



# **NEMO Developers' Committee**

## **Discussion of structure & timetable for**

### **NEMO Development Strategy 2022-2026**

#### **June 2021**

**Mike Bell, Dorotea Iovino, Claire Levy, Julien le Sommer (NDCPT)**



# Contents

- Initial draft of section headings based on
  - previous chapters of strategy
  - current Working Groups
  - Discussion within NDCPT (Claire, Dorotea, Julien, Mike)
- Brief notes on important issues within sections & authors
- Issues with structure that need to be resolved
  - Important topics that are missing
  - Awkward overlaps between topics
  - Grouping sections into chapters
- Draft Timetable

# Sections for NDS 2022 (1)

Section	Issue(s)	Author 1	Author 2
Stakeholder requirements	Predictions*; research community	Hewitt	Le Sommer, Sinha (?)
HPC (E)	DSLs, GPUs	Epicoco	Porter, Masson
Kernel (S)	GVC, ...	Bell	Madec, Lemarie, Debreu, Chanut?
AGRIF (S/E)	Scope/ambition	Chanut	Debreu, Benshila
Dynamics (S)	Demos	Le Sommer	Deshayes (?)
	Eddy closure	Shao	C. Wilson
	Tides	Dupont	Chanut,
Air-sea Interaction (S)	ABL, waves, KPP or GLS?	Samson	Clementi, Nurser, Masson

\* Predictions from days to decades ahead, re-analyses & climate simulations

# Sections for NDS 2022 (2)

Section	Issue(s)	Author 1	Author 2
Sea-ice (S)		Blockley	Vancoppenolle
Ice shelves (S)		Mathiot	Holland, ...
Coupling I/F			
BGC I/F		Lovato	Aumont
Data I/F		Lea	Ruggiero, Martin, Storto?
Machine learning I/F	I/F or S?	Le Sommer	Storto, Shao
Ensemble I/F			
I/O I/F			
V&V (E)	Validation scope	Bell	Levy, Muller, ...
Tools (E)	Scope	Coward?	Iovino, Chanut, Martin
NEMO Carbon footprint	Evaluation & plans for adaptation	Levy	Chanut(?)

# Some details on issues within sections

- Stakeholder requirements: Last time, NEMO Consortium members provided responses to specific questions. Research community requirements include those of university groups
- HPCs: Use of DSL pre-processors to achieve flexibility of deployment
- Kernel: Approach to generalised vertical coordinates
- AGRIF: Level of ambition for a full multi-resolution AGRIF capability
- Data interface – greater scientific use of obs operator; interface to JEDI through derived types for geometry and state; tangent & adjoint codes
- ...

# Issues with structure to be resolved

Missing      Overlaps      Chapters      Scope

- Approach to code maintenance/development process
- The interface to validation against observations is weak
- Machine learning relates to many other sections (cross-cutting)
- Validation cuts across several chapters (demos, V&V, data interface)
- The grouping of sections needs further thought. Requirements, Engineering, Science & Interface chapters?
- The scope of tools tbd (to build configurations, SETTE, web platforms)
- Is sharing of information on configurations within scope?

# Draft timetable

- July 2021: Firm up on sections, authors & chapters
- July 2021: Agree approach/questions on requirements
- October 2021: First draft identifying main issues in each section
- November 2021: Review of first draft by SAC
- May 2022: First full draft of sections
- June 2022: Meeting to discuss the first full draft (SAC members invited)
- July 2022: Feedback from the SAC
- November 2022: Final version