Documentation Workstream Notes

**Thursday 26 April**

# Summary/Actions

* Definitions section: Add definition for Model Theoretics as used in this RFC.
* Define what is the FIBO model theoretics (MB)
  + Include treatment of things which are information constructs but which are regarded as being real things in the domain of discourse.
* Dig up material and references on model theoretics and how to describe this. (RN)
  + Will become part of Conformance and/or informative appendix on this.
* Describe the classification approach used in FIBO, in a formal way (MB)

# Detailed Session Notes

Documentation - some comments:

### Model theoretic conformance:

"Model theory" in math - has a specific definition there. Interpretation between the syntax of the grammar and the meanings of the representations. This is in line with what I think we mean by Model Theoretic here, but does this need more work?

Can we break down Model Theoretic conformance into specific components? Can we say what they refer to?

e.g. OWL syntactic conformance is a clear, known quantity. Model Theory has different meanings and connotations in different worlds.

Let's look at this...

### Possible aspects:

Internal consistency of the terms in the domain that FIBO has defined. It's possible to define things which are not in conformance with the FIBO standard itself.

What about "FIBO Model Theoretics".

Check the "Definitions" section: not defined.

**Action:** Add definition for Model Theoretics as used here.

There are multiple model theories, so to talk about Model Theoretics, we need to talk about what is the model theory of that model, e.g. REA, XBRL-GL, IDEAS Ontology and so on. So we would need to talk about model theoretics at the FIBO area - though this means we need to define this somewhere.

Otherwise we are potentially saying any or all of the model theoretics of the models that we are addressing.

This also has an impact on how we talk about the Shared Semantics area - how we integrate some other model theories or models thereunder, into the FIBO top level FIBO model theoretics.

## Actions:

1. What is the FIBO model theoretics (check)
   1. Treatment of things which are information constructs but which are regarded as being real things in the domain of discourse.

### Actions:

Rob - can dig up material and references on model theoretics and how to describe this. Will become part of Conformance and/or informative appendix on this.

There is currently no obvious single consensus view on this in the literature, so some of our work here will be original. In this document we would also point out any remaining weaknesses, open questions and so on in that literature - we can't make absolute claims at this point. It might not be possible to come up with a mathematical proof of conformance. We don't know how to do that. That is, it may not be feasible to be able to prove formally that a given implementation of the ontology or an extension of it, is conformant.

What we will have is what we are doing now, maybe tag what are the areas not covered; or where there are ways of describing conformance in the sense usually considered appropriate within the OMG, versus conformance in a mathematically provable way (model theoretic conformance). One problem here is that in using the terms "model theoretic conformance" we are implying that there is some formally provable sort of conformance.

For instance, we want to be able to describe how one would conformantly define a new FIBO standard section, would need guidance as to how to make sure that what they create is done in the FIBO way.

This needs another pass through.

Idea: what about how we deal with classification theory and the use of this in creating the or a candidate taxonomy of concepts. Also how we bring the different types of ontology together at least in an OMG conformant way. for example classification based on criteria other than "Is a" relationships, are valid in the wider world but would not be conformant in FIBO.

Mike: have go at describing the classification side.

IDEA: Also look at the ontology quality material that came out of the Ontology Summit??

## Other matters:

### OWL Profile update:

Where the text said the union classes should be anonymous but the example had them named. It turns out the text was right and the diagram was wrong. In effect, any sort of restriction has to be anonymous in OWL. Then you have to have either a sub class or an equivalent relationship to the real user-visible union class.

In OWL the union class is described as a "Class expression".

Maybe this corresponds to the logic glyphs we had i.e. the anonymous class.

This was discussed in more detail in the “Technical Model Framework” session.