Semantics for Managers

Financial Industry Business Data Model (FIB-DM)

An introduction to the ontology-derived Enterprise Data Model for Finance and Business stakeholders.

Jurgen Ziemer Ontologist & Data Architect at Jayzed Data Models Inc.

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

The Enterprise Data Management Council (EDMC) is the Global Association of over 200 Financial Institutions (FI).

- Data Management best practices
- Development and implementation of Data Standards.

EDMC members developed the Financial Industry Business Ontology (FIBO), a business conceptual model.
More than 1600 classes detail financial instruments, business entities and processes.

Finance key point

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

Finance business stakeholder and expert with a working knowledge of Entity-Relationship and Ontology diagrams.

Data or **Application Architect** experienced in Enterprise Reference models. You may have used FIBO design patterns and definitions.

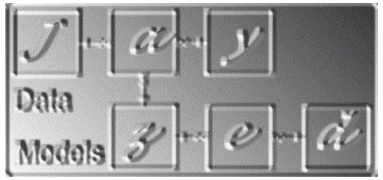
As an **Ontologist** with an in-depth understanding of the FIBO, you already use the reference ontology for your design and want to spread adaptation across your enterprise.

Finance key point

Introduction to author and publisher

Jurgen Ziemer has 20 years 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 implementing BFMDW at Citi and Deutsche Bank.
- Speaker at FIBO conferences



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

Jayzed holds the copyright to the Financial Regulation Ontologies offered under Semantic Compliance®; a USPTO registered Trademark.

Jayzed Data Models

Accenture

IBM

Credit Suisse

Deutsche Bank

Citi

Reuters

German Stock Exchange

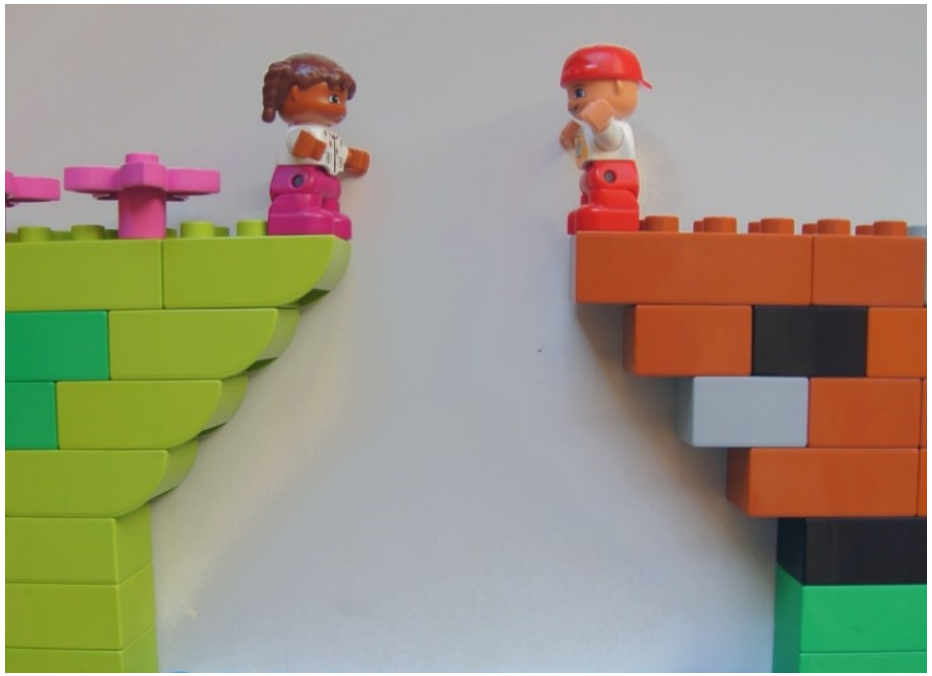
Finance key point

There is a chasm between semantic and conventional data management.

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

FIBO is comprehensive with detailed coverage of business entities, loans, securities, derivatives, and indicators.

Large financial institutions started implementations on RDF (“triple”) stores



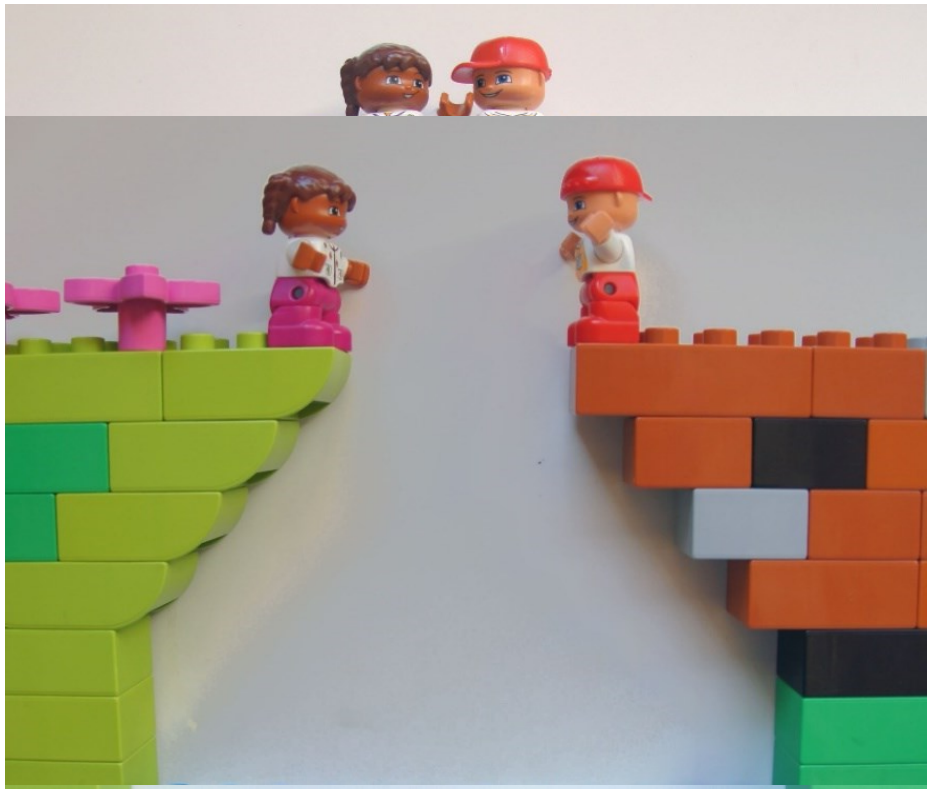
OWL needs highly specialized ontologists.

Many banks and investment managers don’t have the expertise inhouse.

IT-departments must still support and design conventional databases.

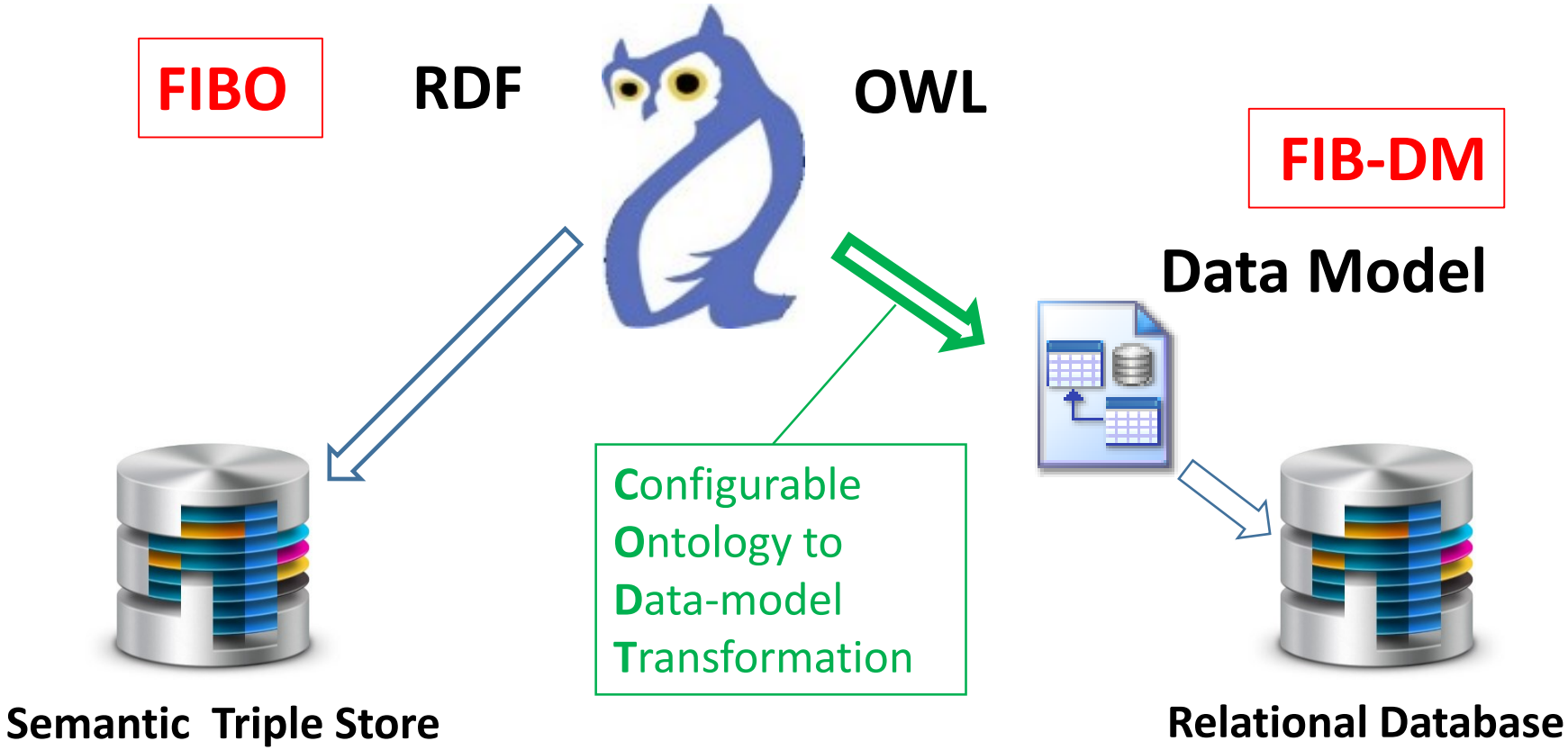
Finance key point

FIB-DM is the bridge across the chasm.



Finance key point

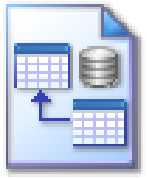
The ontology transformed into a data model leverages the design for relational databases.



Finance key point

Predictions

- RDF-stores soon dominate data systems for knowledge management.
- RDBMS remain the dominant database for traditional transactional and business intelligence systems.



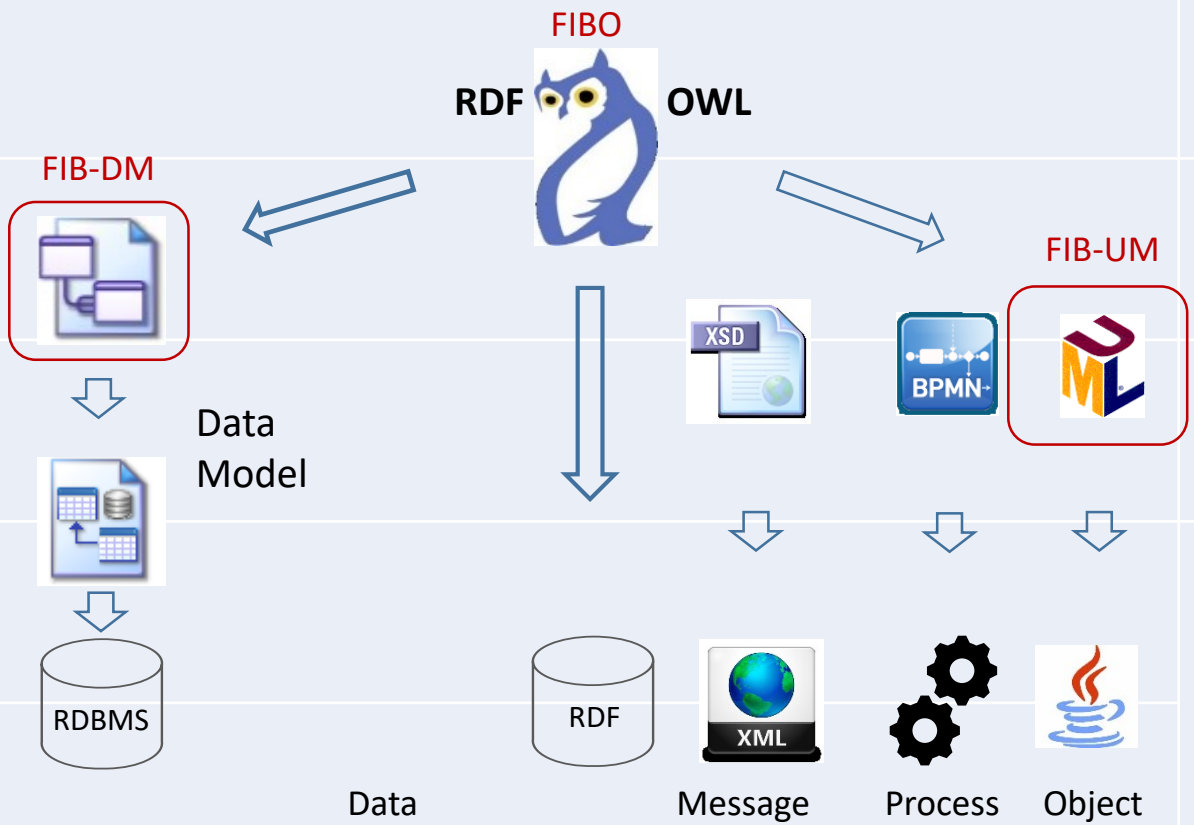
- Hence, Financial Institutions still need relational models and data modelers.

- However, Ontology Web Language replace the Entity-Relationship Model (ERM) as the notation of choice for Industry Domain and Enterprise Models.

Finance key point

Semantic Enterprise Information Architecture

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



Finance key point

Semantic Model-Driven Development

Conceptual

- FIBO is the domain ontology; FIB-DM is the conceptual data model.
- A conceptual business model for the Financial Industry and applied at the enterprise level.

Logical

- Logical models for data, message, process, and object derive from the ontology

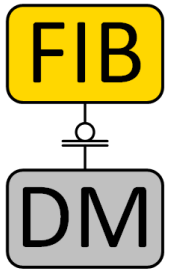
Physical

- The ontology at the architecture apex ensures common names, definitions and design across the enterprise.

- Midsize Financial Institution without Semantic Technologies yet, adopt FIB-DM, a strategic enterprise model.
- Large institutions use CODT to transform their inhouse ontologies into data models for downstream implementation.

Finance key point

Financial Industry Business Data Model



= FIBO Financial Industry Business Ontology *in* SAP POWERDESIGNER

(and other data modeling tools)

- Financial Industry Business Data Model of 1875 Entities, complete definitions, annotations, and axioms (business rules).
- Data Architects leverage the full content of the Industry Standard.
- **Common Language and design patterns for Semantic & Relational data.**

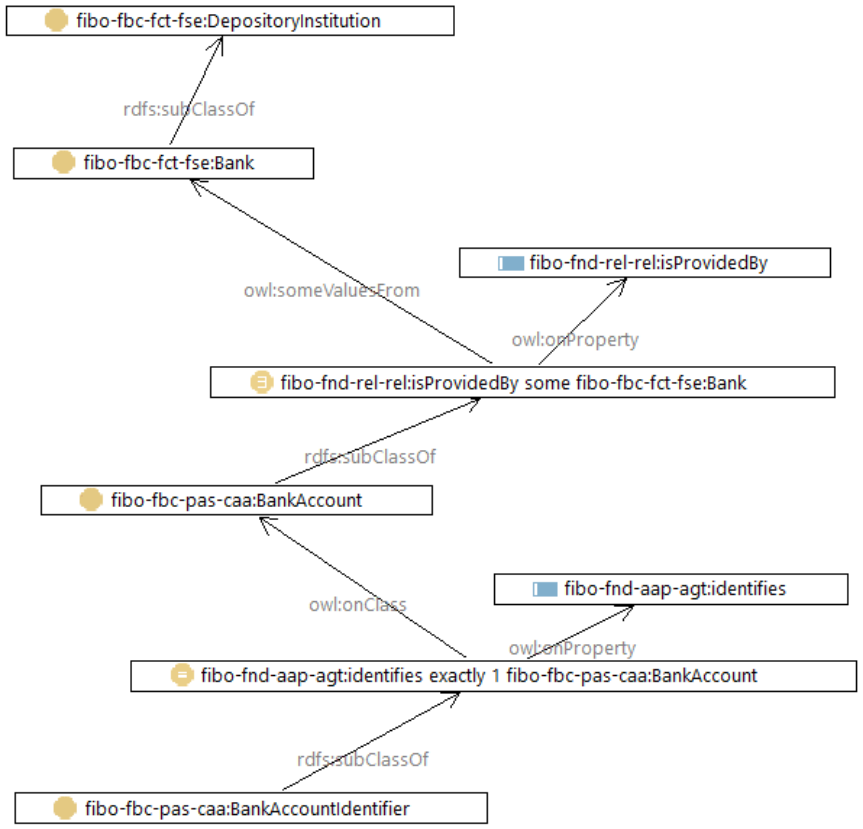
Finance key point

Transformation principles & considerations for the derived data model

1. The model must be **practical**.
   Overly normalized designs become too abstract for business users and developers.
2. The model must be **complete**.
   We don’t want to miss information from the ontology
3. The model has complete **documentation**. The **diagrams** depict all subject areas and design patterns.
4. The model **maps** back to its source, the ontology

Domain ontology generates a perfect CDM

Ontology graph



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

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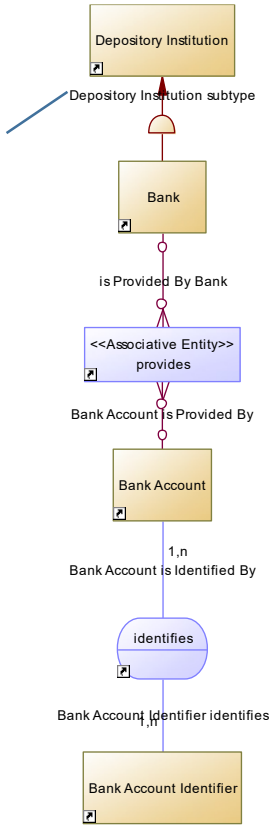
There are no missing and no superfluous entities and relationships in the design.

Conceptual Data Model



Finance key point

From FIBO to FIB-DM - how does it work?

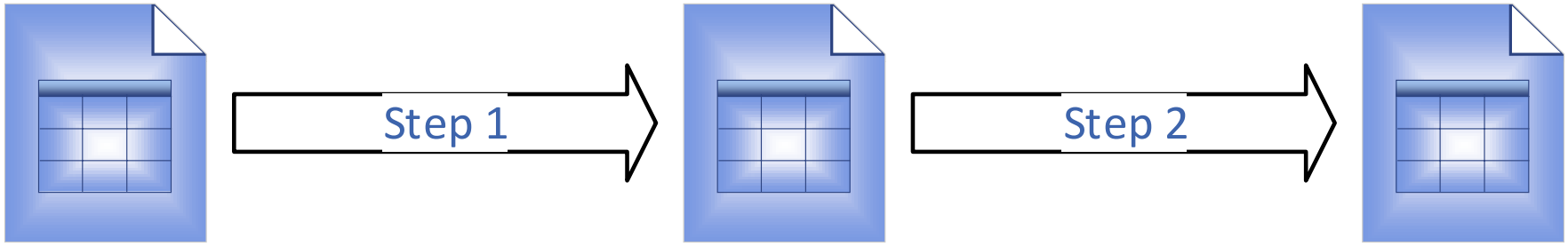
The Configurable Ontology to Data-Model Transformation (CODT) is basic ETL.

We extract metadata from the source ontology, transform ontology metadata into conceptual data model metadata, and load into the data modeling tool, PowerDesigner.

The extract process runs SPARQL on the ontology to get the metadata. PowerDesigner imports MS-Excel workbooks. The Transformation in between is a 2-step process using the patent-pending *Metadata Sets*.

The CODT Metadata Sets.

The Extract process populates the Ontology Metadata Sets for classes, object-, data properties, and annotations.



Ontology Metadata Set

Generic Entity Relationship Metadata Set

Tool-specific Metadata Set

Step one transforms the ontology metadata and populates the generic ER representation. The Tool-specific metadata set is in PowerDesigner format. We serialize as MS-Excel and directly load it into the tool. Step two is a simple conversion from generic ER to PowerDesigner objects, properties, and extended attributes.


Data Architect

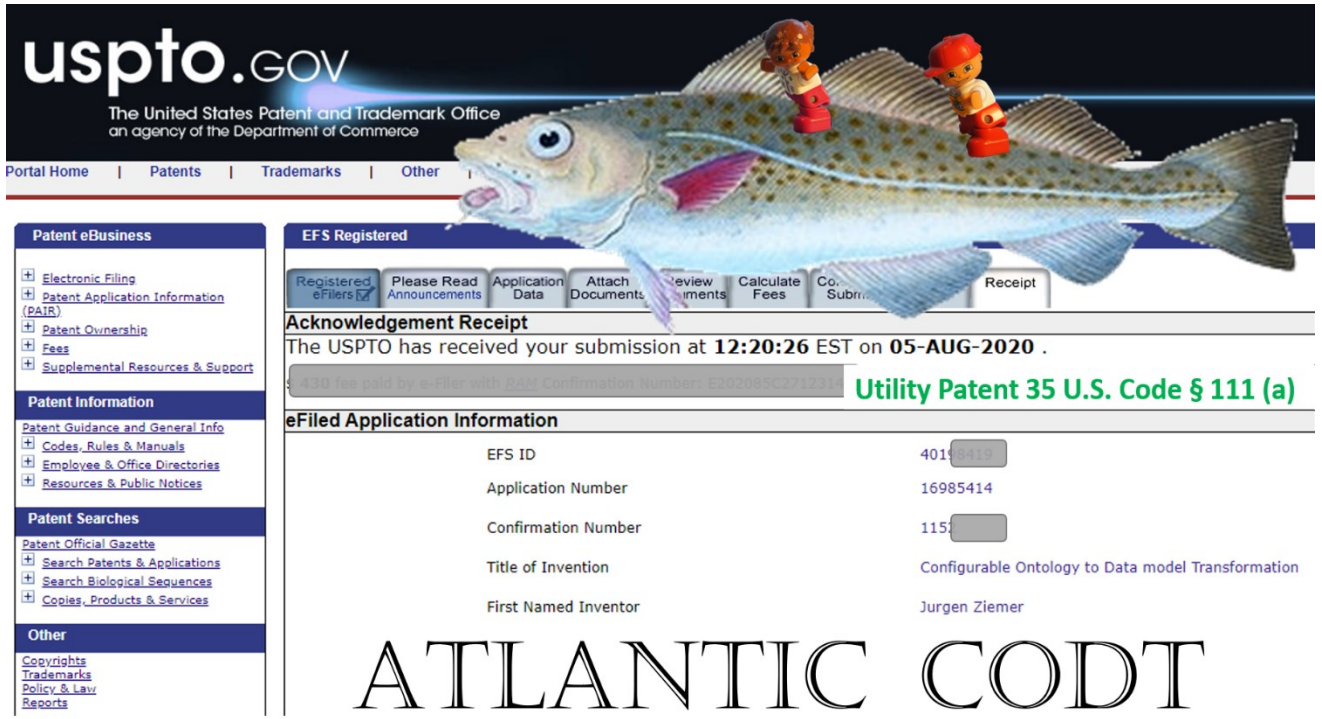
Ontologist

CODT Utility Patent Application

- Protects FIB-DM users
- Ensures updates of FIB-DM.
- Makes the transformation process available
- Transforms other domain ontologies (gene, oil, auto)

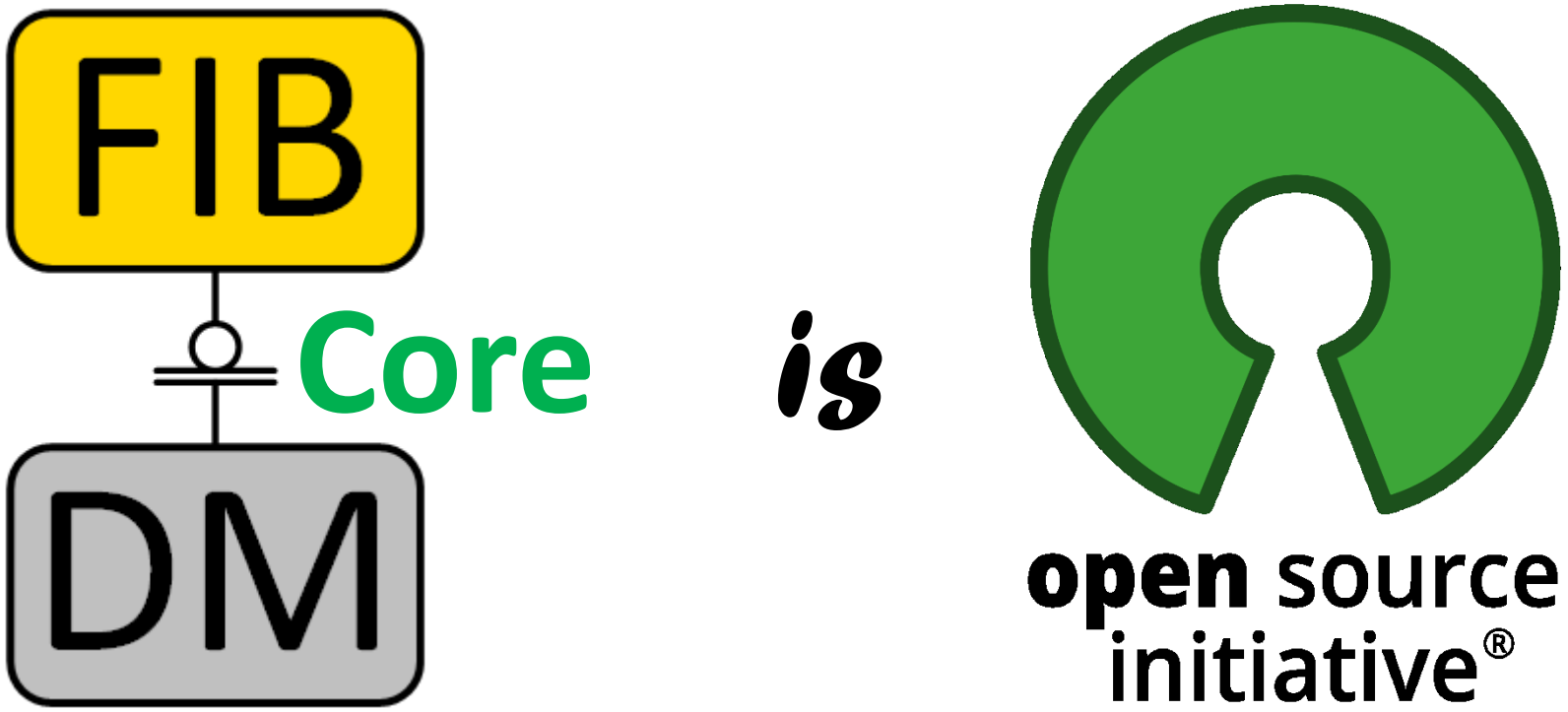
- 23 figures
- 35 pages of specification
- 20 claims
- method, system, and storage medium
- all possible embodiments.

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



Finance key point

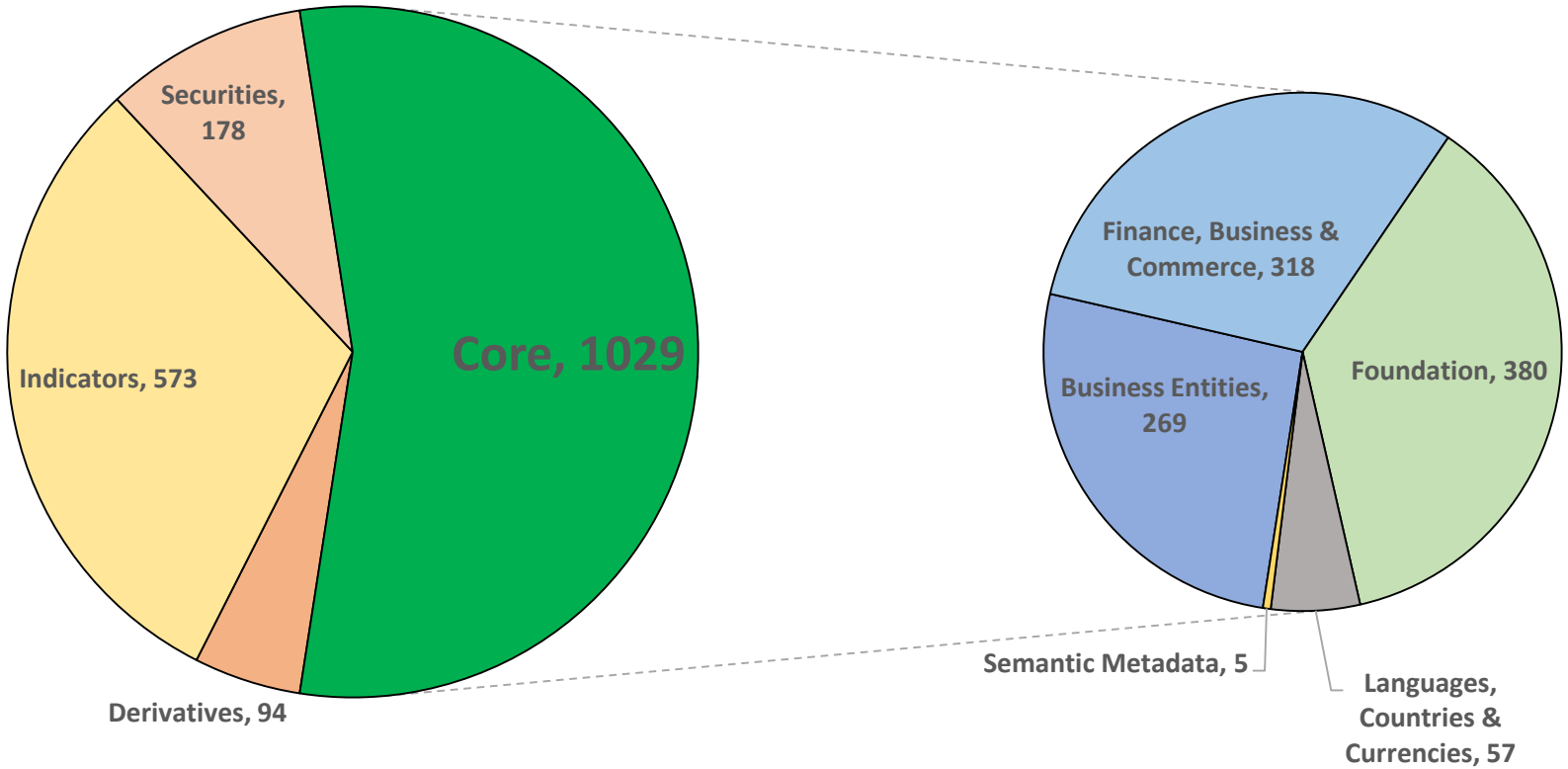
FIB-DM Core is Open Source



GNU General Public License (GPL-3.0), an Open Source Initiative® recommended license.
Available for download on the FIB-DM website: https://fib-dm.com/data-model-download/

Finance key point

A one thousand entity open-source model



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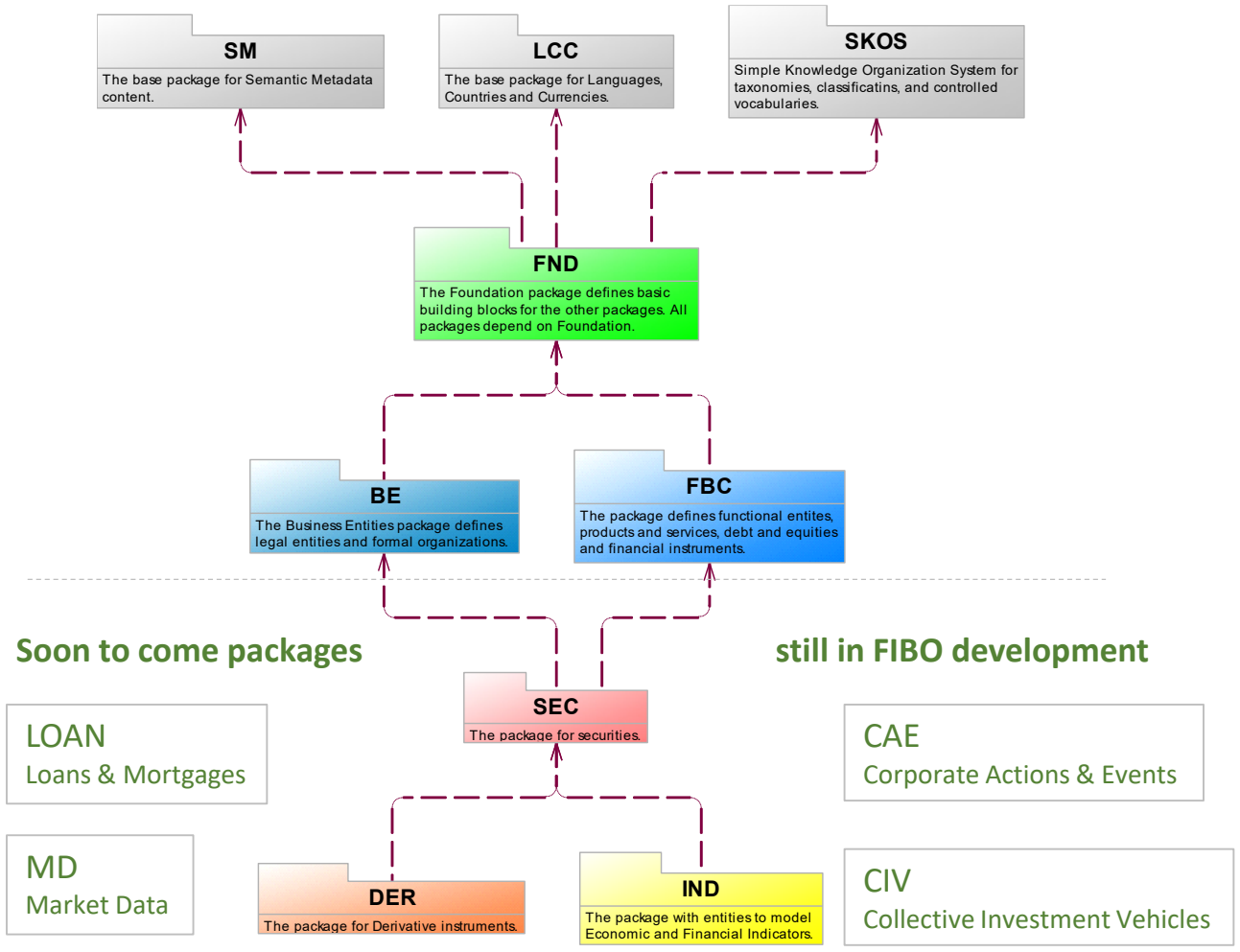
A self-contained standalone data model.

Generic

Domain Core

Extensions



Free Open Source

Commercial License

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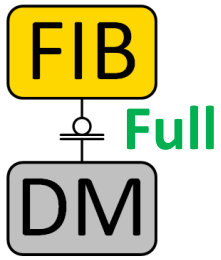
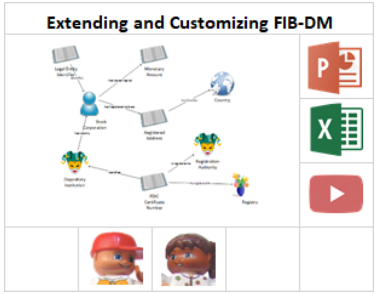
FIB-DM Extended for Financial Institutions



The complete 1875-entity data model, plus updates as new FIBO modules for banking and investment become available.

Your purchase and software license agreement upon request.



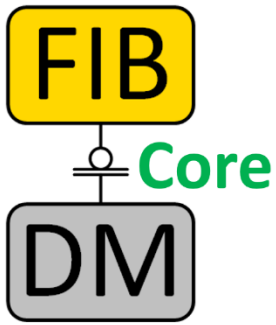
Access to data diagrams, PowerPoint, Excel, and Visio resources
Permission to lift off and rebrand for internal use.

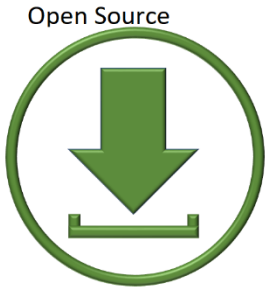
Optional 12- month Maintenance agreement with training, model, and resource updates.

Tiered pricing based on asset size - discounts for early adopters – special offers for regulators, governments

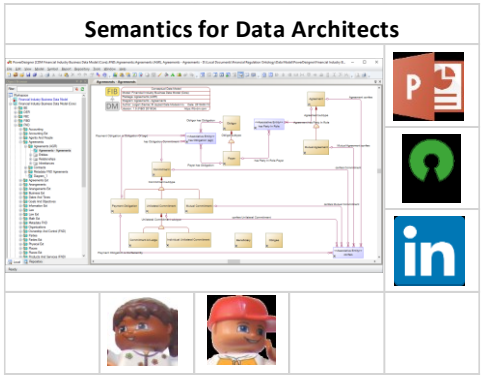
Finance key point

Transparency for your FIB-DM evaluation



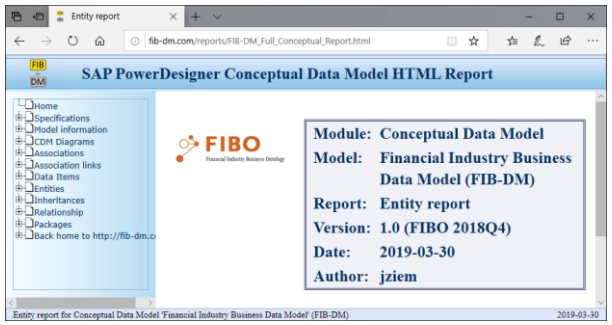


[Download](#) the Open Source



[Review](#) Education resources

[Schedule](#) an online demo and Q&A

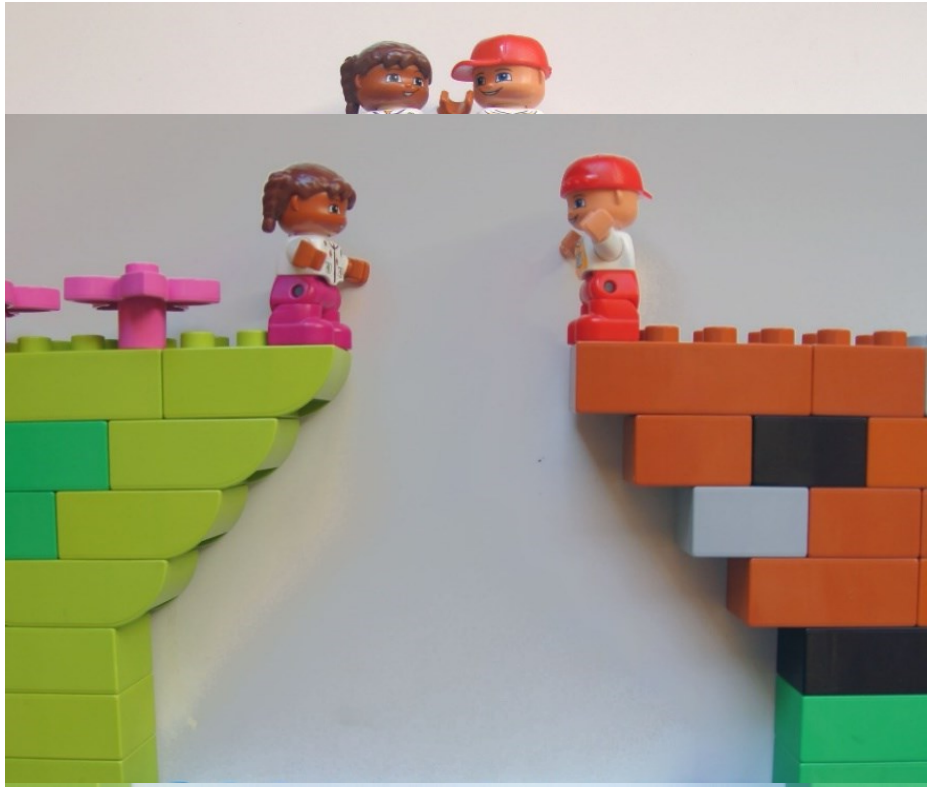


[Examine](#) the Full Model content

Finance key point

Chasm between semantic and conventional data management.

FIB-DM is the bridge across the chasm.



Finance key point

FIB DM Core

open source initiative®

FIBO
Financial Industry Business Ontology

in

SAP POWERDESIGNER

(and other data modeling tools)

https://fib-dm.cm jziemer@jayzed.com