Conformance Discussion at WS Session

*Documentation workstream, Thursday 17 May 2012*

# Review of specific FIBO-BE document sections

## 2.1 Ontological Conformance: Extensions of the FIBO Model

**This is all in Foundations – add xref and no material here.**

### Conformant Extension of Business Entities Ontology Modules

Just say that the general conformance rules [xref to the Foundations doc] apply to extensions of the Business Entities specification].

It is possible to conform to one section and not the others [write this]

Describe different conformance levels

# Conformance Points Discussion

Each conformance level is given a name [don’t need to use level as the words for this – usually specified as numbers; ours are ore symmetric]

Dependencies = owlImports in this case. DECIDE: whether one can be conformant to a module that has a dependency on another module, and not claim conformance to that other module

Dependency: does it mean more than just owlImports? What about object properties that have a range which is in another ontology?

Industry decision: whether to be able to conform to a module and not the module it refers to.

Conformant use of object properties need not have inheritance from other object properties…

ALSO: Conformant OWL Operational Ontologies

Examples like the above (Newman etc.)

What makes for a conformant OWL Operational Ontology

## Claiming Conformance

When someone claims conformance they should be able to formally state what the name of the conformance is

**Combinations:** state whether people can conform to any combination of those modules, or whether there are allowable and non allowable combinations for example.

Can we have some illustrations of conformant and non conformant use cases?

### Possible Conformance Requirements

* Conformant model extensions
* Conformant OWL Operational Ontologies

# FIBO-BE versus FIBO-Foundation:

e.g. Operational Ontology – general rules would go in foundations

Content conformance: goes here, as the 1st content spec. Following specs can refer back to this one, as being the 1st content spec.??

## Discuss.

Foundation won’t talk about content and with examples. OR Foundation can generalize the principles, that go with the examples

Outcome: Work through examples – here in BE

Then the principles we elicit from that go into Foundations.

Examples provided in each content RFC, with reference back to those principles.

### Some examples for now:

If you change the range of a property, is that non conformant?

##### Example possibilities:

* If you change the range so it’s a restriction on that in FIBO that might still be conformant
* If you change it so it refers to some entirely different class in some other ontology – what then?
* If you change it to be not a restriction but an extension of the proper property? Then what?

#### E.g. Jurisdiction concept.

If someone changes that to “Country” it changes the sense and the meaning, and is non conformant. Reframes the scope so is wrong.

Use or non use of ontologies on which a given one is dependent

e.g. Trust:

* Depends on Business Entity
* Depends on Mid level (Global Ontology) e.g. Legal, Financial, Country
* Depends on Upper Ontology (partitions).

### The Pizza Ontology approach

Q: Allowed or not?

Suggest is allowed

All agree – it’s a very clean break and introduces no risks or erosion of meaning,.

### Renaming of classes

Definitely allowed. Must state that these are exact synonyms

And must be exact if they are used as such

Adds a label

“Use whatever labels you like”

Both within display of content and In formal ontology OWL names)

# Conformance of other data models

## Logical data models

If directly deriving a data model from FIBO as part of a model driven development

Other data models may be mapped to FIBO anyway – does conformance apply there?

Entity A derived from Entity B should be able to say if the relationship to two entities in a data model complies with the corresponding relationship between the real world relationships in FIBO

Be able to say that, where a model is derived from FIBO, where a set of relationships is in the model, it is derived from the corresponding relationship in FIBO.

### Logical or physical models

What if we say that you can be compliant and not need to have the same relations?

Alternative: where 2 relationships exist should be possible to say that here is the equivalent relationship in FIBO

**NEED:** form of words to say when a data model is a conformant expression of what’s in FIBO

That is, what is a semantically conservative implementation

If you can construct a view over the resulting database which rebuilt the semantics, that is conformant; if you can’t, it isn’t.

Examples use of generic associative or attribute entities. Causes objects in the ontology to be represented ….

Link to business use

Want to be able to see that models like Fincore are compliant

Assessing other logical models

* *Degree of coverage*
* *Overlaps and gaps*

Conformance per coverage versus conformance per modeling patterns

Conformance in potential business use

Take a note from here to Business Use Cases section in the Introduction

# Original Document text (removed now) and discussion / comments

The question of conformant “implementation” of the model content is more nuanced. Because this is framed as a business conceptual model, reflecting business domain knowledge, there should be complete freedom to developers to develop logical and physical data model designs using this and other business resources as a point of reference for those designs. Similarly, in creating operational ontologies in OWL or any other first order logic syntax, it is really up to the developer how they choose to interpret and re-frame this content for the purposes of their application.

AND YET: People have suggested that we should break this model content down into smaller modules (as ontologies), which we have done, the rationale being that this would allow third parties to create something or other that would be conformant to one module and not another provided we state here what the conformance requirements would be.

QUESTION: So what exactly does it mean to be a conformant expression of this content??

## Discussion

Formulation (by indirect analogy): if you design a database there must be a set of views you can impose on that database that aside from additional technical attributes you have introduced, that reproduce exactly the logical model.

So the question is, is there a set of transformations over any artifact developed in FIBO, that can re-present any class, property, entity, attribute in that derived material, back in terms of what it is is FIBO. What we want to avoid is stuff coming from left field which is simply wrong or not justified / not needed. Important thing is not to break. Good example is inheritance trees. Identify that certain transformations are valid e.g. specializing, adding additional properties provided that are not properties.

We need to identify forms of transformation that are valid and forms of transformation that are not valid. For example if FIBO permits a multiple relationship, it is valid that in a given problem space you can narrow that to a single relationship. But if FIBO explicitly states that there is exactly one (e.g. a Functional Property), then to expand that to make it multiple that would not be conformant.

Conclusion: it is possible for a logical data model to be not conformant with the semantics of the business problem space as represented by FIBO. This would be so for UML class models in general. Examples:

* Can narrow but not widen
* Can further specialize but not generalize
* Creation of artificial rule sets as workarounds for wrong use of classes? For instance creation of an artificial union across things which are fundamentally different.
  + There are examples of these kinds of things in LDMs that have claimed derivation from IBM models but have ended up making incorrect assertions about the subject matter, as a result of generalizations across fundamentally different concepts, for technical reasons, which have failed to respect the semantics.
  + Implementations which are do flexible they can be populated with nonsense.
  + “Preserve the semantics!” wther in LDM, CORBA objects, SOA and so on. Ensure that there is no loss of semantics.

So to frame this with reference to a given model section?

Then people can claim conformance of a specific section of FIBO while making clear that they are not conformant to a specific other section.

### Use cases:

* Software tool providers – asserting that their tool is compliant with FIBO – need to be able to say that this tool is able to maintain, edit and display the content of each of the content sections in this (FIBO-BE) spec
* Tool compliance point: can this tool take the XMI we’ve produced in FIBO and import it and end up with a correct and complete representation of the material in this specification.
  + Are we saying tool support tool support goes beyond ODM and OWL?
  + MB yes – see Foundations. Business display
* Intellectual capital providers (extensions and enrichments).

### Motivations:

* Create LDMs
* Create SBVR implementation with no loss of semantics – compliance would mean that no semantic content is lost.

Transformations that should work – need to be able to make claims that for this specific area of content in this specific spec, it does work.

Example: vendors with BE related MDM solutions. They want to be able to assert FIBO-BE compliance. So we must document what it would mean to be compliant, what it would mean to non compliant and so on. There are many solutions which contain reference data as part of their offering – FIBO compliance would enable potential purchasers of those systems to know “this thing is capable of representing all the semantics in FIBO”. Or not. Or a sub set thereof.

There is a massive benefit in being able to assert, and see asserted, FIBO compliance on BE.

RBS exposure tracking to Sovereign UK exposure.

So: Preservation of semantics or explicitly exclusion of specific parts of the semantics, so that FIs can confidently source solutions. Use the example of jurisdiction versus 3166 country codes (see WG5 thing).

# Candidate Text

In introductory 2 text (before 2.1).

The question of conformant “implementation” of the model content is more nuanced. Because this is framed as a business conceptual model, reflecting business domain knowledge, there should be complete freedom to developers to develop logical and physical data model designs using this and other business resources as a point of reference for those designs. Similarly, in creating operational ontologies in OWL or any other first order logic syntax, it is really up to the developer how they choose to interpret and re-frame this content for the purposes of their application. However, in each of these situations a vendor or modeler may wish to be able to assert conformance of their work with FIBO. This section covers the conditions under which they are able to do that.