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1 Introduction

The first face-to-face meeting between Poul, David and Warren after Warren's trip to Physiome failed to live up to the hype. Many were expecting the complete CellML specification to be produced at this meeting but unfortunately we hardly even managed to agree on appropriate terminology for the key concepts. Some of the key points that were made are described in this document.

2 The Model Is A Network, Dammit!

Whatever way you look at it, a model of cellular function is best represented by a network. Any model can be described as a network of connections of various types between discrete components. A component is another name for a functional unit in a model, and may correspond to a physical compartment or be a convenient modelling abstraction.

It must be possible to combine two or more networks into another larger network, so the contents of any network should be transparently available (with the aid of an appropriate identifier) to parent networks.

3 Complexity

It may be desirable to encapsulate a complex part of the model within a single node which contains all of the interactions with the rest of the network on that complexity level.

A network or part of a network may be defined in several different ways representing different levels of complexity, where each definition exposes the same interface to the outside, or to the rest of the network. Information can flow in both directions along connections between the different complexity levels, so the system should probably not be considered strictly hierarchical.

Local refinement of a model can be thought of as the creation of a sub-network that sits parallel to the refined section of network in the original model. To facilitate switching between the two parallel layers, both should be disconnected from the original network and wrapped up in a single "switchbox" component which provides the interface to the complex section. The major limitation of this approach is that refined regions cannot overlap. (As of 2000/08/16 we probably won't bother with refinement anyway.)

4 Property Inheritance

Properties such as geometry or temperature can be distributed through the network using "single-parent" hierarchies, which are a set of parent-child relationships between components in the original network. The mechanism used in describing these relationships must allow for the renaming of variables and the non-inheritance of some variables.