

REQUEST FOR ADDITIONAL RESOURCES IN THE CURRENT YEAR FOR AN EXISTING SPECIAL PROJECT

MEMBER STATE: FRANCE.....

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Project title: Improvement of the barotropic tide in the 1/12° global ocean NEMO model

Project account: **SPFRMORE**

Additional computer resources requested for	2019
High Performance Computing Facility (units)	3,000,000
Data storage capacity (total) (Gbytes)	0

Continue overleaf

¹ The Principal Investigator is the contact person for this Special Project
Nov 2015

Technical reasons and scientific justifications why additional resources are needed

This project is based on the global configuration at $1/12^\circ$ named MFC-GLO used in CMEMS. It is a time consuming configuration especially since we explicitly solve the barotropic tides.

The computational cost of the ORCA012 computational cost is about 4,000,000 SBU per year and our study requires to represent the evolution for at least 1 month for each test. We made just a bit more than 3 months of simulation reaching more than 1,000,000 SBU and consuming our initial quota.

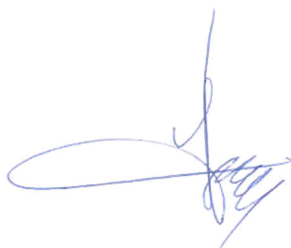
We have started to use the cheaper ORCA025 configuration for some tests, but this can only be done for part of our tests and we still need to run the ORCA12 configuration to finalize our tests. Indeed, some problems still occur when a lot of memory is needed for the online harmonic analysis (computing and writing) with the ORCA12 configuration. Today the XIOS software used for the parallel I/O failed with such huge configuration. Consequently, a new solution had to be found in order to not use XIOS during the online harmonic analysis.

In order to test new solutions with the ORCA12 configuration, we need to run at least 9 additional months split in 1 month simulation that gives approximatively 3,000,000 additional SBU.

We hope it will be possible to extend our quota.

Many thanks in advance for your help and your answer.

With my very best regards,



Yves Morel