**Geoscientific
Model Development
Discussions**

Interactive comment on "Next generation framework for aquatic modeling of the Earth System" *by* B. M. Fekete et al.

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Received and published: 14 May 2009

First of all, we would like to thank the first reviewer's comments. The reviewer is definitely right that the paper would have been much stronger, if we had working examples of our XML based system. Perhaps, we could have spent more time discussing our operational system FrAMES, which actually does work applying the very same approach without the XML model description.

To some degree, our goal with this paper was less of introducing NextFrAMES, but to argue for new ways of expressing models (hence the lengthy introduction).We strongly believe that scientist need a new mean writing models at a more abstract level (much more like writing models in MatLab, Simile or Stella) that can be implemented in a computer platform independent manner. The intent with NextFrAMES is to go beyond,

what those generic tools provide and offer capabilities that appear to be common in hydrological and land surface models. We think that our paper clearly indicated that FrAMES and NextFrAMES primarily was developed for hydrological applications but we are convinced that the same approach is applicable for a wide array of Earth System Model components.

We actually stated that NextFrAMES perhaps simplistic ways of managing space and time is probably inadequate for many Earth System Modeling problems and over time, we would be interested to learn from other communities (beyond hydrology and land surface processes) if NextFrAMES can be extended to support their needs.

We have to admit that our group does not work very closely with ESMF at the moment, although the first author spent several months trying to learn ESMF two years ago, before starting to develop NextFrAMES in the hope that ESMF would be ideal platform from which NextFrAMES can be built. Back then, ESMF turned out to be highly incomplete and functions described in the documentation would simply not work through the C/C++ API. We still think that a cluster implementation of the run-time engine on top of ESMF could be still a viable option.

We apologize for the typos, which appears to be largely those kind that spell checkers don't catch. Apparently, asking two of our colleagues to proof-read was not sufficient.

We find the flat rejection overly harsh and hope that other reviewers and the editors will be more forgiving and recognize the intent of the paper beyond introducing NextFrAMES and recognize the need to start a dialog model developers about the implementation of Earth System model components in a more abstract level.

Interactive comment on Geosci. Model Dev. Discuss., 2, 279, 2009.