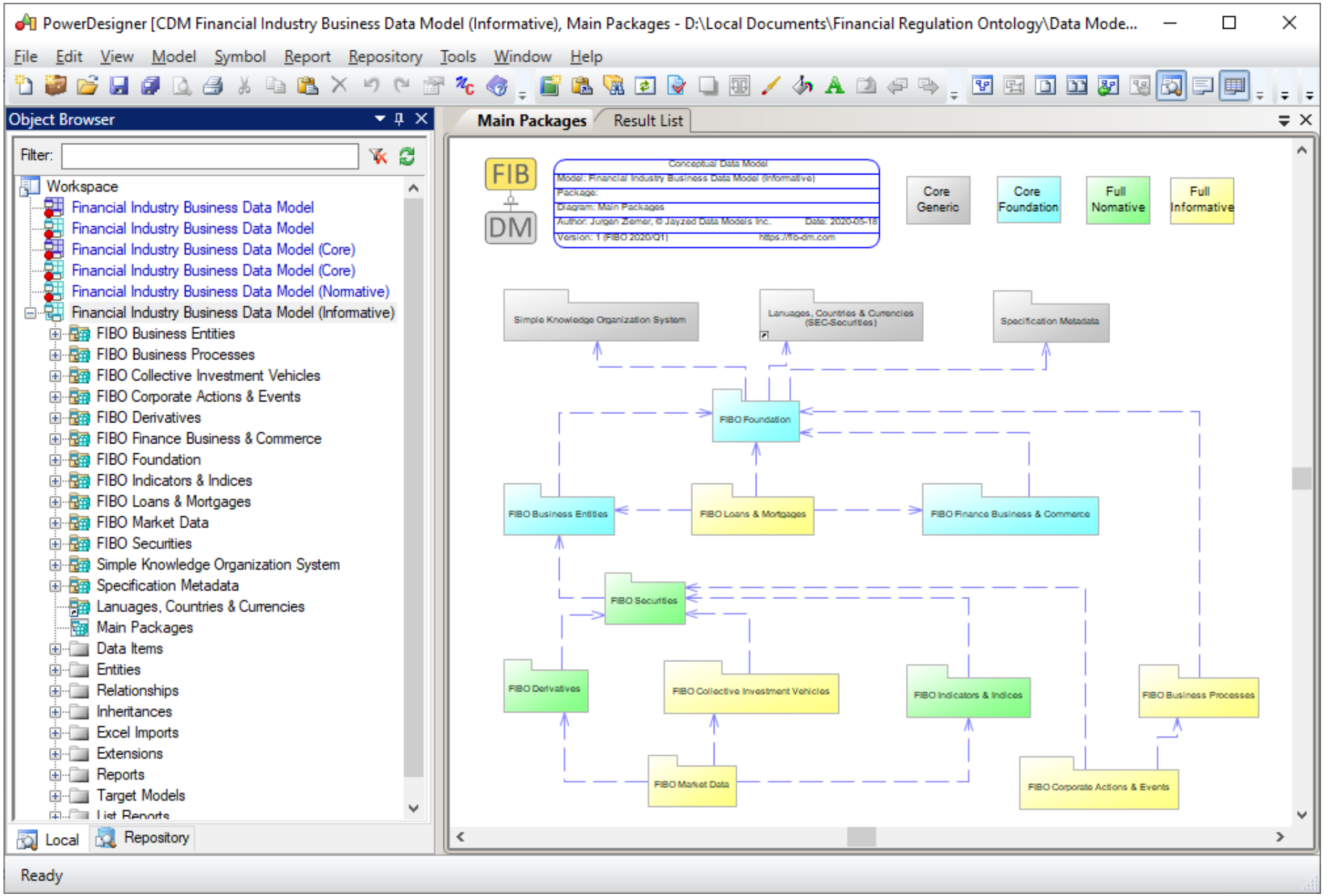
315 Packages

Packages

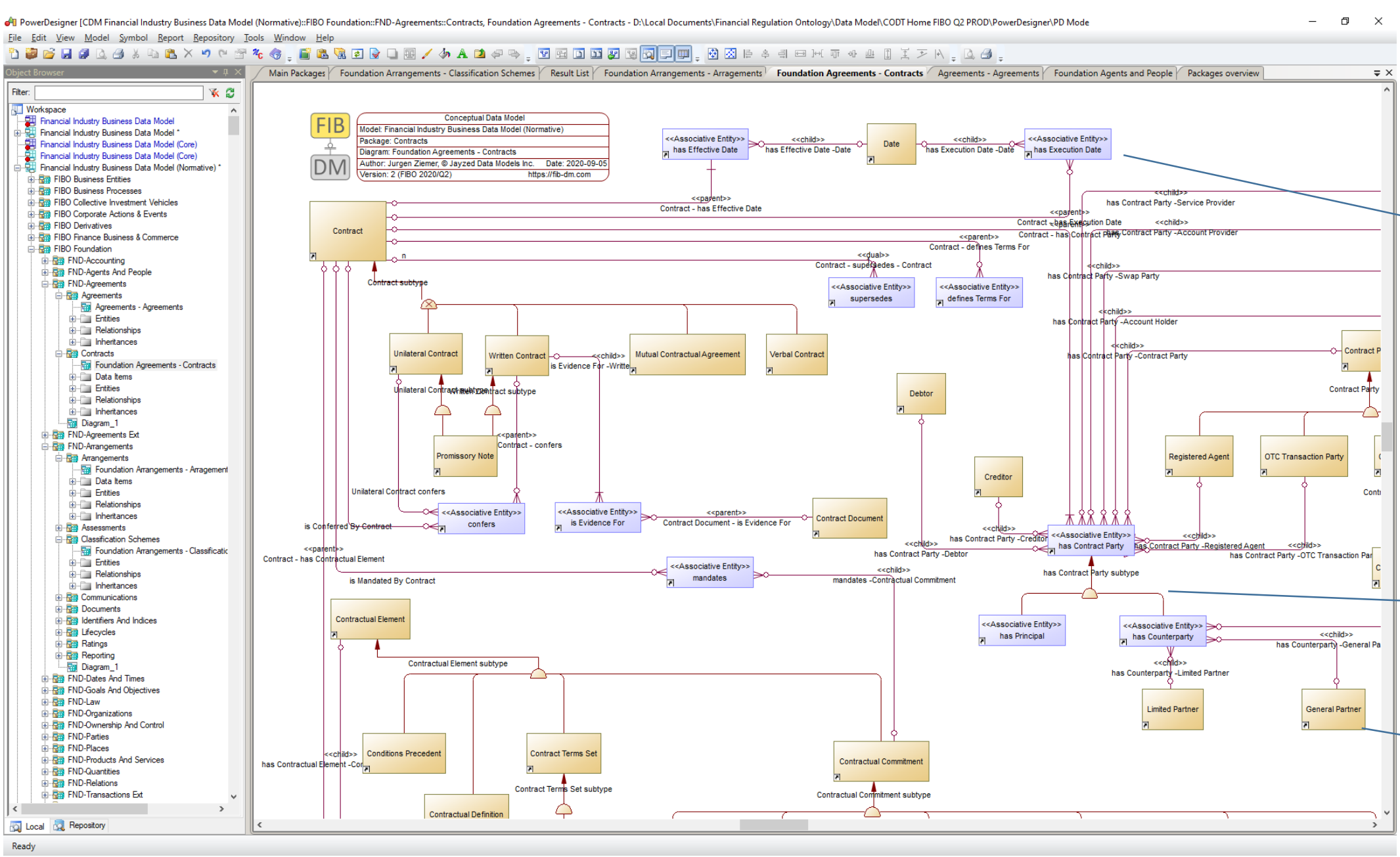
A colossal data model is intimidating.

FIB-DM training teaches two parallel approaches to master the content: **Packages** and Concept **Hierarchies**.

The package approach is to understand FIBO Core, and then to proceed to subject areas.



Package Diagram



Associative Entities are blue

Associative Entities have deep hierarchies

Base entities are orange

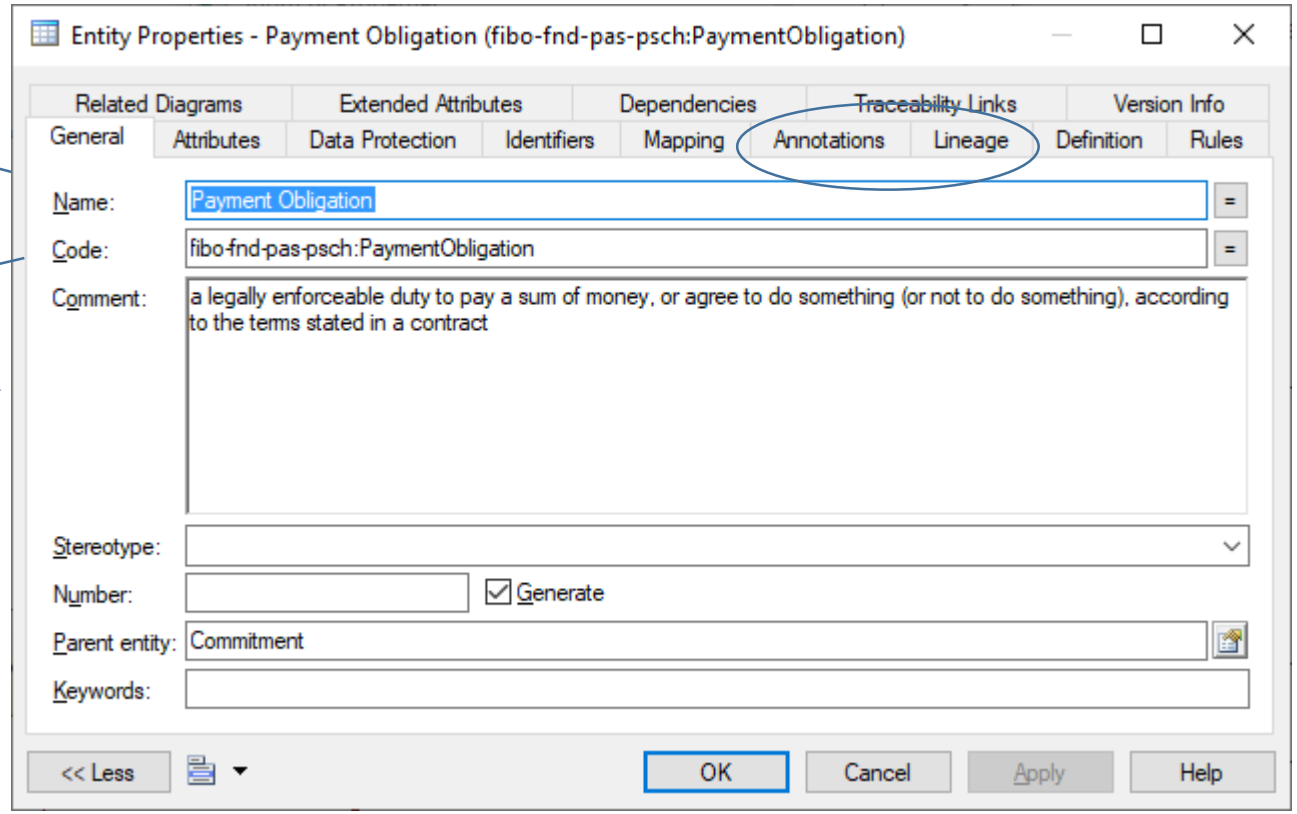
Entity properties

The Name is the ontology class *Localname,* converted from Camel Case to LDM naming convention (capitalized with space between words).

The Code transforms from the ontology class *Prefix*: *Localname*.

The Comment populates from the class annotation RDFS comment and SKOS definition.

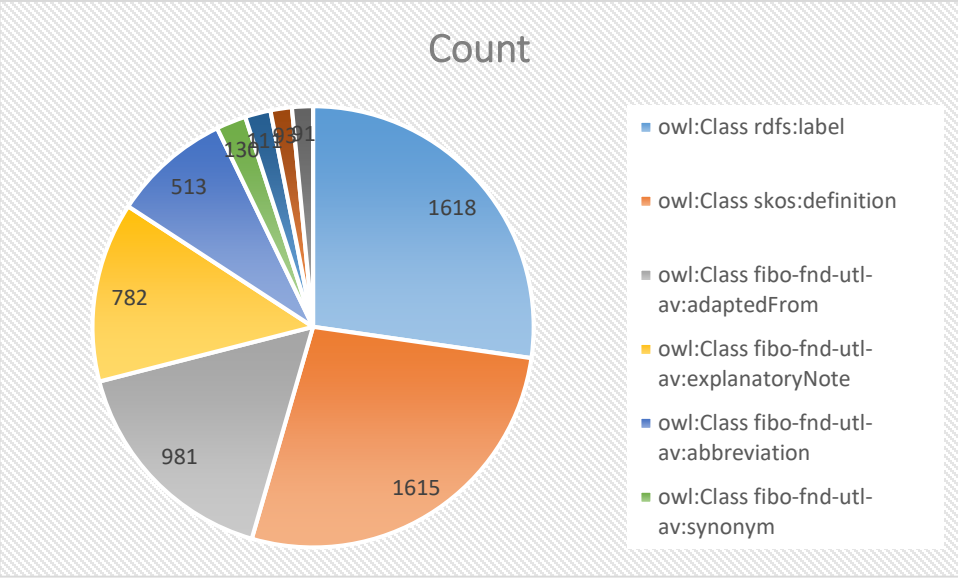
There are two particular tabs for ontology derived data models, Annotations and Lineage.

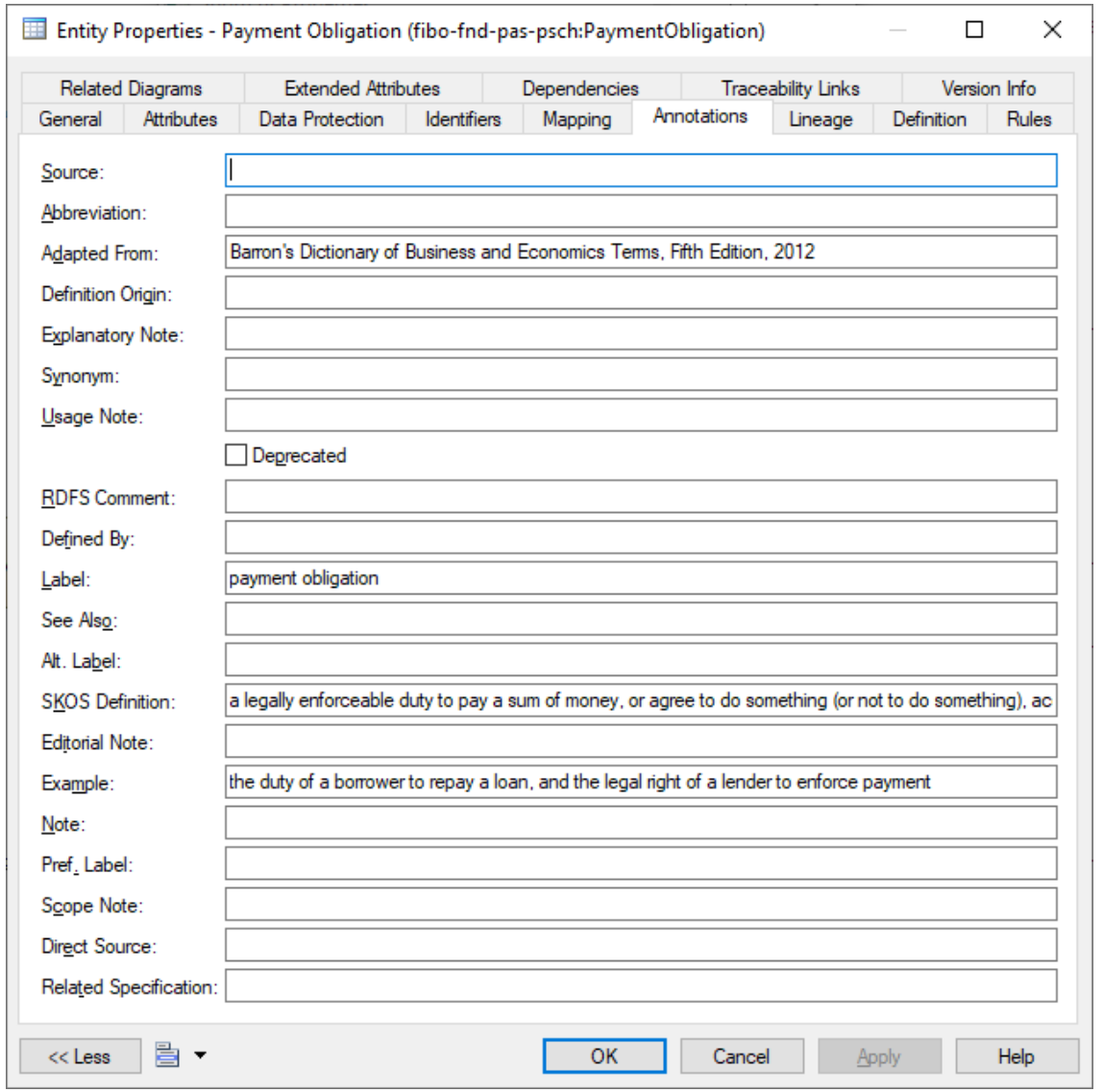


Entity annotations

FIBO has extensive documentation captured in annotation properties.

The chart shows the number of classes with annotated documentation.





Data Architect

Ontologist

Entity lineage

The Lineage tab captures ontology metadata of the source class. The extended attributes provide traceability into the ontology and preserve semantics beyond the entity-relationship model.

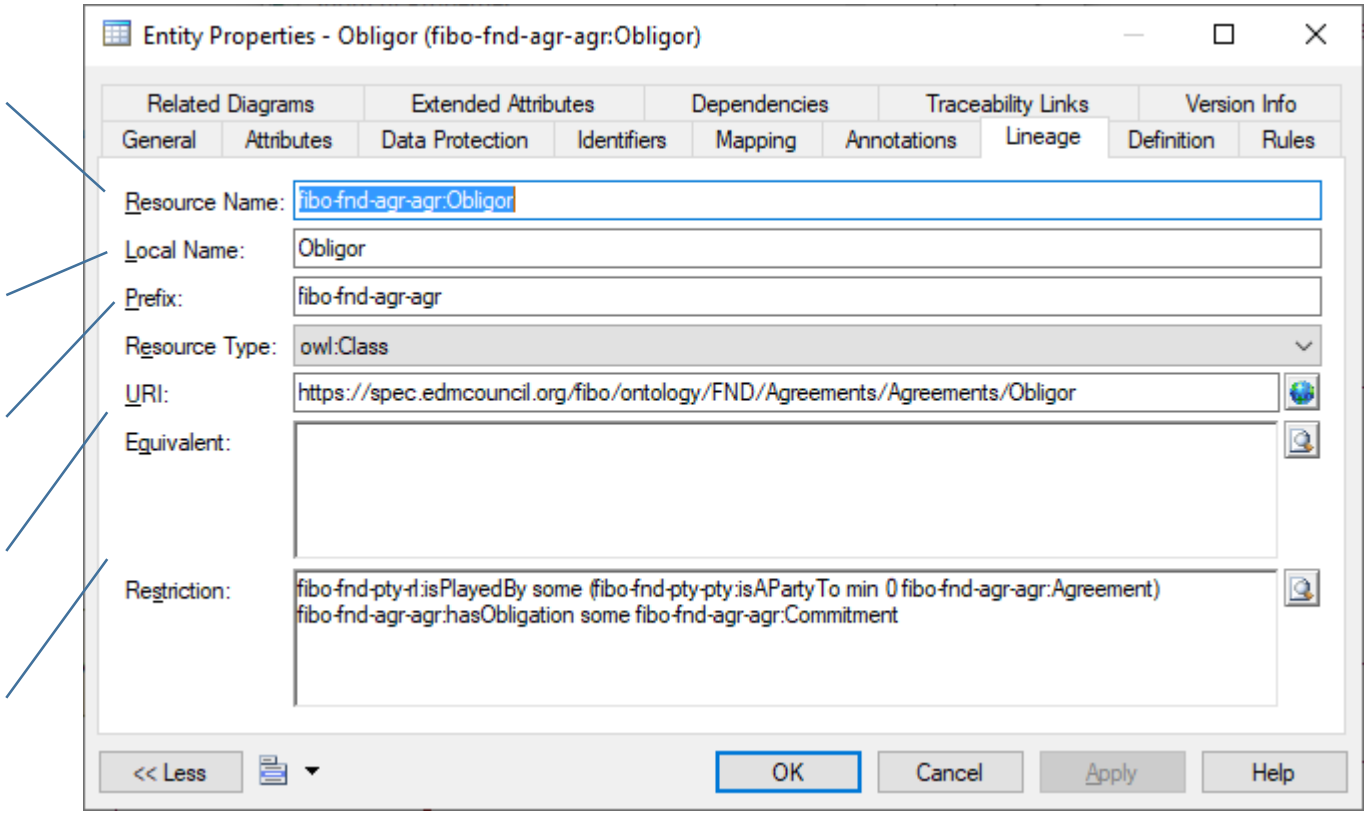
The Resource Name is class *Prefix* and *Localname*. FIB-DM uses the resource name as the entity code, but you can generate your codes in the modeling tool.

The Localname is the rightmost string in the Resource Name and URI.

The Prefix is an abbreviation of the URI defined in the ontology.

The Uniform Resource Identifier of the class is a link to the FIBO source ontology.

Restriction and Equivalent class axioms formulate OWL semantics.



The FIBO resolves conceptual defects


Robert II d'Uzès, 1422

The Involved Party is dead.
Long live the Autonomous Agent!


600 years later, the *Involved Party* is still an ultimate supertype in numerous reference models and databases*.

The FIBO breaks up that comingled entity into two fundamental concepts, the *Autonomous Agent* (person, legal entity) and *Thing in Role* (customer, employee, broker).

* A non sequitur is a conclusion or statement that does not logically follow from the previous argument or statement (a joke).


Data Architect

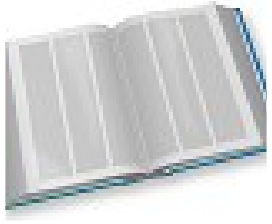
Ontologist

FIB-CM 15 concepts, mnemonic icons, and abbreviations

Enough to visualize design in user-friendly concept maps

AA
Autonomous Agent

TIR
Thing in Role



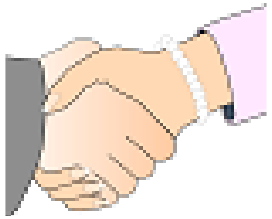
REF
Reference

ARR
Arrangement

LOC
Location

PRD
Product

SVC
Service



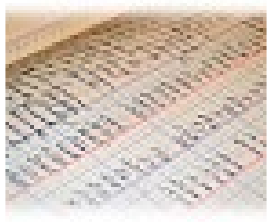
AGR
Agreement

DOC
Document

COM
Commitment

CE
Contractual Element

LC
Legal Construct



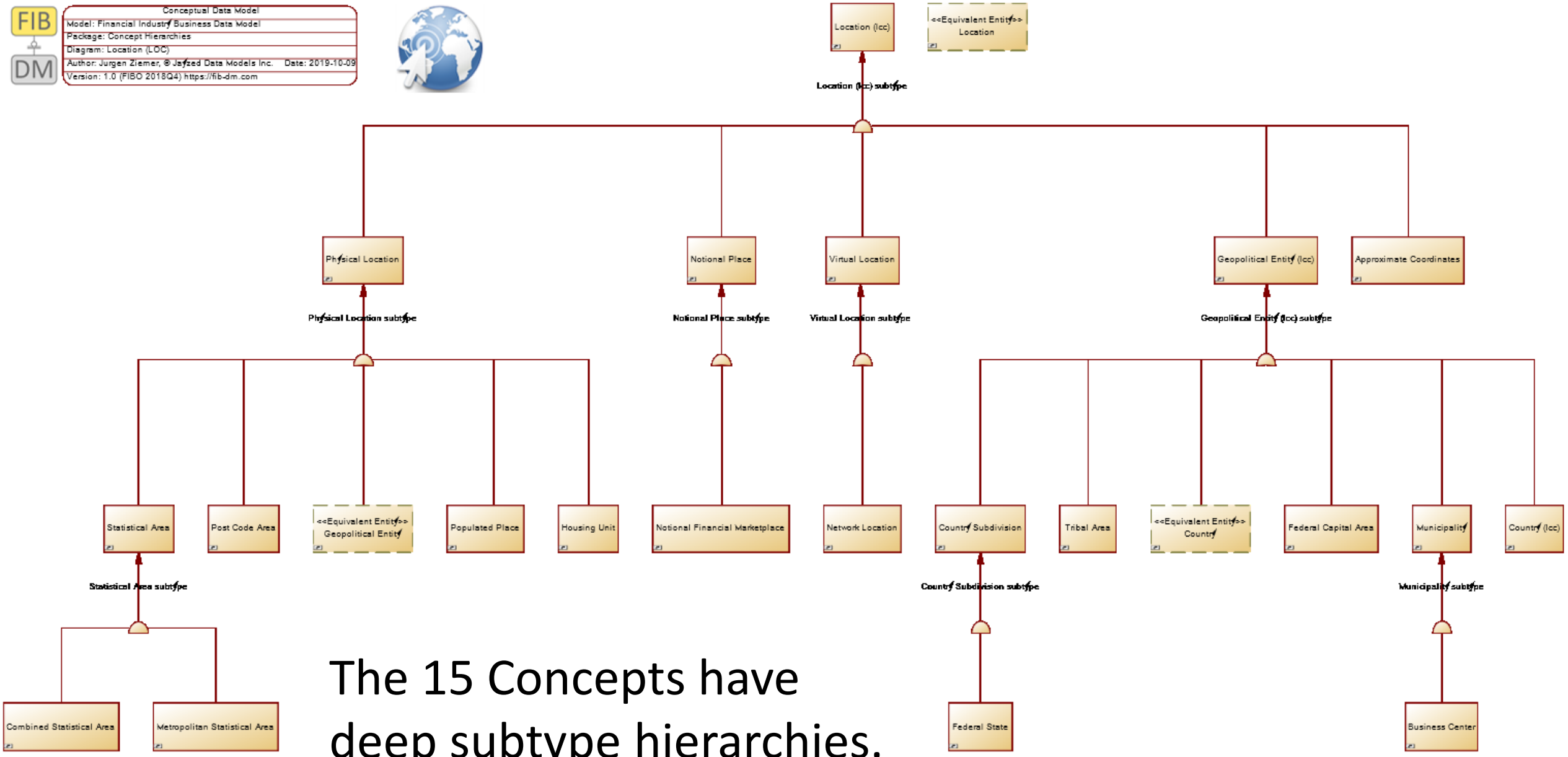
AC
Account

TI
Time

OCC
Occurrence

70% of FIB-DM entities are a subtype of the concept entity

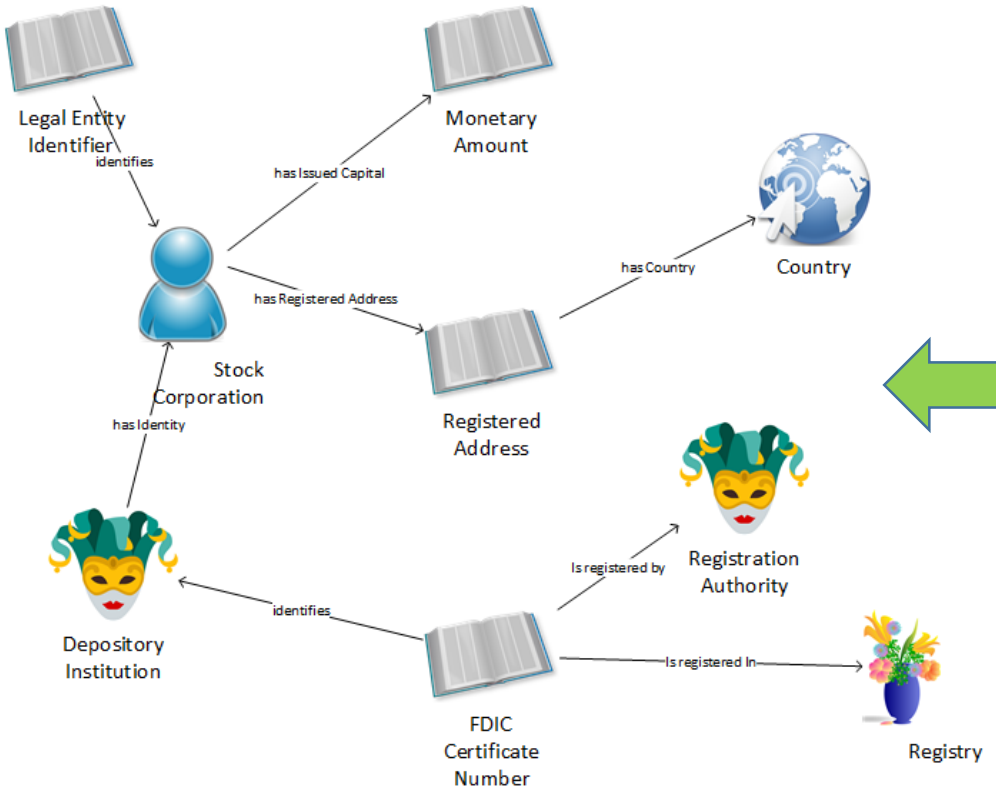
Finance user int

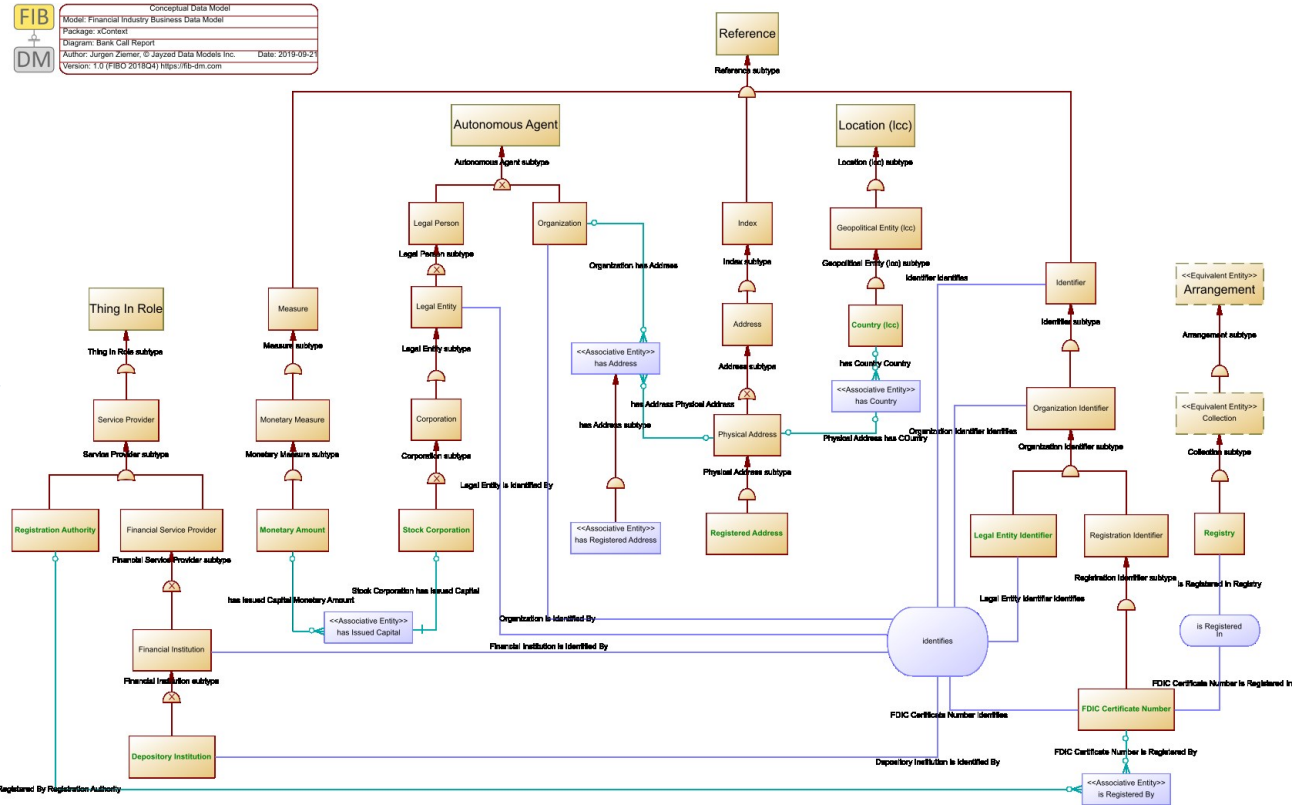


The 15 Concepts have deep subtype hierarchies.

Data Architect

The concept maps, FIB-CM, link to the data model.



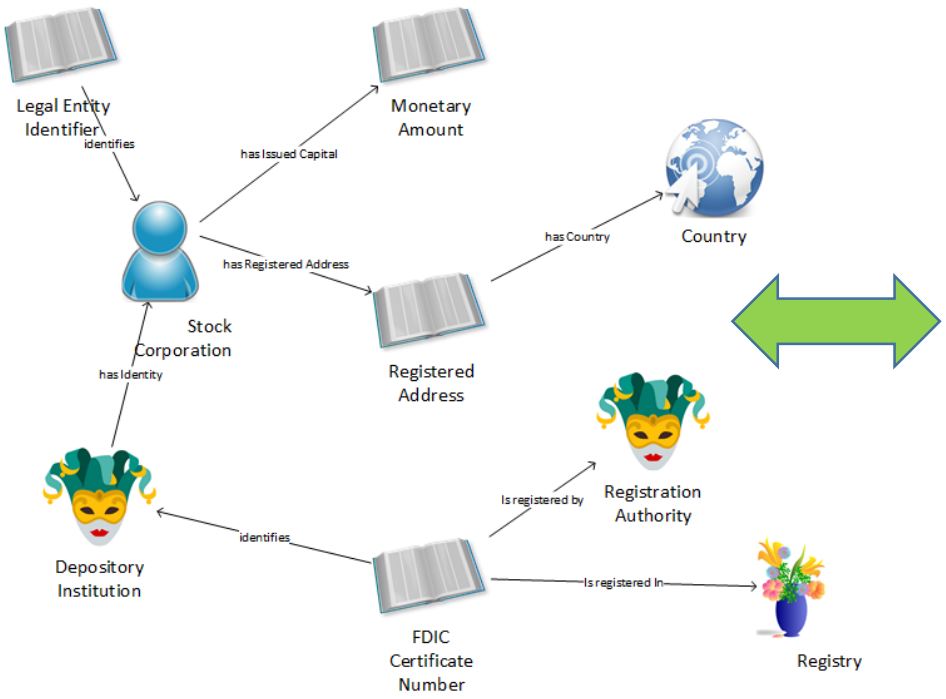


https://fib-dm.com/semantics-for-finance-users/

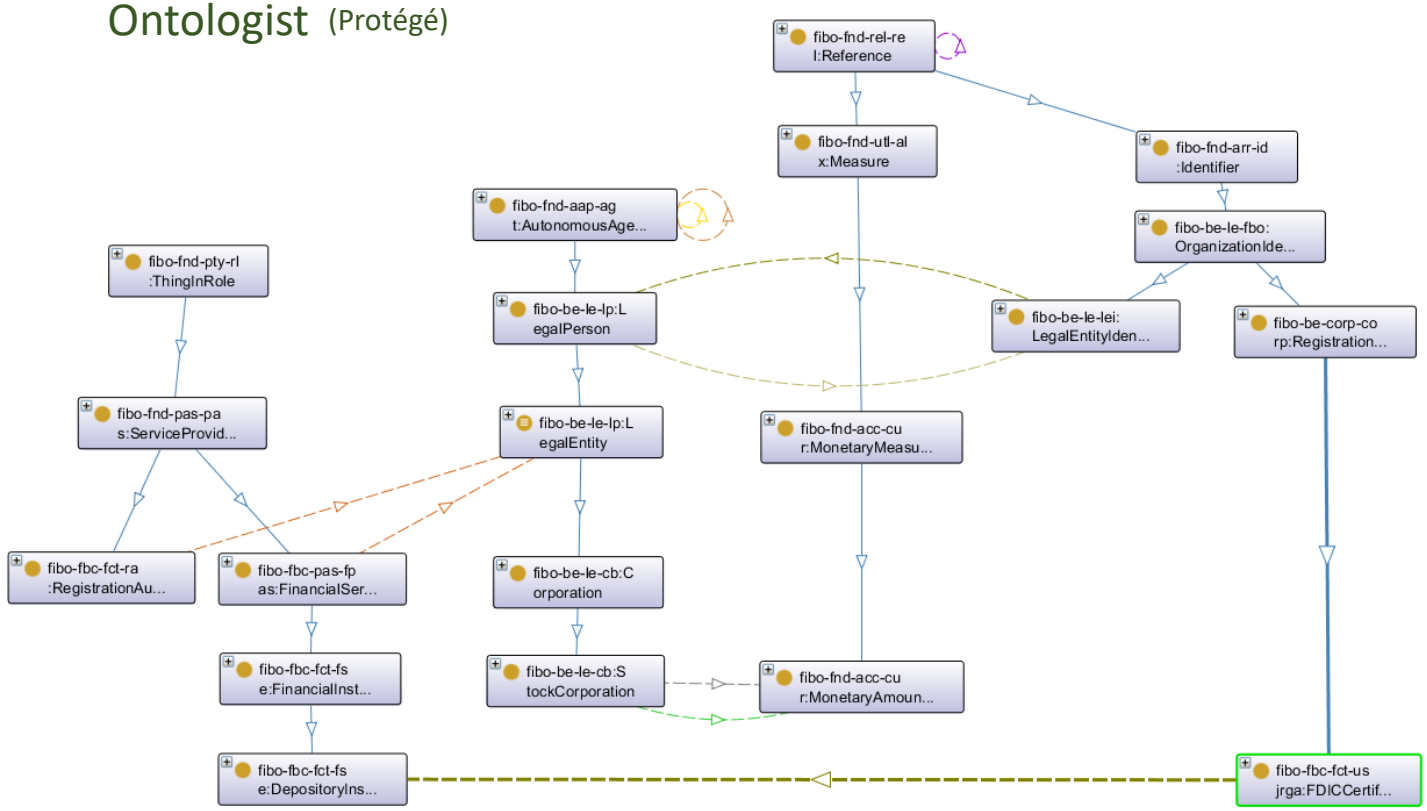
Data Architect

The concepts and vocabulary directly correspond to the ontology.

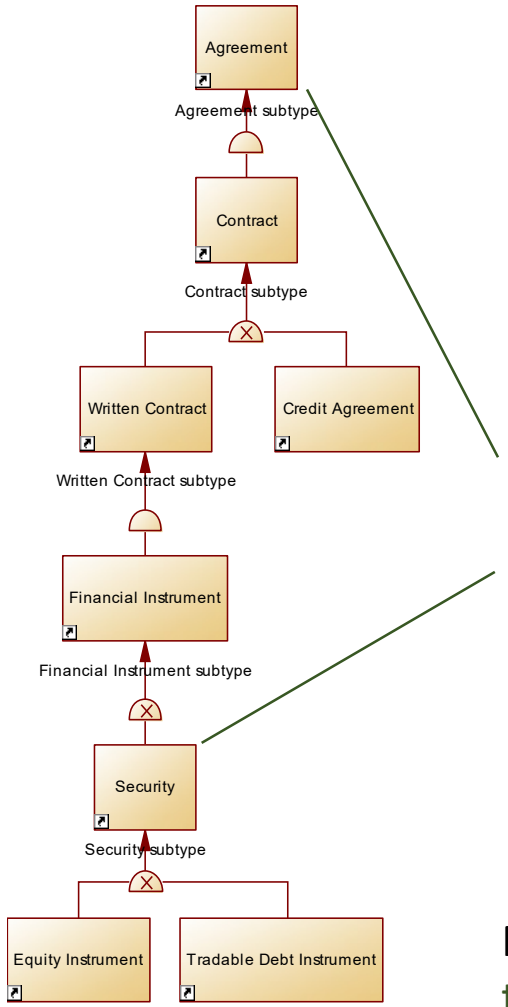
Finance, Business User (MS-Visio)



Ontologist (Protégé)



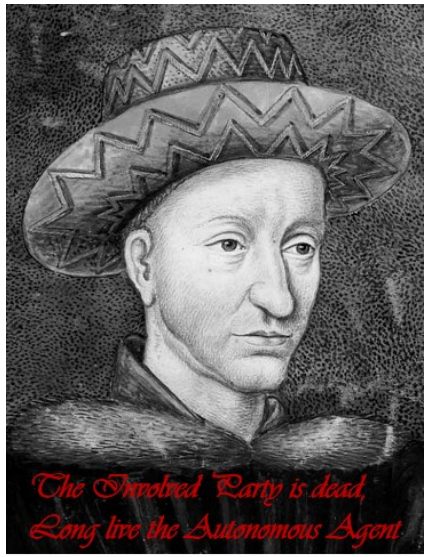
DAs, merge in your vendor and inhouse models



Your vendor model has excellent value. Keep it and harvest the content!

Adhere to the industry-standard 15 concepts and their subtype hierarchies
Adopt the FIBO/FIB-DM names and definitions

1. Identify indirect entity matches, synonyms
2. Identify direct entity matches, beware of homonyms
3. Merge entities that are not already in FIB-DM, identify the appropriate supertype.
4. Merge attributes from your vendor model.



Robert's advice

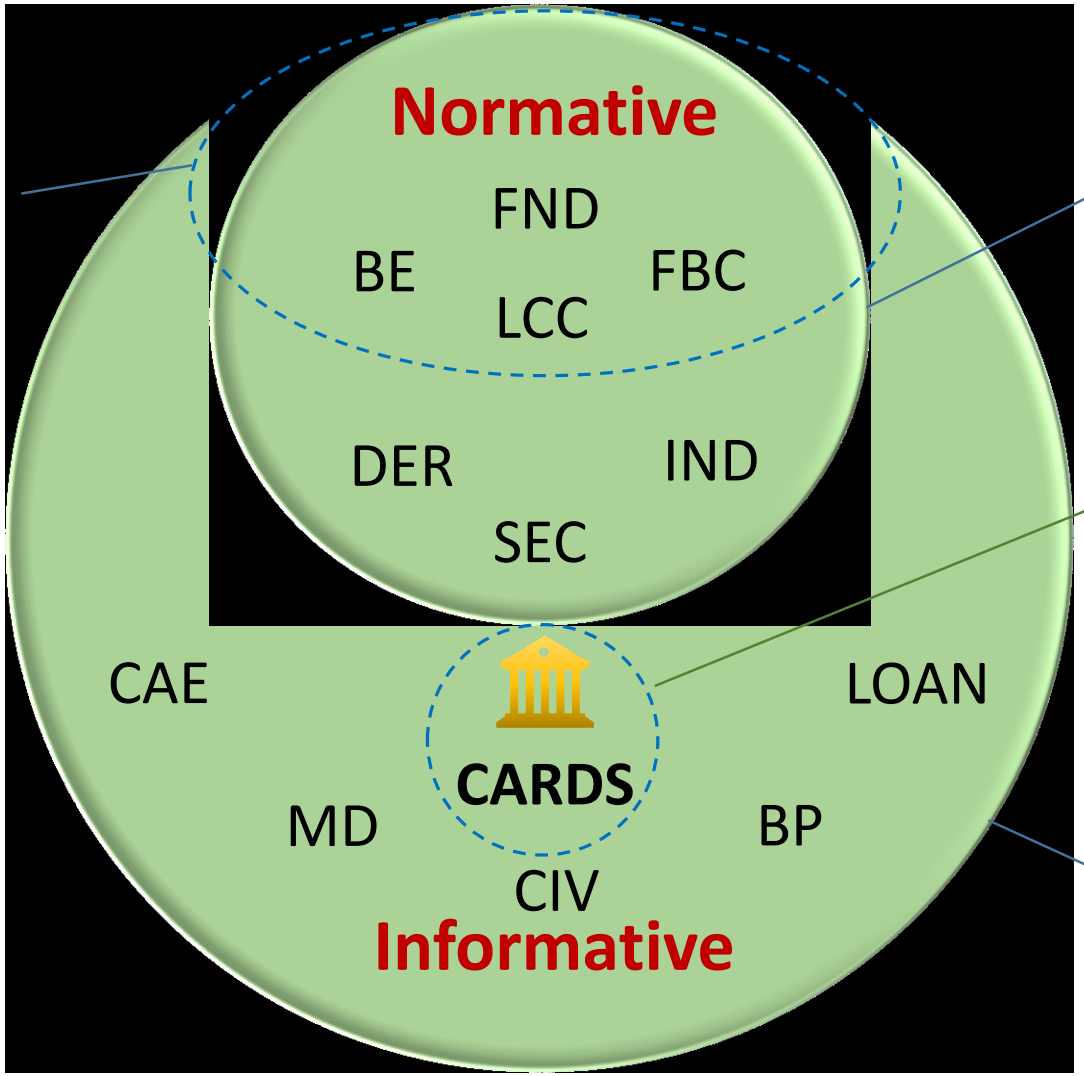
Note that the FIBO Data Model correctly defines Financial Instruments as a subtype of the Contract, an Agreement – not a Product as some Vendor model do.

Data Architect

Two models – Normative and Informative

Open Source core FIBO 2018/Q4

- New modules enter FIBO Development
- Informative modules become normative



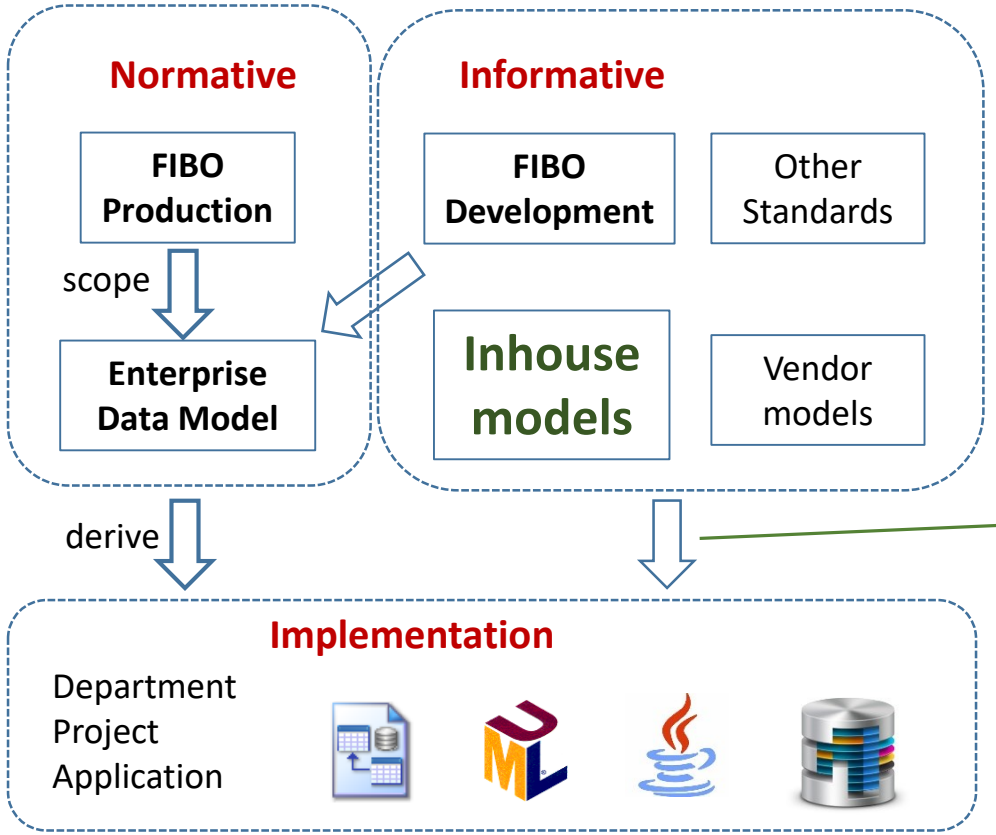
FIBO/FIB-DM 2020/Q2 Production

Your FIBO Extensions

FIBO/FIB-DM 2020/Q2 Development

FIBO, vendor, and in-house models for SEIA

We adhere to the industry-standard



We consult FIBO development

Our method is to derive

Our goal is leverage

FIB-DM + CODT is the strategic solution

We **generate** data models from industry/domain and our proprietary ontologies. Design conceptual models in RDF/OWL.

FIB**O**

Industry

In-house

ATLANTIC CODT

FIB-**D**M

Enterprise

Project

We **reverse-engineer** our data models to extend the enterprise and project ontologies.

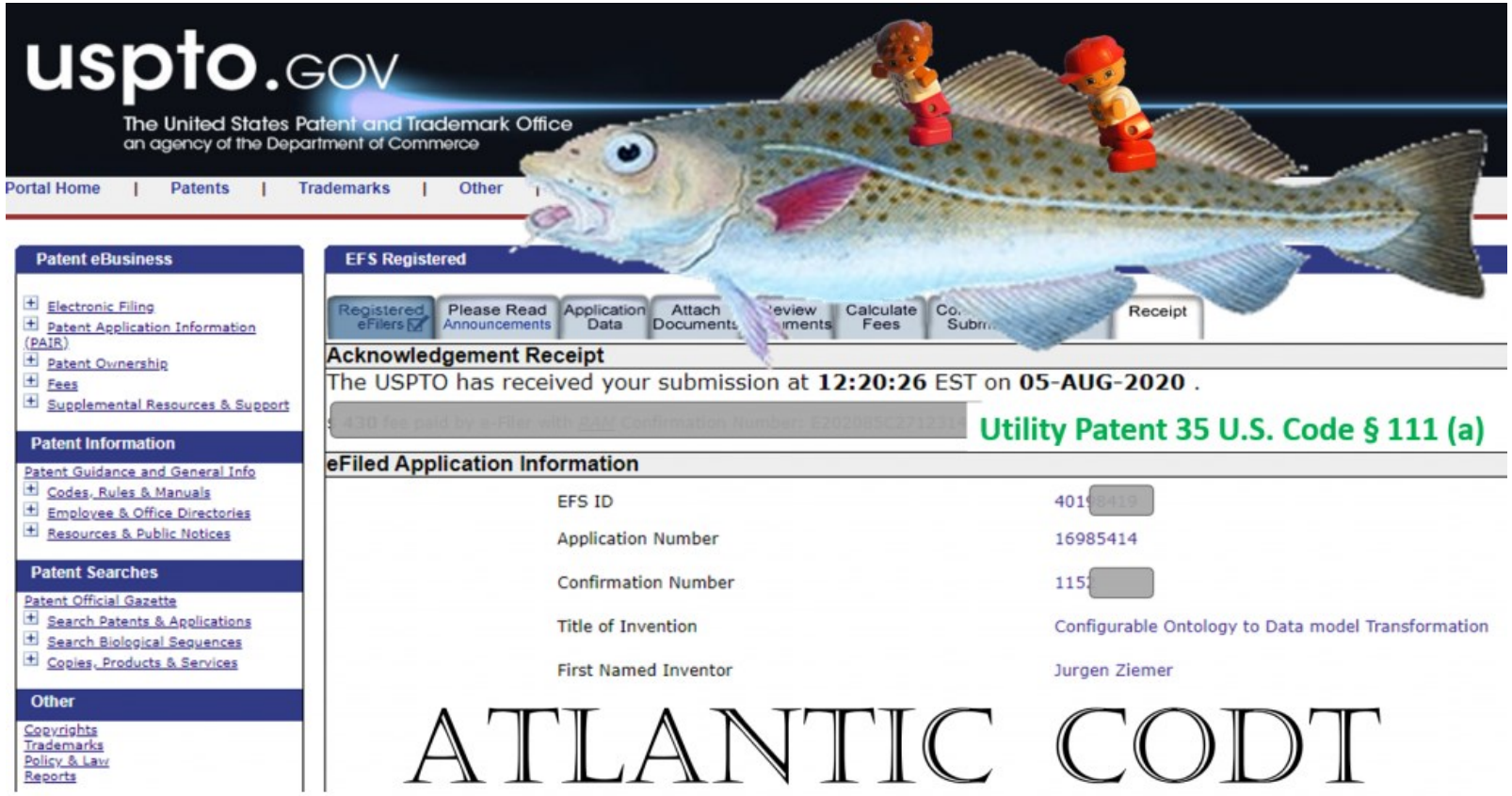
Finance key point

US Patent & Trademark Office acknowledgment

With 23 drawings, 19 tables, and 35 pages of specification, the non-provisional patent application fully discloses the invention.

Twenty claims comprehensively cover the method, system, non-transitory storage medium, and all embodiments.

Once granted, the patent protects CODT licensees and generated models, including FIB-DM.



https://fib-dm.com/patent/

Finance key point

FIB-DM General Public 3.0 vs. Customer License

Topic	Detail	Your current General Public License 3.0	Your upgrade Jayzed Customer License
FIBO Release		**2018/Q4**	**2020/Q2**
Domain		**Public**	**Private**
Distribution	Original FIB-DM	encouraged	prohibited
	Your FIB-DM derived works	**Open Source**	**Private, not applicable**
Number of Entities		**1029**	**1,968 (normative) 4,563 (informative)**
Normative	Foundation	✔	✔
	Business Entities	✔	✔
	Finance, Business & Commerce	✔	✔
	Securities	X	✔
	Derivatives	X	✔
	Indexes & Indicators	X	✔
Informative	LOANS	X	✔
	Funds	X	✔
	Corporate Actions	X	✔
	Market Data	X	✔
	Business Processes	X	✔
Resources	PowerPoints	X	✔
	Videos	X	✔
	Whitepapers	X	✔

Open Source license requires you to **copyleft**, that is, to license your derived models to the **public**.

With a commercial license, you keep FIB-DM extensions **private**.

Likewise, for the public, **all Education materials are subject to copyright**

With a commercial license, you are **free to modify, translate, edit, and even lift off images and diagrams** as long as they remain within your organization.

Finance key point

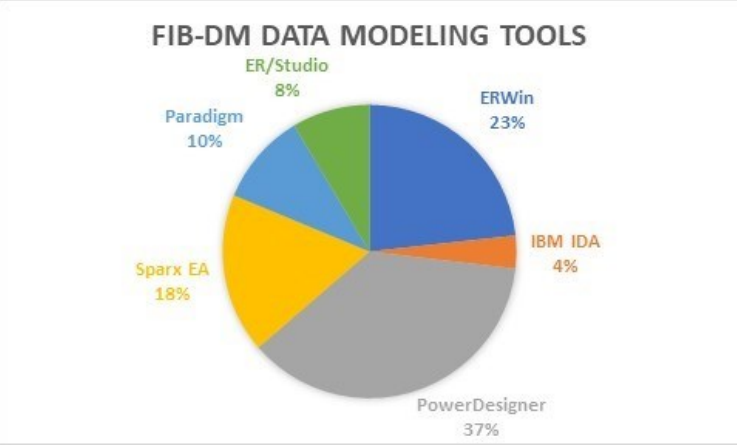
DAMA, Consultants, vendors - publish Open Source!

Showcase your expertise!

FIBO Financial Industry Business Ontology *in* SAP POWERDESIGNER erwin ENTERPRISE ARCHITECT

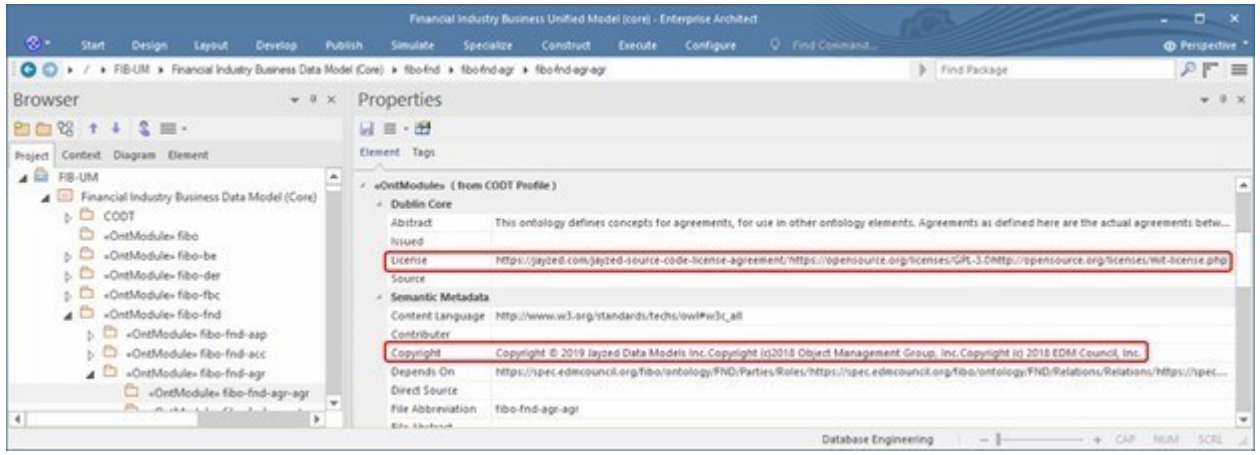
Publish a migration tutorial.

Share your extension and diagrams with hundreds of users.



Publish your ERWin, Sparx EA, Paradigm, or E/R Studio FIBO Data Model!

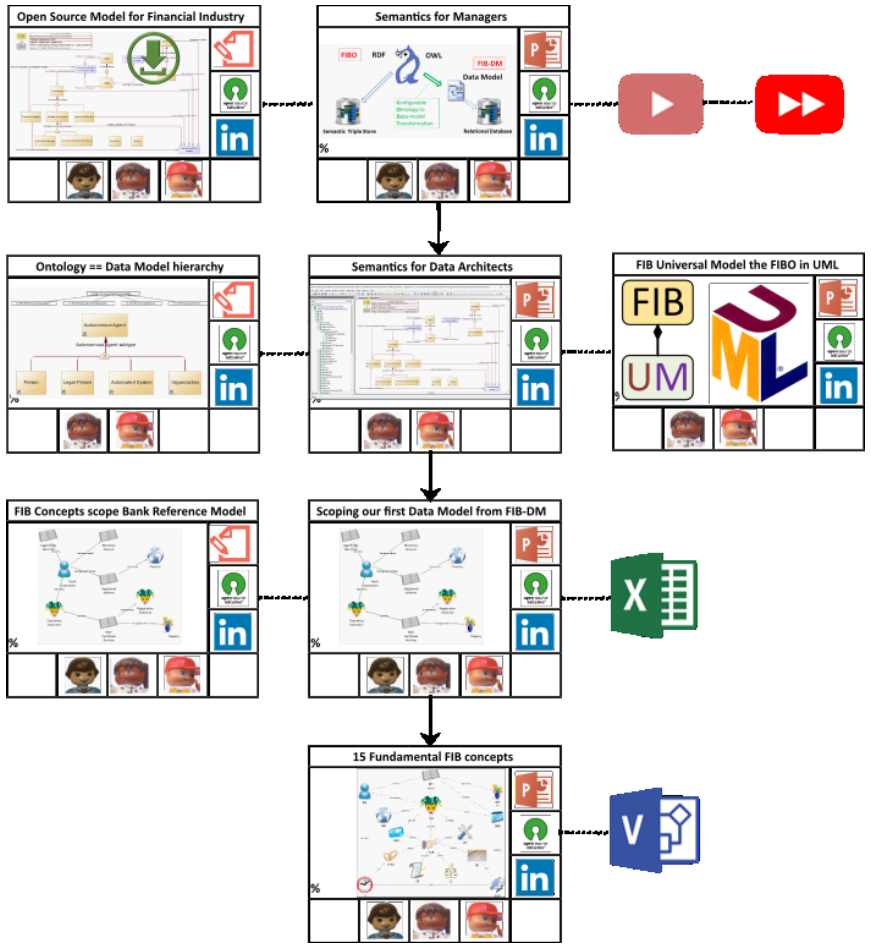
Under the General Public License, all FIB-DM Core-derived works are Open Source already – you don't have to ask for my permission to share them. Just make sure to **retain** (**or add**, if lost in the import) the Jayzed, EDMC, and OMG **copyright and license properties** on all packages (subject areas).



Finance key point

Resources for further reading and watching

Education path, visual guide to FIB-DM



The FIB-DM website: https://fib-dm.com

- PowerPoints for viewing and download
- Deep-dive articles
- Scalable SVG diagrams of packages and the complete subtype hierarchies.

Follow the FIB-DM LinkedIn page for news, updates, and to read and share comments.
https://www.linkedin.com/showcase/fib-dm/

Watch FIB-DM Education videos on YouTube.
https://www.youtube.com/c/fibdm

Ask your questions or schedule a meeting.
jziemer@jayzed.com

Thank you!

Finance key point