

## NEMO Developers Committee Bologna 2013 - Minutes

### Developers Committee

The meeting took place in Bologna on 21 & 22 november 2013. Detailed agend list of participants, and presentations are available here: <http://www.nemo-ocean.eu/Developing-with-NEMO/Developer-s-Committee/Developer-s-Committee-2013>.

#### General context

An intense work on perspectives for NEMO over the next 10 years took place in 2013, with a large contribution from the Enlarged Developers Committee. The White paper, resulting from this work, is now very close to its final 2013 version, allowing better foreseeing on where we want to go, and how. The White paper has strongly driven the discussions during this meeting, with some important clarifications on the goals and ways to proceed.

#### Work done in 2013

See Gurvan's presentation on line, in addition to the annual report sent by mail. All actions listed as priorities in the 2013 workplan have been successfully completed.

More details:

- considering the developments done in BDY, agreement to remove OBC in 3\_6\_alpha, even if radiation conditions does not run successfully for now (some effort will be put to fix it)
- Wetting and Drying development was announced but is still not done. A specific message on this point to be sent to Steering Committee

#### Discussion and comments on NEMO White Paper

Having this first version of the White paper is a success after this year of work on prospective. This document is at first for us, as a guidance to define paths and steps for NEMO development. It will also be useful, after careful review, for deciders and for future projects. For now, the document should be reviewed to check, at least, that it summarizes what has been discussed, the points on which consensus has been reached, and the points remaining in discussion (i.e. to be considered for 2014 update).

The discussion is open for comments on the current version, so as suggestions on the ways to carry the yearly update of this White paper:

- Agreement to add a Summary. (Session added to agenda to list for each chapter, the consensus points; action: Julien Le Sommer will write the Summary)
- Still too general, statement could be made clearer, ne really useful to define priorities at this point
- Suggestion to try rewriting chapter 4 (probably some understatements compared to conclusions of the meeting in June, action: Anne-Marie Tréguier); and Chapter 6 (not taking in account the existing nemo\_assim working group. Action: Simona Masina and Arthur Vidard)
- Chapter 10: conclusions: to be suppressed at this stage (see next year)
- No clear advice on the way to update for now. It will not be of course a full rewriting, but at least a check on how things have progressed, if some open questions are evolving toward consensus...

#### Main streams proposed for 2014 Workplan, including inputs from White Paper

See Gurvan's presentation, in addition to the wiki pages <https://forge.ipsl.jussieu.fr/nemo/wiki/2014WP>. Following the streams defined in White paper, workplan is now divided in 2 parts: the wiki pages "by institutions" list some specific contributions of each institutions towards a better answer to some of their needs, and the "Stream0 – Shared actions" page lists the main streams for which a set of actions from different institutions are gathered on a common goal (with often an associated working group).

This 2014 workplan is a first step towards the nemo\_V.4.0 release including all the consolidated developments since 3.0 and the simplification/increased robustness allowed by the more precise objectives defined in the White Paper. Comments:

- Dependencies and priorities are still unclearly defined. To be improved using Summary of White Paper.
- Leadership of a working group should be added as an action in the workplan (in shared actions)
- Review (in fact preview) of developments should be encouraged. Reviewer names should be added in the workplan.

#### AGRIF

See Jérôme Chanut's presentation. For 2014, is an identified shared action, including creation of a working group lead by Laurent Debreu.

#### Wave coupling: results of 2013 working group and near-future

Paolo Oddo summarizes the actions of the working group this year. K. Mogensen presents what ECMWF has developed. In 2014, some options on how to envisage the coupling will be agreed on.

#### System simplification and strengthening

See Gurvan's presentation. A working group is proposed to drive the process. After discussion, proposed simplification process:

- dec 2013: Gurvan to send document on the proposed choices to the NEMO community [ available for now on the wiki:

[https://forge.ipsl.jussieu.fr/nemo/wiki/2014WP/2014\\_SystemSimplification](https://forge.ipsl.jussieu.fr/nemo/wiki/2014WP/2014_SystemSimplification) ]

- deadline at the end of January 2013: consortium members and users send their warnings, identifying potential blocking points.
- in February 2013 : System Team makes sure that each issue will be tested somewhere "tested" means : verify whether the new choice of option degrades the previous solution.
- deadline in July 2013: consortium members send information (backed by simulations) on options that should not be removed from NEMO.

#### Inputs for discussion on NEMO validation

See Rachid Benschila's presentation on COMODO. Adding some appropriate systematic physical/numerical validation tests for NEMO is considered as a major action (in 2014: Simona & Paolo). Some of the COMODO tests should be taken in account. The "jet" case may not be relevant, for example. This should be discussed in the community through the working group on simplification and robustness.

#### Setting up working groups and their agenda

Considering the existing working group, a limited number of working groups should be created, in order to be able to fulfil the commitments. Some working groups are proposed to drive some effective development work, whereas others are more similar to groups of interest, to follow the state of the art on some important subjects. See final list and agendas proposed by Developers Committee below.

#### Configuration Manager, results (working group and developments) for 2013, expectations for 2014

During previous meetings, the Developers Committee has pointed the absence of the NEMO Configuration Manager. A first version is now available (see Julien Paul's presentation).

In 2013, the members of working group will evaluate this first version regarding their needs and define priorities to improve it. Developers Committee agrees with the list of members of this working group.

#### Future use of FCM to easily build code from more than one branch

See Rachel Furner's presentation. The new release of FCM will be tested for NEMO by FCM developers, in order to check if it fulfils all the needs corresponding to makenemo functionalities, including users guidance. Configurations using AGRIF should be tested too. For now, these experiments will come aside from existing tools (makenemo and previous FCM release, not supported anymore).

#### Improving the way we work

Many different suggestions have been done, including a different agenda (proposed workplan ready one month before Developers Committee meeting, presentations (webinar?) available to all users, separate Merge party and Committee (System Team members are too tired, not necessarily available for discussions, etc...)). Claire will write a proposal to be submitted to the Developers Committee.

#### Conclusions of Developers Committee

- 2013 annual report

Is approved

- 2014 workplan proposal

Is approved, but priorities, in relation to White paper, should be defined

A list of needs for XIOS developments will be send to XIOS developers

- NEMO White Paper

Is approved after addition of a Summary, suppression of Conclusions and rewriting of Chapters 4 and 6

- List of 2014 Working groups and contributors

Already existing, and continuing their work:

Working group	Leader	Contributors	Objectives	Agenda
Nemo_assim	Eric Blayo	M. Balmaseda (ECMWF) R. Benschila (NEMO Team, CNRS), E. Blayo (LJK, U. Grenoble), P-A. Bouttier (LEGI, LJK and NEMO Team, CNRS), P. Brasseur (LEGI, CNRS), C. Ethe (NEMO Team, CNRS), D. Lea (UK Met Office), C. Levy (NEMO Team, CNRS), G. Madec (LOCEAN and NEMO Team, CNRS), K. Mogensen (ECMWF), E. Rémy (Mercator Océan), J. Verron (LEGI, CNRS), A. Vidard (INRIA), J. Waters (UK Met Office), A. Weaver (CERFACS), K. Haines (Univ. Reading), S. Masina (CMCC), S. Dobricic (CMCC), A. Storto (CMCC), M. Martin (Met office)	definition of several priorities and to the development of several bricks of a NEMO assimilation component	See annual reports
Configuration Manager	Julien Paul	Paolo Oddo Dave Storkey Jean-Marc Molines	Evaluate this first version regarding their needs and define priorities to improve it.	March 2014: results of first tries. Discussion and validation of 2014 actions

Wave Coupling	Nadia Pinardi	Paolo Oddo Emanuela Clementi Damiano Delrosso Adrian New Geroge Nurser Yevgeny Aksenov Judith Wolf Joel Hirschi Andrew Coward Jerome Chanut Sylvain Cailleau Christopher Harris Francois Bocquet Anne-Marie Treguier Patrick Marsaleix	Understanding the relevance of Atmosphere-Wave-Ocean exchanges processes and their roles in driving the ocean circulation at both coastal and global scales; identify required actions and models developments. In particular the working group will explore the way in which surface gravity waves can influence the ocean circulation.	Start involving external experts in the working group. 2014: workshop on Atmosphere-Wave-Ocean interactions with the participation of internal members and external experts
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Proposed:

Working group	Leader	Contributors	Objectives	Agenda
AGRIF	Laurent Debreu	Sébastien Masson Jérôme Chanut Simona Flavoni Rachel Furner	Precise the needs on their application. Involved in defining priorities in workplan	
HPC	Sébastien Masson	Italo Epicoco Silvia Mocavero Marie-Alice Foujols Jason Holt Gurvan Madec	a) make short term recommendations for improving the performance of the existing system b) propose criteria for a taking decisions at Gateway 2025 regarding HPC. c) provide more detail on Gung-Ho (esp. regarding its implications for mesh discretization) d) identify other possible strategies and approaches for evolutions in the long term.  e) define a simple configuration (with IO and complex geometry) that will serve as a proof of concept for validating the proposed approach for the future system. (?)	For the next 2 years, as a start...  - A workshop to be organized in 2015 on “NEMO in 2025 : routes toward multi-resolution approaches”.
Simplification and robustness	Gurvan Madec	Paolo Oddo Simona Flavoni Andrew Coward Claire Lévy Rachel Furner Pierre-Antoine Bouttier Arthur Vidard Jean-Marc Molines Anne-Marie Tréguier	drive the process	- dec 2013: Gurvan sends his note to NEMO community - end of jan. 2014: consortium members and users send their warnings, identifying potential blocker. - Feb. 2014 : System Team makes sure that each issue will be tested somewhere "tested" means : verify whether the new choice of option degrades the previous solution. - July 2014: consortium members send information (backed by simulations) on options that should not be removed from NEMO.

- Messages to Steering Committee

The Developers Committee strongly approves with the decision made in 2013 not to split the minimum first one man-year contribution in too many “parts” (40% min for NEMO officer, not less than 20% for others, i.e. not more than 4 experts). Furthermore, the Committee suggests that this contribution should be devoted only to some so-called shared actions, all other actions (the “specific, institutional”) coming with additional manpower.

A specific message concerning the “wetting and drying” development will be written.

The review process on developments (which should in fact mainly be a preview) should be encouraged and better taken in account in the amount of work done.

The decrease of manpower is obviously going to become a problem, moreover with the need to have experts on the long term (permanent positions) to be able to ensure the sustainable development of NEMO.