Metadata for FIBO

OOR Working Session

6 March 2012

Overview

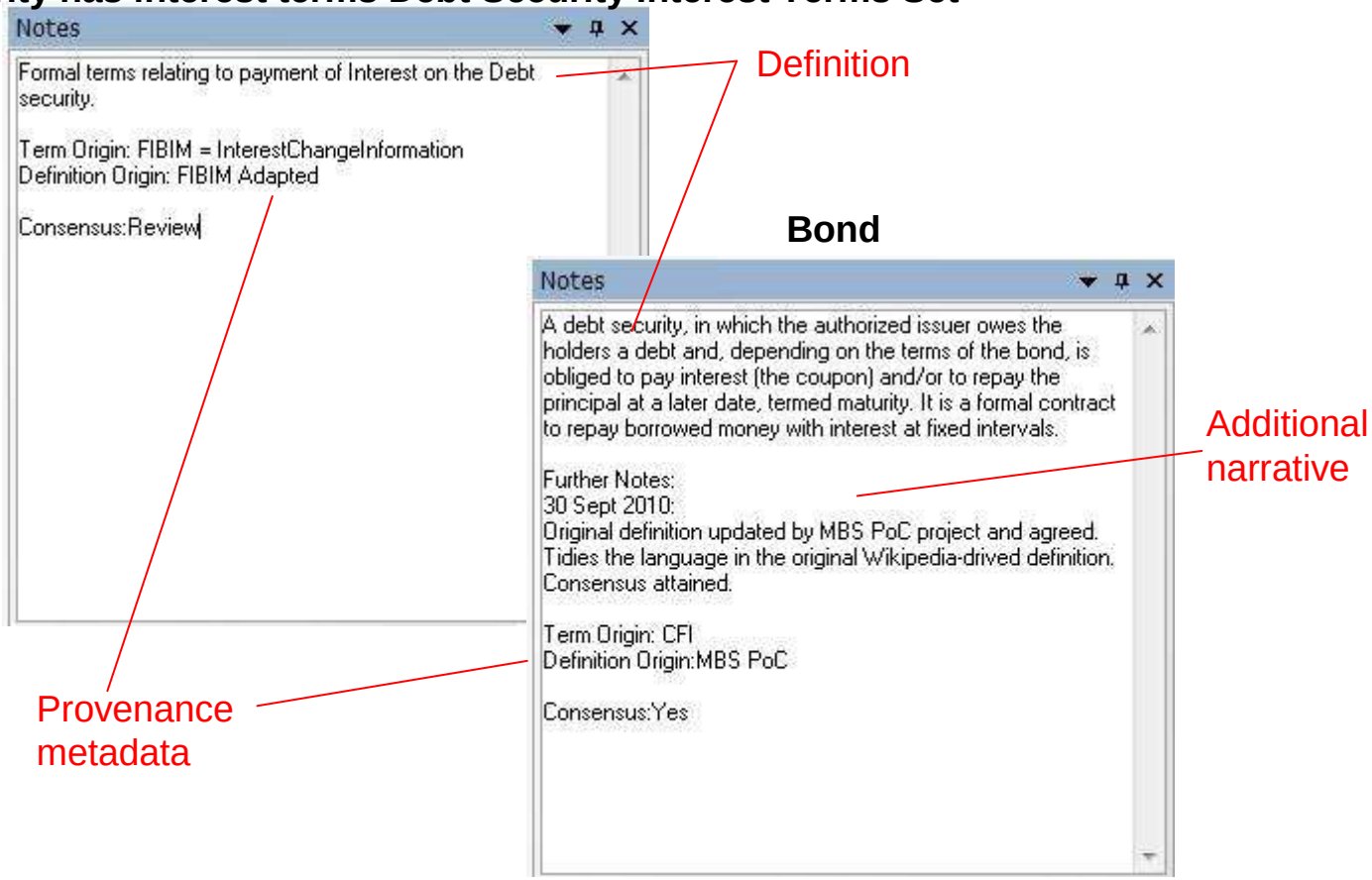
- FIBO Metadata Requirements
- Ambition: Implement as OWL Annotation Properties
- OMG Metadata proposals
- Rendering DC, SKOS
- Extending for Provenance
- Other Metadata
- What next…

FIBO Metadata

- What we have in FIBO already
  - To be converted into OWL Annotation Property based metadata for non lossy OWL
- What we know we would like
- Future Metadata

What's in FIBO

Debt Security has interest terms Debt Security Interest Terms Set



These are currently maintained as informal text in the UML "Notes" field

FIBO Metadata Requirements

- In model now
  - Provenance (of semantics)
  - Archetypes
  - Synonyms
- Needed
  - Classification facets
  - Semantic grounding in Global Terms (citation)

OMG Metadata Proposals

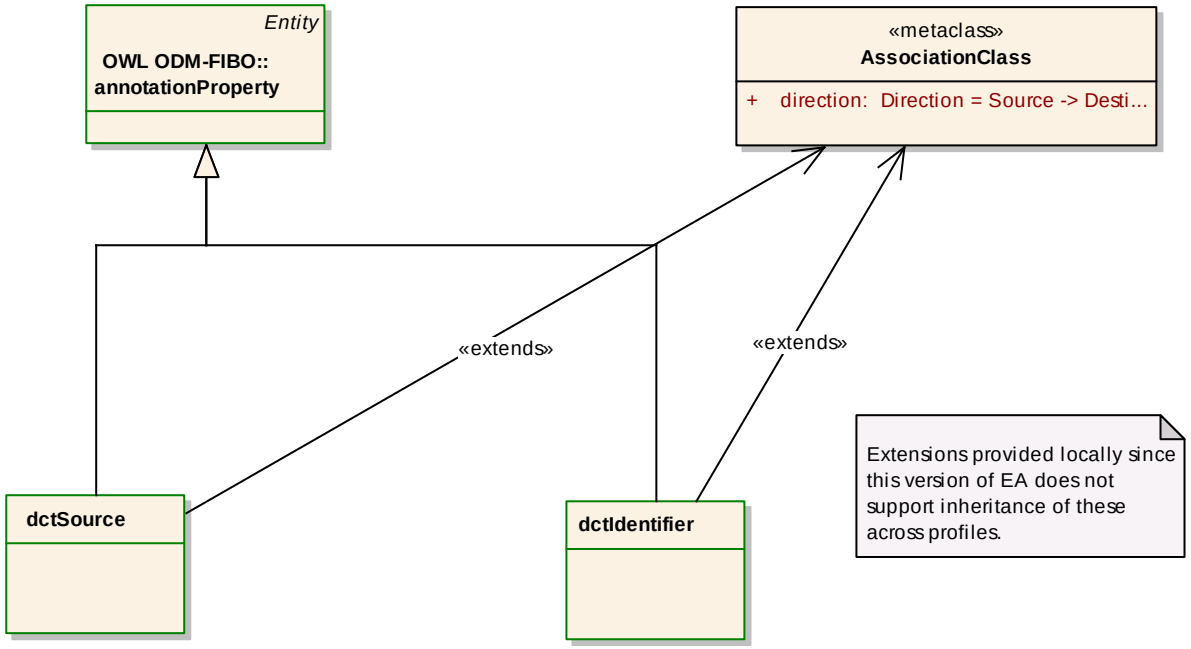
Explanatory Notes	termOrigin	original source / reason for including a particular entity in the model		N	Y		This element comes from the EDM Council FIBO effort, and may be needed for vocabularies that blend terms from multiple sources (for example, SysML QUDV vs. NASA/TQ QUDT in a potentially forthcoming vocabulary for quantities and units)	skos:note
	definitionOrigin	origin for the definition of the entity		N	Y		a note about the source text from which the definition was derived; this could be used in conjunction with the source property, which would point to the actual source document; again this comes from the EDM Council FIBO effort	skos:note
	changeNote	documents finer-grained changes to a particular entity for a particular version of the content model		N	Y			skos:changeNote
	historicalNote	describes significant changes to the meaning or form of an entity, from a historical perspective		N	Y			skos:historyNote
	scopeNote	supplies some, possibly partial, information about the intended meaning of an entity, especially with regards to limiting its scope/usage in practice		N	Y			skos:scopeNote
	usageNote	supplies some guidance about the usage of a particular entity within some context		N	Y			skos:note

This is just an extract showing some of the FIBO elements

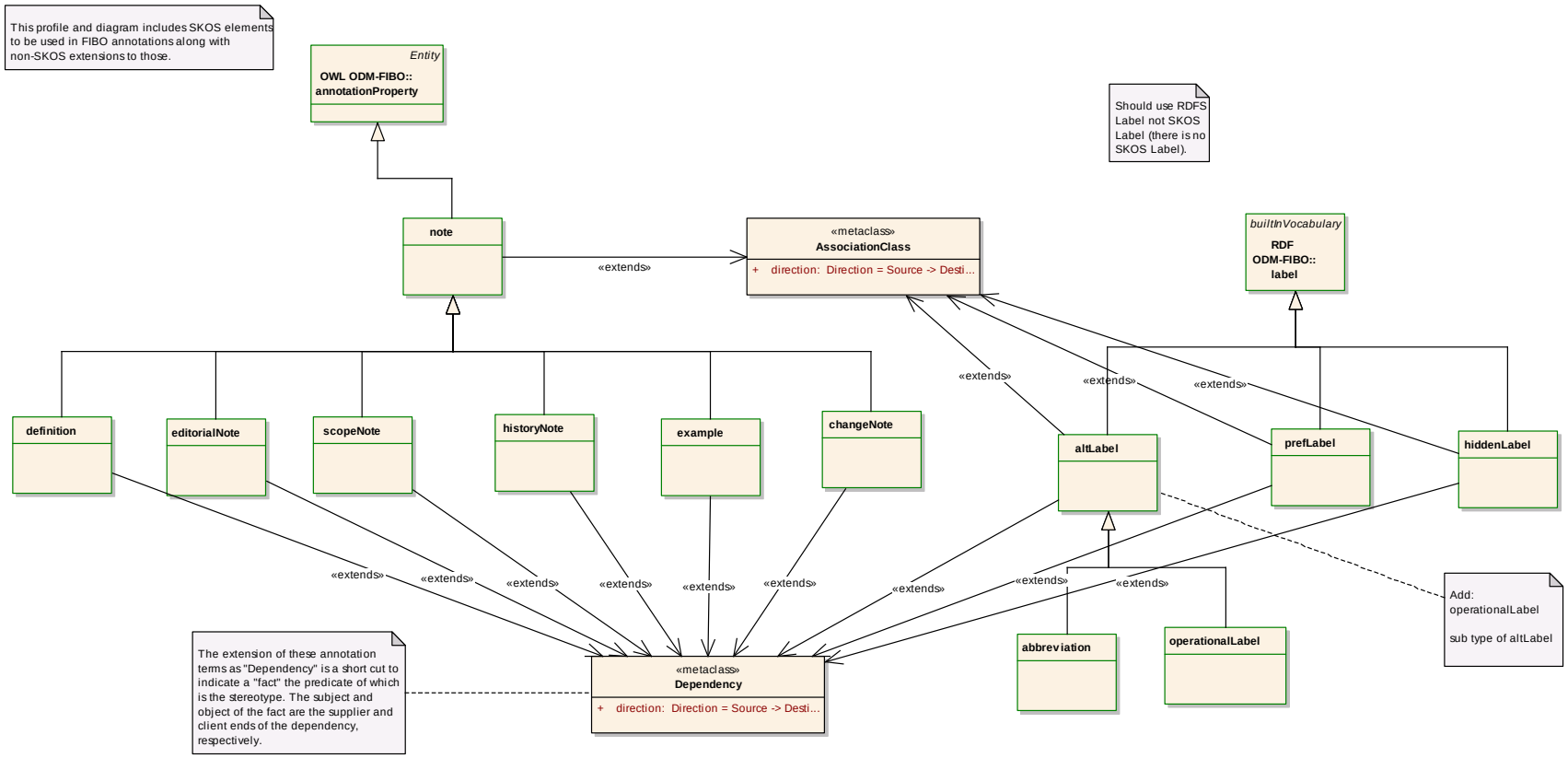
DC and SKOS Implementation

- The idea: Define DC and SKOS terms which we need
- Render these as OWL Annotation Properties
- Extend for FIBO-specific metadata
  - E.g. Term Origin, Definition Origin

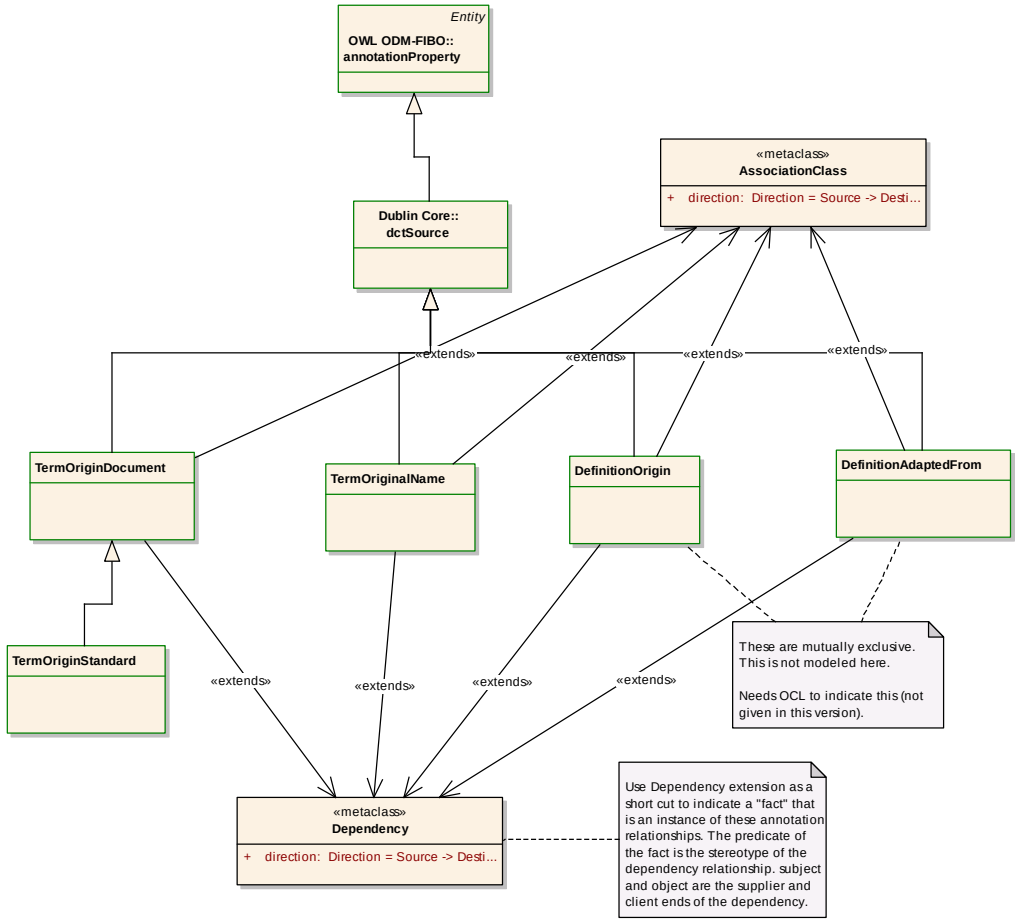
DC Profile


Entity
OWL ODM-FIBO::
annotationProperty
«metaclass»
AssociationClass
+ direction: Direction = Source -> Desti...
«extends»
«extends»
dctSource
dctIdentifier
Extensions provided locally since this version of EA does not support inheritance of these across profiles.

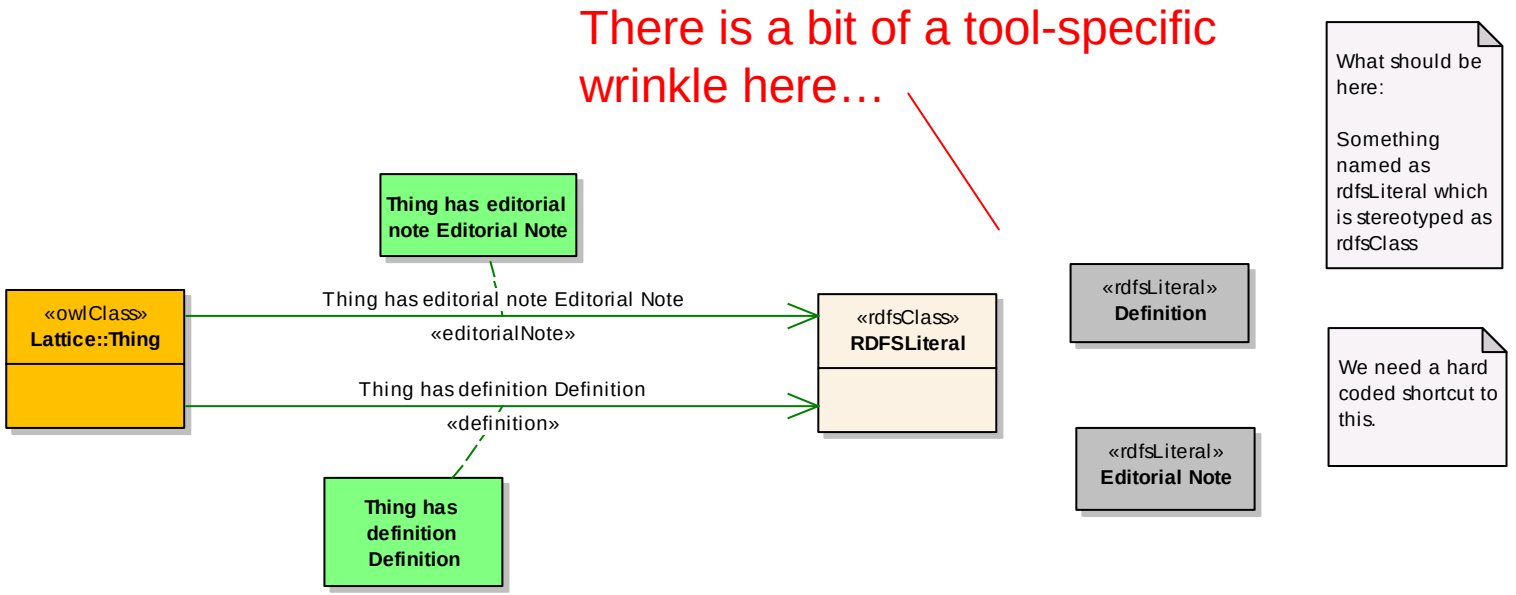
SKOS Profile



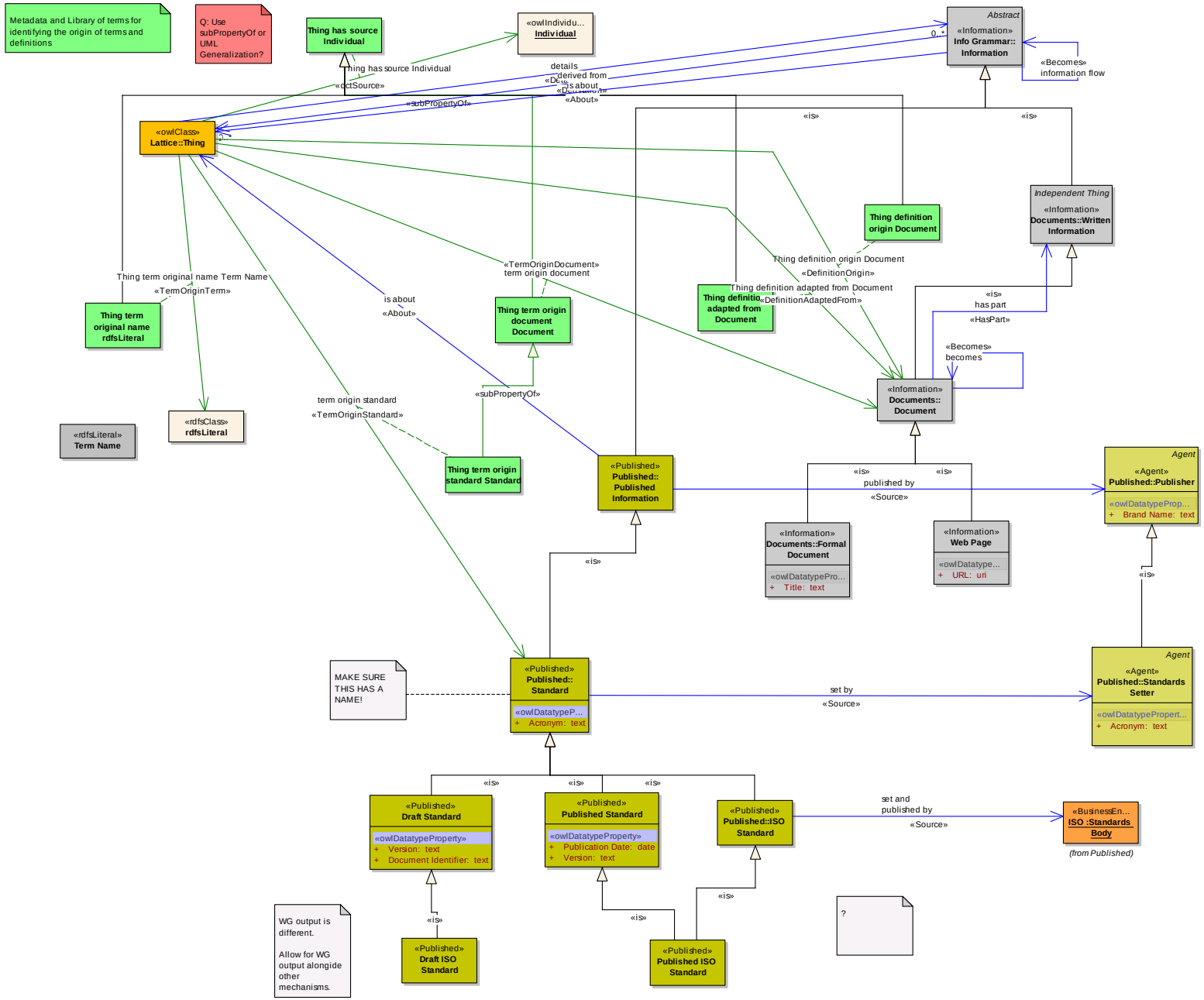
Provenance Extensions Profile



Textual Metadata Property Rendition



Provenance Property Rendition



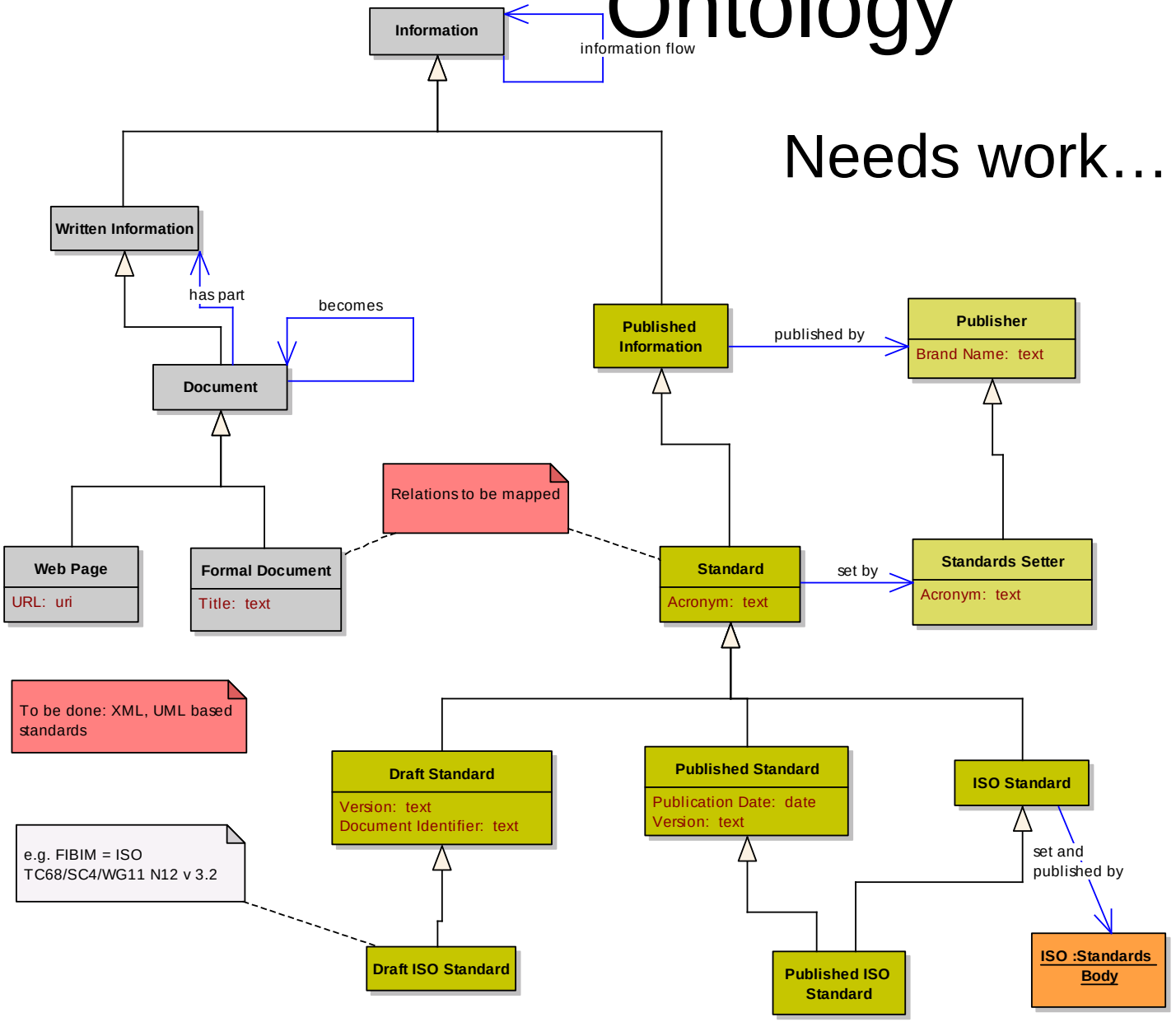
FIBO Provenance

- Term Origin
  - Actually two sets of information
    - The standard, document or website from which we gleaned the term;
    - The name of that term in that standard or document
- Definition Origin
  - Two mutually exclusive terms:
    - Definition Origin
    - Definition Adapted From

Supporting Ontologies

- OWL Annotation Properties have ranges of:
  - RDFS Literal (for definitions, notes)
  - Standards
  - Documents
- Where these are “Things” we use terms from within the ontology for the classes which are the ranges of these properties
- Much of this was already in the ontology

Standards and Documents Ontology



Needs work…

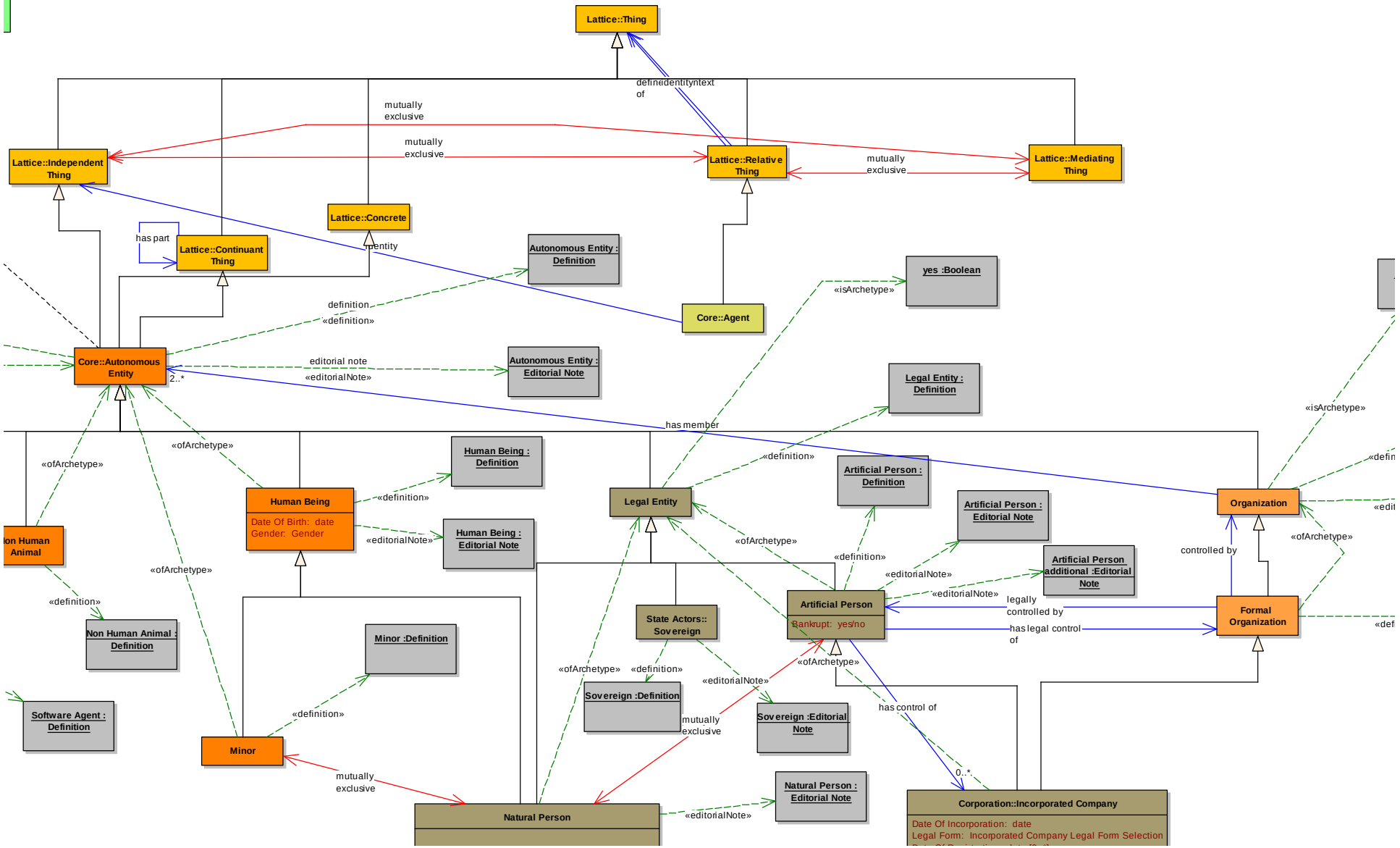
Archetypes

- Similar approach to Textual Metadata
- Identify class which “isArchetype”
  - Typed literal Type=Boolean
- Identify that class is “ofArchetype”
  - UML dependency base class

Implementation

- Instances of OWL Annotation Properties are annotation “facts”
- Render these via UML dependency base class
  - Each instance of e.g. skos:definition is an instance of the OWL Annotation Property defined as above
- Added these to Profile, for rendition in the model

Example Implementation



Next up:

- Classification facet
  - Multiple inheritance model supports the ability to classify things according to multiple facets
  - Want to be able to identify specific facets
  - UML (but not OWL) supports the detailed types of facets (MECE etc.)
    - So this is not available as OWL constructs
- Still working on this
  - Think we need a class-level element for the actual facet
  - Could then extract single inheritance taxonomies by business context

Other FIBO Ambitions

- Mapping
  - To XMl and UML standards
- Rulemaking and compliance

- Over to David…