SECOND DRAFT of Issues raised at the NEMO NDC Meeting Part 1: Zoom – Wed 30th June 2021

Participants (25):

Olivier Aumont
Mike Bell
Rachid Benshila
Ed Blockley
Miguel Castrillo
Jérôme Chanut
Stefania Ciliberti
Andrew Coward
Fred Dupont
Italo Epicoco
Helene Hewitt
Joel Hirschi
Dorotea Iovino
Daniel Lea
Julien Le Sommer
Claire Lévy
Tomas Lovato
Gurvan Madec
Nicolas MARTIN
Sebastien Masson
Jean-Marc Molines
Paolo Oddo (CMRE)
Guillaume Samson
Joanna Staneva (HEREON)
Martin Vancoppenolle
Amy Young

Apologies: David Marshall, Bablu Sinha

[We usually try to present minutes as agreements. It's not worth re-organising that way. Naming the speakers sometimes helps the reader to interpret the question.]

1. Summary Report from Claire:
    a. Q (Amy Y) – will those who expressed interest in being beta testers at DRAKKAR be contacted directly? Julien and Romain are following up with potential testers this week.
    b. Q (Claire?) – what is the latest status on AGRIF load balancing? Full capability not yet implemented in code – it should be ready for the end of the year but introducing it then would go against the policy of not adding major new features (bug fixes only). Note that this task was reported as completed in the IMMERSE (month 30) report. The AGRIF capability was delayed due to COVID and there was an agreement to push it back from month 24 to month 30 (i.e. June). Claire – we may follow up with an r4.2.1 mid-2022. Julien – going forward we will do more regular merges, more regular releases. **Action: Mike, Julien, Italo, Claire and Jerome to decide what to do on AGRIF balancing code.**
    c. Q (Paolo O) – could the r4.2 developments be presented as a function of the Strategy? Mike/Julien/Claire replied that we do try to do that. The responsibility for ensuring developments are aligned with the 4 year strategy document lies with the WG leads. Both WG leads and the consortium experts are asked to review and approve the Workplan at the EOY meeting (as was done in Nov 2020 stocktake meeting). Friday's meeting will address the next 4-year strategy.
2. Presentations from WG leads
    a. SI3 (Ed B and Martin V)
        i. Q (Mike) – how should SI-TOOL be dealt with moving forward? SI-TOOL is a CMEMS python tool currently stored on Zenodo. General comments: this shouldn't be included directly in the NEMO repo tools/ directory but it would be good to have some way of linking it. Claire suggested that it should be hosted by CMEMS. Andrew/Claire agreed that NEMO ST should not be responsible for it. **Action Andrew**: to consider SI-TOOL in the Tools section of the new Strategy.

ii. General progress update from Ed – things have been difficult this year, with issues compounded by COVID and ARCHER2. The SI WG is delivering for several large projects. While individual projects are understanding of the need to extend deadlines, it has been hard to coordinate between them all (IS-ENES3, IMMERSE).
iii. Q (Andrew C) – what will be the outcome of the rheology intercomparison? While the IMMERSE deliverable will be mainly focused on high resolution applications, the intercomparison project intends to provide recommendations for the best SI rheologies across a range of resolutions/coupling (ORCA1 to ORCA36)
iv. Q (Ed B) – Can we create a better dialogue between DA and SI? **Action**: **Dan** and **Ed** to discuss.
v. Q (Helene H) – What is the latest on running NEMO and SI3 as separate executables? Technical issues (including OASIS capabilities/specific coupling set-ups) need to be addressed – [Post meeting note: Ed B an Helene H agreed there is no specific technical issue here relating to SI3].
vi. Q (Joanna S) – Interaction between SI and Waves groups? Martin V – progress/better communciation needed – between members of SI and ASI WGs. **Action**: Martin or Ed and Guillaume to discuss need/options for links.
vii. *** General question for Friday – how can we best work together on "cross-cutting issues" [Mike: One size does not fit all: Experts in the different fields need to talk to each other on a 1-2-1 basis. Conclusions need to be discussed at the WG meetings.]

b. TOP (Tomas L)
i. Comment (Olivier A) – the iron developments from Renaud Person may be generalised for other BGC tracers. This raises the question as to whether we could/should have an equivalent of TOP for SI3.
ii. Q (Joanna S) – can we incorporate FABM? Extensive discussion on this point. The key FABM developer has left PML but is still working on FABM and committed to developing it as an open source code. There may be potential to have a NEMO/XIOS-style collaboration relationship. Julien: two criteria for such a relationship a) is there a clear strategy for development (yes?) b) are they willing to work with NEMO developers (TBC?). Olivier said that it would be a lot of work to set up and maintain a FABM interface. This issue will need to be considered in the new Strategy.
iii. A new test is being considered to validate the TOP interface – possibly some unit testing as well – **Action**: **Tomas** and **Mike** to discuss this with Simon and Sibylle.

c. AGRIF (Jerome C)
i. The aims in the strategy have mainly been achieved. BGC coarsening could be achieved based on existing developments. RK3 implementation is underway.
ii. Two key questions to be addressed. First new developments tend to break AGRIF; developers need to understand AGRIF – is training needed? Second should we develop a full AGRIF-based multi-resolution capability? The Steering Committee members have been asked this question (it was raised at the previous NDC). Second issue is for the Strategy. **What to do about**

first issue? [Post meeting note: the first issue should also be considered in the new Strategy]

d. DA (Dan L)
    i. Q (Paolo O) – from Zoom chat, not answered: should NEMOVAR be included within NEMO? [Mike: The answer is no. They are maintained by different consortia.]
    ii. General comment from Claire/Dan – it would be good to get a wider team contributing to this group.
e. HPC (Italo E)
    i. key question currently under discussion – should mixed precision be supported moving forward?
    ii. General comment (Seb M) – while several HPC developments have now been completed and merged into the code, there is still a significant amount of work to be done in consolidating/debugging/validating these developments
    iii. General comment – new HPC developments do make the code a little harder to read for new developers/those external to the NEMO ST
f. V&V (Claire L)
    i. General comment (Mike B) – as captured in the preceding presentations – it is crucial that we steadily improve our V&V process to ensure we are developing as robust a code as possible.