

title**7December2016****body****NEMO Developer's Committee meeting - 7-8
December 2016 in Paris**

Location: Paris - UPMC - 4 place Jussieu - LOCEAN - Couloir 45-55 4th floor

Meeting room will be open from 9:00 am on Wednesday.

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

Minutes of the meeting:***Overview of work done in 2016 (A. Coward)***

Additional information, in 2016, two important events also took place:

- The NEMO Consortium has build the H2020 COPPER project during the first three months of the year. Although this projects has not been funded, some useful conclusions should be drawn from this experience;
- NCAR has send a Request for Information to all major ocean models in the world, including NEMO. The positive feedbacks sent by NCAR on NEMO (see link to answers and recommendations at NCAR for their future ocean model: <https://www2.cesm.ucar.edu/working-groups/fomwg/responses>) is rewarding and could draw some interesting paths for the future.

Discussion:

The Developer's Committee acknowledges the work done, so as its presentation from A. Coward. It is noted that the "simplification" work in 2016 is a great step.

Brief reports of working groups:by working group leaders: update of informations given last June and relation with 2017 workplan:

Robustness and test cases (S. Flavoni)
AGRIF ()

Wave coupling (E. Clementi)

HPC (T. Graham)
 Data Assimilation (D. Lea)
 Configuration Manager (S. Ciliberti)
 Sea-ice (C. Rousset)
 Presentation of new working group
 proposed on eddy parametrisation (M.
 Bell)
 Presentation of the proposed NEMO-TOP
 discussion group (O. Aumont)

Build updated list of Working Groups, their main tasks and their members:

- **Robustness and test cases:** No changes in group membership. Work done in 2016 now allows easy addition of new test cases for all NEMO users. The tools and location for adding and sharing these new tests cases should be discussed by Working Group in 2017.
- **AGRIF:** Leader of group changed from Laurent Debreu to Jérôme Chanut. It is suggested for the WG to discuss the future of Nesting tools regarding the new application interface of NEMO: first looking at what could/should be done in Configuration Manager , and possibly add the remaining parts into the Nesting Tools. Concerning the priorities, the compatibility of AGRIF with vvl, AGRIF on the vertical dimension and the HPC work allowing distribution of zooms on different processes are seen as the highest priorities for 2017.
- **Wave coupling:** No changes in group membership. Developer's Committee suggests that these discussions should take place in Chapter 9 (air sea interactions), and in target applications of update of NEMO Development Strategy document
- **HPC:** No changes in group membership. The working group is indeed elaborating some strategy. The choices need various testing to be finalised. This section is clearly missing manpower now (probably in relation with the H2020 COPPER project not being funded). Information since the meeting: Intel parallel computing centre proposal has not been funded so NEMO won't be getting any resource from that either.
- **Data assimilation:** No changes in group membership. Following the discussion of the reborn working group, a new name is proposed: Data assimilation and ensemble techniques. Developer's Committee also suggest for coherency to move discussion on stochastic parametrisation techniques from this group to the new eddy paramtrisation Working group (see below)
- **Configuration Manager:** No changes in group membership. As proposed by working group, first recommendations for the architecture of v0.1 expected for

2017.

- **Sea-ice:** No changes in group membership. As proposed by working group, the objective for 2017 is to elaborate a strategy for sea-ice modelling in Europe with NEMO. A clearer timing is expected from the Working group.
- **New working group on eddy parametrisation:** Proposed goals are to exchange on new science results, and clarify which schemes we want in NEMO. The methodology to transfer from science to model should be elaborated (building blocks...). Controlling energy routes should be taken in account. List of members of Working group: M. Bell (leader), D. Marshall, L. Zanna, J. Le Sommer, J. Kjellsson, J. Maddison, H. Hewitt, D. Storkey, G. Madec, C. Lévy, G. Nurser. Developer's Committee approves creation of this new working group. Its name is still under discussion, final name to be confirmed during next meeting.
- **New discussion group on NEMO-TOP:** The interface of NEMO dynamics with biogeochemistry has been fully revisited in 2016, allowing much more modularity and a clarified vision of the interface. Following this important step, a discussion group is proposed to Discuss/define the interfaces between ocean dynamics and TOP, and identify common modules that could be shared between the different biogeochemical models (optics, chemistry, sinking,) Proposed members of the discussion group: Tomas Lovato (possible leader), Olivier Aumont(possible leader), Christian Ethé, Andrew Yool, a Mercator representative (tbd), Laurent Bopp. Developer's Committee approves the creation if this new group. A precise list of questions to be addressed by the group is expected for next meeting.

Overview of proposed 2017 workplan (A. Coward) and discussion

The 2017 workplan is presented by A. Coward, in addition to the detailed information available here . It is noted that there will be no official release of NEMO in 2017 (i.e. no 3_8 announced in 2017), but for the developers who would need it, an unstable beta release will be announced mid 2017 for testing purposes, based on the latest version build during 2016 Merge Party.

The 2017 workplan proposal is approved by Developer's Committee.

Update of NEMO Development Strategy document:

Following [decisions+of+last+meeting+](#) agenda and organisation of update is discussed, including the meeting of the "Enlarged Developer's Committee" to be scheduled (see below):

- Mike Bell accepts overall responsibility for organising the update of the NEMO Development Strategy including the meeting to discuss it. Mike will delegate a lot of practical tasks to Claire Lévy.
- Responsibilities of lead authors for each chapter are: preparing the discussion at the meeting; leading the discussion at the meeting; ensuring the chapter is

written in a timely manner.

Lead authors for chapters are the first ones mentioned below. Other names are expected to provide support. This group will form the organising Committee of the meeting

- a. Intro: Claire Levy, Mike Bell
- b. Target applications: Julien le Sommer
- c. HPC performance: Tim Graham, Silvia Mocavero
- d. Kernel: Mike Bell, Gurvan Madec
- e. Dynamics: Julien le Sommer, David Marshall, Mike Bell
- f. AGRIF: Jerome Chanut and AGRIF WG
- g. Assimilation, ensemble and TAM: tbd
- h. Ice: Martin Vancoppenolle, Ed Blockley
- i. Air-sea interface: Laurent Brodeau, Gurvan Madec
- j. Biogeochemistry: Tomas Lovato, Olivier Aumont
- k. Validation and user support: Andrew Coward, Stefania Ciliberti
 - A list of key invitees will be proposed by this group of lead authors as soon as possible (to be submitted to Steering Committee for approval and travel funds in January)
 - Meeting date and location: The week of 3-7 April 2017 was agreed at the Developers' Committee meeting. We are waiting for confirmation that BSC will host.
 - Target applications: we need a 1-2 page update from each of the Consortium members on their target applications (and any particular concerns e.g. need for TAM). We need this by 15 Feb to inform the preparation of other chapters prior to the meeting.
 - Agenda for meeting: a draft agenda will be written. This should focus on the main points that will be discussed at the meeting and the time allocated to them.
 - The meeting is not open to the whole community. Aside from Consortium members, the interests of other institutions might be interesting to take in account: some formal representatives could be invited to the meeting.

Conclusions of Developer's Committee:

The Developer's Committee is happy with the work achieved in 2016, which is very much in line with the NEMO strategy. Indeed, as shown in the presentation, 2016 has been a transition year with a limited number of new functionalities implemented in NEMO, but some major reorganizations of the code in order to prepare the big changes in the dynamical core expected with NEMO 4.0. The improvement of user/application interface, now allowing easily the addition of test cases by the whole community, is seen as a major progress setting the foundations for future developments.

Concerning 2017 workplan, it is noted that there is no announced publication in GMD for 2017. This choice is perfectly understandable for a given year: 2017 may not be

relevant for such publication(s), but the NEMO Special Issue in GMD should remain as an important tool to communicate with the scientific community on the NEMO System Team's work and on NEMO developments

The working Groups have been examined and some comments and changes have been proposed (see above).

The committee approves the proposed 2017 workplan. This workplan identifies the best possible work to do with the excellent experts of the NEMO System Team. Still, the Developer's Committee notes that the manpower is undersized with the ambitions. More precisely, at the NEMO Developers' Committee meeting, there were two areas which stood out as ones in which there are particular concerns that the current staffing resources for NEMO development are probably not adequate. The areas are (1) NEMO's HPC performance; (2) the implementation of AGRIF within NEMO. The NEMO Developers' Committee recommend that the NEMO HPC and AGRIF working groups assess their highest priority tasks and the resources they require and that the NEMO Steering Committee be active in helping to secure the resources required.

Those points should be send as a message from Developer's Committee to the NEMO Steering Committee.

 Next NEMO Developer's Committee meeting : mid year (~June 2017) by videoconference. Will cover business as usual so as review of the updates of Development Strategy document.

Participants:

Name	Institution	Role: External expert, Attend diner Consortium expert, on the 7th (yes/no) Invitee, working group leader, System Team
Claire Lévy	CNRS	System Team - NEMO Project Manager yes
David Marshall	U. Oxford	External expert, working group participant (eddy parametrisation) yes (vegetarian)
Clement Bricaud	Mercator	System Team yes
Tim Graham	Met Office	System Team - Met Office officer yes
Mike Bell	Met Office	Consortium Expert, leader of HPC W.G. Yes
Gurvan Madec	CNRS/NOC	System Team - Scientific Leader yes
Simona Flavoni	CNRS	System Team - CNRS Officer no

Andrew Coward	NOC	System Team - NERC Officer	yes
Jean-Marc Molines	CNRS	External Expert - High resolution	yes
Laurent Brodeau	BSC	External Expert - Coupled	yes
Francesco Trotta	UNIBO	Consortium expert for INGV	
Julien Le Sommer	CNRS	Consortium expert for CNRS	
Martin Vancoppenolle	CNRS	System Team - WG leader Sea Ice	Yes
Clément Rousset	CNRS	System Team	no
Nicolas Martin	CNRS	System Team	yes
Olivier Aumont	CNRS	External expert - TOP	No

Absentees: A. Vidard (external expert), T. Fichet (external expert), H. Hewitt (Met Office consortium expert), L. Debreu (leader of AGRIF WG), J. Hirschi (NOC consortium expert), J. Holt (external expert), F. Dupont (external expert), R. Benshila (CNRS consortium expert)

Please add your information below if you intend to connect by videoconference

Name	Role	Connection from	Date(s)
Dorotea Iovino	System Team - CMCC Officer	Bologna (Italy)	7 - 8
Pier Giuseppe Fogli	Consortium expert for CMCC	Bologna (Italy)	7
Emanuela Clementi	Wave WG leader - INGV Officer	Bologna (Italy)	7
Stefania Ciliberti	Conf Manager WG leader	Lecce (Italy)	7 - 8