FIBO Conformance Points

Discussion notes 20 Sept 2012

# Overview

Considered the following dimensions of possible conformance:

* Things which can be conformant
* Aspects of FIBO with which to be conformant
* Elements of the model content with which to be conformant

The previous iteration of the Conformance section allowed for the maximum of each of these, and was too complex to maintain.

# Types of things which may assert conformance

Here we considered:

* Operational Ontologies
* Conventional applications

### Operational Ontologies

Yes.

### Conventional?

LDM does not need to deal with semantics, so this is not required as a conformance point. NO CONFORMANCE

**Discussion:**

* Needs further thought.
* See formal literature on LDMs. Often described as ‘semantic’
* Are we limiting conformance points to the Semech stack and not the conventional stack?

Nice to try: formulation of what are ‘correct’ transformations?

What about e.g. the FinCore architecture – semantically weak classes lead to strong semantic conformance.

Evolution of model driven development. Semantically enabled methodology?

* Best practice as distinct from conformance?
* Is there a component of MDA which is still to be fleshed out

Too ambitious for the next version but one to think about.

Questions on this:

* Are there legitimate transformations that involve semantic loss? YES (by intent – it is not for an LDM to manage semantics)
* Are there legitimate transformations that involve semantic addition?
  + Outside of what’s published to date – yes
  + Should be extended first in FIBO as BCO
  + Use of top down development process as a pre-requisite to logical model design in the development process – so the extension follows the Model Extensions conformance point
  + Do we need to say this? NO would get too bogged down in methodological concerns.

**Action:** MB to summarize this better.

See existing section where we summarized the principles before applying them to the different application types (semantic v tech).

Traceability - a product is conformant with FIBO if it states, for every component of that model, its traceability, or where the model is not traceable to a FIBO component it is a Non functional Requirement (NFR). Semantics outside the scope of FIBO should first be modeled in a conformant extension to FIBO locally, and then implemented as logical design.

– proposed new Conformance statement. YES

**Action:** MB to draft and present for further review.

# Aspects of FIBO one might assert conformance to

Aspects of FB considered are:

* Conformance to the model semantics
* Conformant extensions to the existing model material
* Conformant presentation of the conceptual ontology material

## Model Semantics

## Conformant Extensions

* Use of FIBO BE as defined
* Conformant extensions – must conform with Business Presentation requirements – this is the only scenario in which someone needs to conform with presentation requirements.

## Business presentation

Existing material. For FIBO itself this is taken care of in Adaptive, but is included in the specification so that this is clearly defined as being a vital aspect of FIBO. For local conformant extensions, these should be presented to business SMEs for validation, and so these should also be presented in some format which conforms to these requirements.

# Conformance to individual FIBO Elements

What parts of the FIBO content can something assert conformance to:

* Ontologies
  + With or without their OWL Imports?
  + With partial use of a given ontology (e.g. because of polyhierarchical taxonomy)
* Modules (UML package; namespace)

## Individual ontology

Yes.

### Imports

No, you can’t assert conformance and not use the imports of the ontology you are using.

### Partial Use

Use an ontology but only use some of the elements within it – YES

## Modules (namespace / sections)

Not needed.

Was in the previous draft – remove. This simplifies the Conformance section considerably.

## Other Elements

Further ideas for this will drop out of the ongoing Operational Ontology research. We will capture what we have so far, in the upcoming Convenience Document. Additional stuff (or removals of conformance points) to follow when the OO work is further down the line.

# Other Considerations

## Logical Model Conformance Considerations

There are valid transformations from LDM to PDMs, e.g. are there set views that correspond to 1:1 with the LDM, then the PDM is conformant (given NFRs etc.).

**Similarities here:** database keys are the equivalent of an NFR between logical and semantic level.

See existing list (in June document Section 2) on possible ways of introducing semantic contradictions, which are to be avoided.

### Example non conformances

Previous experience with some conceptual models and the products derived from them.

Published a LDM with a common supertype to things which were fundamentally different. The equivalent in FIBO would be a common superclass of an independent and a relative – effectively generalizing over an entity and a role of an entity. May be legit in physical design, but not in logical design if it is shown to the business.

### Theoretical formulations

Academic work around LDMs, with e.g. sub-type sets. Covering or not. (see UML GenSets – covering v non covering, mutually exclusive v non ME). Given the right rigor, can be mapped to FOL.

### Actions

Things to consider in updating the conformance material:

* Transformations
* Preservation of logic statements
  + Reduction back to CL
* Preservation of the conceptual v logic v physical