

# Meeting Minutes 5 September 2000

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## 1 Summary

The CellML meeting of September 5 was most notable for its condemnation of Warren's "ontology defined in CellML" proposal for combining rules with class definition. One would have thought this might have been brought up sooner. We also talked a little bit more on encapsulation and the associated inheritance scheme.

## 2 More On Encapsulation

In a previous set of meeting minutes the introduction of a new role value for variables (`inherited`) had been discussed that would indicate that the variable should be automatically mapped from an encapsulator component. It was generally felt that introducing the new role didn't really offer any advantages, and might indeed prevent the efficient re-use of components in some situations. For example, if when defining a channel-like component in some kind of component library, the component author doesn't want to limit that component to only being used as an encapsulated component. By setting the role of variables in the channel to `in`, the channel can be used in both an encapsulated context and a network context without any problems. Implicit inheritance along encapsulation connections in this case just becomes a convenience that allows the author to avoid having to re-map variables in an encapsulator so that they may be passed down to encapsulated components (which may not be able to connect directly to the components where some of its inputs are declared).

One rule that was left out of the specification of September 5 was that a component may only ever be encapsulated by one other component. The rules on the other components that encapsulated components may be connected to and inheritance down multiple levels of encapsulation need to be better spelt out, preferably with examples, in any case.

## 3 More On Ontology

Poul arrived at the September 5 meeting on a mission to destroy Warren's "ontology defined in CellML" proposal that had made it as far as the CellML specification of the same day. His main gripe was that the set of rules that would be available using Warren's system was not sufficiently powerful (for instance, one could not specify that a component of class membrane must be connected geometrically to exactly two components of class subspace), and that ontology was beyond the scope of CellML.

His first point is correct. In Warren's scheme it was only possible to specify which relationship flags (geometric or encapsulation) might appear on a connection between any two components of a specific class, and which flags must not appear. The scheme was not intended to handle more complex constraints such as the example in the previous paragraph. Warren backed down on this in the courteous and diplomatic way for which he is renowned.

To accommodate more complex rules governing the available connections between components, some scheme external to CellML will undoubtedly be necessary. A review of The Ontology Inference Layer (OIL) may appear in the Literature Review section some time in the near future with this in mind.

However the idea of using objects from the CellML data model for the definition of classes that can then be re-used throughout a model described using CellML is likely to re-surface. Watch the upcoming meeting minutes!

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Input document last modified : Mon Feb 02 15:25:01 NZDT 2004