

# NeuroML Editorial Board Meeting 2015

## Editorial Board meeting before OSB workshop Sardinia, 11th May 2015

*In attendance:*

**Robert Canon**, **Angus Silver**, Adrian Quintana, Matteo Cantarelli, Boris Marin, Alex Cayco Gajic, **Pdraig Gleeson**, Simon O'Connor, **Sharon Crook**, Michael Hines

*Not present:*

**Mike Vella**

*Current NeuroML Editors in **bold***

## 1) Review of NeuroML/LEMS progress since last year

SUMMARY TO DO LIST FROM 2014:

- Official release of beta3 in several weeks  
*Done*
- Survey of community regarding models in NeuroML letting them know what is there and proving a list to prioritize as well as asking for additional models  
*Not done; we discussed whether this would be useful some time over the next 12 months. It would be good but is a low priority.*
- Describe release process for the specification and libraries  
*Described here:*  
<https://docs.google.com/document/d/1Z9PNayuBzg8AMUDUN1QXCZjlrEUnaMDDriDk0FoyMLI/edit#>
- Stabilize interfaces so that if stuff behind it changes, interface won't break.  
*Work is ongoing for this in [jLEMSDev](#) (by Robert Cannon) and [org.lemsml.model](#) (by Boris Marin).*
- Decide on licensing issues (specs, OSB, models, libraries)  
*Done [for NeuroML](#). Issue for OSB:*  
<https://github.com/OpenSourceBrain/redmine/issues/80>
- Improve documentation with better use of GitHub for development. This is important and is high priority.  
*Done, e.g. <https://github.com/NeuroML/NeuroMLWebsite>,*

[https://github.com/OpenSourceBrain/OSB\\_Documentation/blob/master/contents/Help/09\\_Converting\\_To\\_NeuroML2.md](https://github.com/OpenSourceBrain/OSB_Documentation/blob/master/contents/Help/09_Converting_To_NeuroML2.md)  
<https://neuroml.org/getneuroml>

- PyLEMS development as an issue on GitHub.  
*PyLEMS is stable and usable now but still has a number of [open issues & enhancements](#). Not a top priority given the limited bandwidth of current developers, but further development & enhancement should be supported/encouraged if someone shows an interest in the task.*
- LEMS logo as a GitHub issue.  
*An [issue has been created](#). This is a lower priority problem.*
- Some exploration with community of standards for describing morphological structures including Collada, work of Helmstaedter, Bhalla and Destexhe.  
*Hasn't happened yet due to lack of manpower. This type of initiative may be happening elsewhere. Another option is to write a grant specifically for this type of work. Sharon will follow up on discussions she had at Allen Institute related to MorphML & will discuss this also with Stephen Smith. Key is to connect to people who will actually be using files in these formats.*
- GitHub issues related to list of items to “curate” with original papers.  
[Done](#)

### What else has happened?

Details on recent activity was summarised in mails to the main list on [2 October](#) and [30 April](#).

## 2) NeuroML 2 Release beta 4

[Gap junctions, analogue connections](#) (important for [OpenWorm](#)) will be the main new feature, as well as improved export to NEURON etc. See <https://github.com/NeuroML/NeuroML2/milestones/NeuroML%20%20beta%204%20release> for more.

Regarding conversion NeuroML <-> NEURON: Support for conversion to NEURON of some spike generating mechanisms in NML2 is not supported and/or not been tested yet, but most other features of NML2 are well supported in the mapping to NEURON. [jNeuroML](#) can do this conversion and will throw an error when it can't convert something (see [here](#)). This is the case for other simulators too. For other direction, mod file conversion to LEMS must be done

manually. Work on support for exporting morphologies from NEURON is progressing, see [http://www.opensourcebrain.org/docs#Converting\\_To\\_NeuroML2](http://www.opensourcebrain.org/docs#Converting_To_NeuroML2), also for scripts to compare mod file behaviour to NeuroML2 channel behaviour (pynml-channelanalysis & pynml-modchananalysis).

Timeline for release of NML2beta4 is predicted to be 2-3 months, i.e. end of summer 2015.

### 3) LEMS development - Java and Python support

There are still some shortcomings in the current state of LEMS. How to express heterogeneous parameters from a distribution should be a priority. There should also be work to allow for distributions for parameters so that you can have a population of cells with same structure but different parameters taken from a distribution.

Work is ongoing for this in [jLEMSDev](#) (by Robert Cannon) and [org.lemsml.model](#) (by Boris Marin). Robert and Boris will continue parallel developments, keeping in communication & will coordinate updates to the core jLEMS. This work will also benefit the core NeuroML2 Java APIs.

See point above regarding PyLEMS.

### 4) NeuroML website/ NeuroML DB

[NeuroML main website](#) has been redesigned in the past year. Under development on GitHub [here](#). Comments/suggestions/bug reports can be added [here](#). Arizona State University will continue to host neuroml.org.

Work is continuing by Sharon Crook and Justas Birgiolas on the NeuroML Database:  
*“The NeuroML Database is a relational database that provides a means for exchanging NeuroML model descriptions and their components. One of our goals is to contribute to an efficient tool chain for model development using NeuroML. This emphasis allows the database design and subsequent searching to take advantage of this specific format. In particular, the NeuroML database allows for efficient searches over the components of models and metadata that are associated with a hierarchical NeuroML model description.”*

The current version of this is live at <http://neuroml-db.org>, and the infrastructure for this is under development at <https://github.com/scrook/neuroml-db>.

### 5) Editorial board process - elections 2015

New elections will take place in June for 2 editors, as the terms of Angus Silver and Mike Vella are finished.

## 6) Relationship with NineML and other initiatives

There has been a lot of progress with network specifications by the NineML specification committee. Active discussions on related issues [here](#). A paper on NineML is nearing completion. [Tom Close](#) is main developer on this at moment, Andrew Davison is coordinating. Padraig met Tom at UCL in March this year to discuss developments. Padraig also meet Andrew soon to discuss future coordination between NineML & LEMS/NeuroML2 interaction. There is currently a working NineML exporter for (some) [LEMS/NeuroML2 models to NineML](#) which can be [used with jNeuroML](#). Once v1.0 of NineML is stabilised, this will be made as compliant as possible.

## 7) Future developments of NeuroML

There was discussion about when there would be a “full” NeuroML v2.0 release. It was agreed that most likely there will always be more features to include in NeuroML, and so NeuroML v2beta5 might be best to make into an official NeuroML v2.0 release and progress from there.

What new features should we try to focus on in the next few months?

- Space - multicompartmental representations & diffusion
- What is needed for multiscale biochemical and electrophysiological models
- Light: optogenetics and imaging
- Network representations

It was agreed that the limiting aspect for these developments is the manpower available to implement and test these features as well as support existing specifications/libraries/simulator mappings.