SPECIAL PROJECT PROGRESS REPORT

All the following mandatory information needs to be provided. The length should *reflect the complexity and duration* of the project.

Reporting year	2022
Project Title:	CASCADE (Coupled regional coAStal oCeAn moDel Ensembles)
Computer Project Account:	**SPGRVER2**
Principal Investigator(s):	Vassilios D. Vervatis (1), Pierre De Mey-Frémaux (2)
Affiliation:	(1) National Kapodistrian University of Athens (UoA). (2) Laboratoire d'Etudes en Géophysique et Océanographie Spatiales (LEGOS).
Name of ECMWF scientist(s) collaborating to the project (if applicable)	Sarantis Sofianos (1), Nadia Ayoub (2).
Start date of the project:	05/04/2022
Expected end date:	31/12/2022

Computer resources allocated/used for the current year and the previous one
(if applicable)
Please answer for all project resources

		Previous year		Current year	
		Allocated	Used	Allocated	Used
High Performance Computing Facility	(MSBU)	-	-	2,5	-
Data storage capacity	(TB)	-	-	2,5	-

Summary of project objectives (10 lines max)

The requested resources in this ECMWF Special Project will be used to support the R&D activities of the University of Athens (Greece) and LEGOS/CNRS (France) teams, in a joint research Copernicus project (named MULTICAST) submitted on March 2022 and recently awarded in June 2022, within the CMEMS Service Evolution framework (https://www.mercator-ocean.eu/en/tender51/). This ECMWF SP and the MULTICAST project aim at strengthening CMEMS in the areas of ocean uncertainty modelling, empirical ensemble consistency verification and multigrid ensemble data assimilation. Our work will be based on the development of an ensemble ocean data assimilation system, using two-way coupled high-resolution parent-child nested domains for the Bay of Biscay, as a case study for the CMEMS SE and the future capabilities of CMEMS Modelling and Forecasting Centers (MFCs).

Summary of problems encountered (10 lines max)

n/a

Summary of plans for the continuation of the project (10 lines max)

This ECMWF SP is meant to support the R&D activities of a recently awarded Copernicus project (named MULTICAST) for the next two years starting on July, 2022 and ending on July, 2024. When we submitted the ECMWF SP back on March 2022, we made a moderate (late) request only for the current year 2022, anticipating that in case our Copernicus project is selected (this is now a fact and the Kick-off meeting is on July 5) we will be able to continue the SP also for the years 2023 and 2024. Therefore, we intend in the following months to submit a (late) request for the continuation of the SP.

List of publications/reports from the project with complete references

n/a

Summary of results

If submitted **during the first project year**, please summarise the results achieved during the period from the project start to June of the current year. A few paragraphs might be sufficient. If submitted **during the second project year**, this summary should be more detailed and cover the period from the project start. The length, at most 8 pages, should reflect the complexity of the project. Alternatively, it could be replaced by a short summary plus an existing scientific report on the project attached to this document. If submitted **during the third project year**, please summarise the results achieved during the period from July of the previous year to June of the current year. A few paragraphs might be sufficient.

As stated above, the resources will be allocated for a recently awarded Copernicus project. The project will start officially in a few days, when we also expect to start using the available SP resources. Once we have the first results of the proposed work, we will be able to assess the appropriate storage and allocation resources for the next two years. In the meantime, some modest resources of CASCADE are being used to transition the codes from their usage in a previous SP (https://www.ecmwf.int/en/research/special-projects/spgrver2-2018) to their use in MUTICAST.