

title**June2016****body****NEMO Developer's Committee meeting -
Tuesday 28 June 2016**

The meeting will take place by videoconference

Minutes of the meeting:**Introduction – Agenda and objectives of the meeting - C. Lévy*****Role of NEMO Developer's Committee***

- Share an overview on the ongoing work: actions of workplan and of Working Groups. Check coherency and results
- Get updates from all experts on the ongoing work
- Elaborate advice for near future and mid term

Agenda : as usual, and also:

- Coordination of work on new ideas for sub-gridscale parametrisations
- Do we need to take actions for improving the representation of tidal currents and internal tides in NEMO ?
- Organising update of the NEMO Development Strategy document

Agenda is approved

Information on the discussions with NCAR

NEMO Consortium has answered a Request For Information from the ocean working group of CESM-NCAR: they are going to change the ocean component of their Earth System Model.

NEMO's answer is available [here](#), along with the answers from other groups. Reading and comparing the answers is an interesting exercise, especially since we are under the process of updating the NEMO Development Strategy document (see below).

At NCAR, a workshop took place end of June to discuss the answers to their RFI.

Presentations were made by the six groups that have responded the RFI (A. Navarra did the one for NEMO). The impression is that within the “mature” models NEMO is definitely the best choice, in terms of technology and community. However, MOM6 and MPAS (the DOW unstructured model) appear also to be strong options.

The issue is now in the hands of various Committees and a final recommendation is foreseen by the end of the year.

Brief reports and discussion on Working groups:

The report should include

- * the main progress of 2016 (especially if they induce changes in the development strategy document)
- * the coherency/discrepancies of these results and the 2016 work plan
- * if relevant the inputs from these results for the 2017 work plan

AGRIF (L. Debreu -> Jérôme Chanut)

Presentation is available [here](#).

All expected major development are underway.

It will be important and useful to gather new users of AGRIF in NEMO, now that it is becoming more reliable.

Overlapping grids with shared MPP resources is indeed a holy grail, which is already working with some other platforms (french CROCO, for example)

Wave coupling (E. Clementi)

Presentation is available [here](#).

- First part of developments (wave coupling at global resolution) will be added in NEMO reference during next Merge Party in Decembre 2016.
- - Is there a clear idea of the target scale of physical process we want to take in account for the "small scale wave coupling"?
- - How many times did the Wave coupling Working Group met? Suggestion to add experts to better interact withthe OSMOSIS project.

Robustness and test cases (S. Flavoni -> J. Le Sommer)

Presentation is available [here](#).

What about lateral boundary conditions within the user_defined.F90 module?

It could be the right place to include analytical lateral boundary conditions.

HPC (M. Bell)

Presentation is available [here](#).

A question on the haloes with MPI: the points in haloes are not included in diagnostics. Could be useful especially for the northfold in global configurations.

Configuration Manager (S. Ciliberti)

Presentation is available [here](#).

SIREN is now fully operational as the backbone Configuration Manager tool, coherent with the 3_6_STABLE release of NEMO.

For the future, pyNEMO is now developing some additional functionalities. The perspective is to build a unique infrastructure combining those tools, each having its role in the system (no duplication of efforts).

The Developer's Committee suggests the Working group to present the distribution of the functionalities and future organisation during next meeting in December 2016.

The Committee also suggests to merge the Configuration Manager with the Robustness and Test Cases working group in order to organise a unique process defining the users interface to build a new configuration.

Both suggestions are approved, new organisation to be presented next December

Sea-ice (E. BLockley and M. Vancoppenolle)

Presentation is available [here](#).

Data Assimilation (P.A. Bouttier)

Presentation is available [here](#).

- Renewed working group had its first meeting last week.
- - A catalog of applications would be useful
- - What is proposed for linear tangent and adjoint models of NEMO in the future?
- - Concerning the proposed functionality of ensemble runs within one executable of NEMO, the question of compatibility (with AGRIF, with OASIS) is raised.
- The Committee suggests a change of name of Working Group, in which the ensemble runs would be explicit.

Brief report on status of 2016 workplan's actions and 2017 perspectives by the NEMO officers of consortium's institutions:

The report should include

* The status of the specific and shared actions of the work plan for which an expert of

their institution is PI (see <https://forge.ipsl.jussieu.fr/nemo/wiki/2016WP>). The goal is not to screen all the work plan, but only to identify delays or problems, if relevant

* The preliminary streams, as seen for now, for 2017 work plan

CMCC (D. Iovino/T. Lovato)

Presentation is available [here](#)

CNRS (S. Flavoni -> J. Le Sommer)

Report on status of 2016 workplan's actions

Shared actions: no relevant problems; developments are ongoing

CNRS-5 Assessment of LIM3 with AGRIF

CNRS-6 Simplification of vertical diffusion

CNRS-7 Simplification of configurations, introduction of user-defined module : need tightened collaboration with Configuration Manager and AGRIF WGs: nesting tools and cm need to be able to run with this new interface

CNRS-10 Passive tracers run offline with vvl

CNRS-12 Continuous integration tool ('Trusting')

CNRS-13 Evolution of the Collaborative Development Environment (CDE): it will be operational at the end of 2016 with the agreement of all institutions of the Consortium

other shared actions are to be done (in second part of 2016)

Perspectives for 2017 of CNRS: Nothing new yet, work on AGRIF, user defined configurations will be continued

INGV (E. Clementi)

Presentation is available [here](#)

Mercator (C. Bricaud)

Presentation is available [here](#)

The on-line coarsening is now indeed working for eORCA025 with nemo_3_6_STABLE (in a separate svn branch).

Met-Office (T. Graham)

Presentation is available [here](#).

AGRIF on the vertical still requires some more work (ongoing).

NOC (A. Coward)

SIMPLIF-5 (reimplement Smagorinsky) is done and documented. Code is available on

[branches/2016/dev_r6381_SIMPLIF_5](#) with the documentation incorporated into [branches/2016/dev_r6325_SIMPLIF_1](#) This should serve as a template for implementing other eddy SGS parameterisations.

A UK Working Group (M. Bell leading) has been active in pushing for completion of the wetting and drying capability. The functionality can be demonstrated in some test configurations but tests of accuracy and robustness are continuing.

NOC (through J. Harle) remains active in the Configuration Manager WG and will continue working towards a merger of SIREN and PYNEMO functionality in a single suite.

It is still planned to contribute to the HPC WG with an implementation of wider haloes to reduce communication.

Question was raised on the validated functionalities of the wetting and drying

development. Some work is still underway.

Other presentations or discussions:

- Coordination of work on new ideas for sub-gridscale parametrisations (M. Bell)

Mike Bell proposes to set up an active and small group to discuss the new ideas on sub grid scales parametrisations, in order to elaborate a clearer consensus for the updated version of NEMO Development Strategy. The idea is approved, with a group of 3 to 5 experts, including for now Mike Bell, Laure Zanna, Julien Le Sommer, George Nurser and Helene Hewitt. More information to come in the near future from Mike Bell as leader of this group.

- Do we need to take actions for improving the representation of tidal currents and internal tides in NEMO?(Julien Le Sommer)

Should we envisage development of explicit tides, tidal currents and internal tides in NEMO (global tide modelling)?

Comments of other institutions of the consortium: Met-Office is interested, Mercator already discusses it but will depend on COPPER results. For NOC? it will be later on. INGV is not focused on this question.

Open general discussion and answer the questions:

Advices of Developer's Committee on work done of 1st semester 2016

Advices of Developer's Committee on work scheduled of 2nd semester 2016

Organising update of the NEMO Development Strategy document

The first version of NEMO Development Strategy document, released in June 2014, is available here.

As confirmed by NEMO Steering Committee during its meeting in March 2016, we schedule an update of this document for first semester 2017.

This document is expected to describe an up-to-date perspective for NEMO development over the coming 5 to 10 years, including:

- Points on which the consensus is reached within the community, list of developments to be scheduled during next years
- Points to be discussed further to find consensus, and suggested paths to get here

In order to build the updated version of this document, a meeting of an "Enlarged Developer's Committee" is expected to be organised by C. Lévy with Developer's Committee in March 2017.

Previous experience in 2013 has shown that it took one year to build the document. (For more informations, see <http://www.nemo-ocean.eu/About->

NEMO/News/Identify-main-development-streams-for-the-future and <https://forge.ipsl.jussieu.fr/nemo/wiki/2013WP/EnlargedDevComJune2013>).

It should be a little faster now that we have a first version of it, but still, we need to define the appropriate methodology to build this new version (updates so as new items if relevant). From past experience, the meeting needs to be prepared by identifying very clearly the appropriate questions to be addressed and answered during the meeting.

Now during our meeting:

List the summary of subject/chapters to discuss, using existing document as "first guess", so as inputs sent by Steering Committee (no inputs received) and System Team

For each subject/chapter choose the expert(s) to prepare and lead the discussions during the meeting in March 2017, so as to write the corresponding chapter of the document.

After discussion, the following table is finalised:

List of chapters : existing ones in the 2014 version and new ones	Reviewer(s) as listed end 2015	Expert(s) to lead discussions and writing of the chapter
Chapter 1 - Elements of long-term strategy as defined in 2017 -> 2022	C. Lévy and writing group	C. Lévy and writing group
Chapter 2 - Target applications for NEMO by 2022.	Julien Le Sommer	Julien Le Sommer
Chapter 3 - Future evolutions of NEMO ocean kernel.	Mike Bell and Gurvan Madec	Mike Bell
Chapter 4 – Ocean dynamics component of NEMO (including state of the art on subgridscale parametrisations and on tides, see above)	Julien Le Sommer	Julien Le Sommer
Chapter 5 – Toward locally higher effective resolution: AGRIF	Jérôme Chanut	Jérôme Chanut
Chapter 6 - The assimilation component of NEMO	Pierre-Antoine Bouttier and Dan Lea	Pierre-Antoine Bouttier and Dan Lea
Chapter 7 - The ice components of NEMO	Ed Blockley and Martin Vancoppenolle	Ed Blockley and Martin Vancoppenolle
Chapter 8 - The biogeochemical component of NEMO: TOP and its interface	Olivier Aumont and Tomas Lovato	Olivier Aumont and Tomas Lovato
Chapter 9 - NEMO	Andrew Coward	Andrew Coward

validation and range of user support (including user interface to build configurations, and Configuration Manager)
Chapters to be added:

Surface Boundary Conditions, including air-sea interface, atmosphere boundary layer and wave coupling

Laurent Brodeau

July to September 2016:

- Experts identified in the table above to build the preliminary list of questions to discuss (on a wiki page, to be created), and the list of possible contributors

September 2016:

- Comments and additions of these documents by Developer's Committee members
- Developer's Committee to suggest list of participants for the meeting

October 2016: Agenda and announcement of the meeting in March 2017

December 2016: During Developer's Committee meeting, finalize organisation of Development Strategy meeting

January to March 2017: Experts listed in table above to draft their chapter

March 2017: Development Strategy meeting

March to June 2017: Writing and release of new version of Development Strategy document and endorsement from Steering Committee

June 2017: Publication of updated NEMO Development Strategy document

END of the meeting

Participants:

Name	Institution	Role: External expert, Consortium expert, Invitee, working group leader, System Team	Connected from (add city and location to facilitate gathering of neighbours, see below)
Claire Lévy	CNRS	System Team - NEMO Project Manager	Paris - Jussieu - LOCEAN - 45-55 4ème étage
Helene Hewitt	Met Office	Consortium expert	Exeter, E2-2
Laurent Brodeau	EC-Earth	External expert "coupled"	Stockholm
Olivier Aumont	CNRS	External expert	Paris
Julien Le Sommer	CNRS	Consortium expert	Grenoble

Pierre-Antoine Bouttier	CNRS	System Team - Data Assimilation working group leader	Grenoble
Emanuela Clementi	INGV	System Team - INGV officer - Wave Working Group leader	Bologna
Stefania Ciliberti	CMCC	System Team - Configuration Manager Working Group leader	Lecce
Tim Graham	Met Office	System Team - Met Office officer	Exeter
Clement Bricaud	Mercator	System Team - Mercator NEMO officer	Toulouse (Mercator)
Andrew Coward	NOC	System Team - NOC NEMO officer	Southampton
Tomas Lovato	CMCC	System Team	Bologna
Gelsomina Mattia	INGV	System Team	Bologna
Christian Ethé	CNRS	System Team	Paris
Nicolas Martin	CNRS	System Team	Paris
Damiano Del Rosso	INGV	System Team	
Martin Vancoppenolle	CNRS	System Team	Paris
Jérôme Chanut	Mercator	System Team	Toulouse

Excused: D. Marshall, S. Flavoni, R. Benshila, F. Dupont, T. Fichefet, L. Debreu
Absentees: D. Iovino, J.Holt, A. Vidard, J.M. Molines, Y. Drillet, P.G. Fogli, J.
Hirschi, G. Madec