

# HORIZON 2020 IMMERSE

(Grant Agreement 821926)

Improving Models for Marine EnviRonment

SErvices Deliverable D2.2 Public

#### 1. Introduction and context

While the development of the NEMO ocean model code-base has long been centralized and coordinated by the NEMO consortium, the specific configuration of the model code-base used for setting up a modelling system is generally left to the users. There is therefore no centralized distribution of NEMO configurations beyond the reference configurations which are distributed as exemples with the NEMO code-base.

SIMSAR defines a protocol for users (inc. CMEMS MFCs) to exchange the information required for reproducing a NEMO experiment across different groups. The ambition of this tool is to improve the reproducibility of NEMO experiments by allowing users to exchange their model configurations effortlessly. With this approach, we hope to accelerate CMEMS service evolution in the future.

### 2. Scope of NEMO-SIMSAR

Ocean model simulations that are based on the NEMO ocean modelling framework (nemo-ocean.eu) consists of several components:

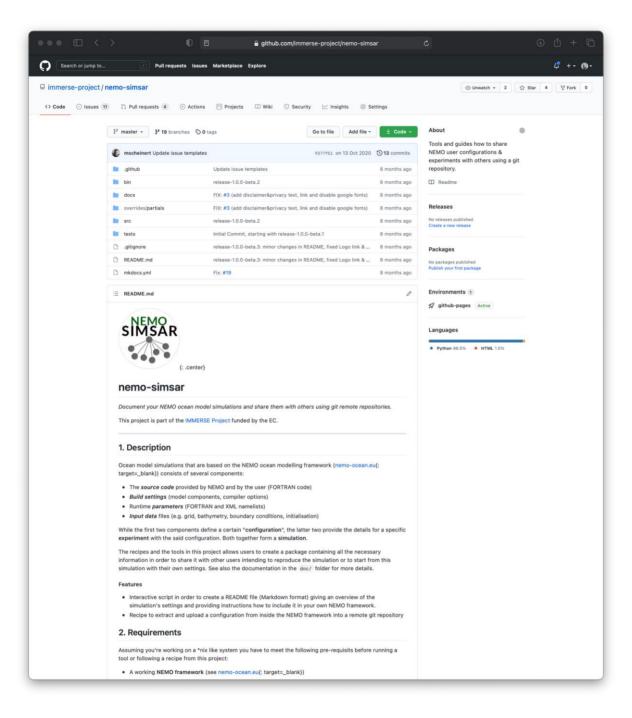
- The source code provided by NEMO and by the user (FORTRAN code)
- Build settings (model components, compiler options)
- Runtime parameters (FORTRAN and XML namelists)
- Input data files (e.g. grid, bathymetry, boundary conditions, initialisation)

While the first two components define a certain "configuration", the latter two provide the details for a specific experiment with the said configuration. Both together form a simulation.

SIMSAR allows users to create a package containing all the necessary information in order to share it with other users intending to reproduce the simulation or to start from this simulation with their own settings.

#### 3. NEMO-SIMSAR code

The source code for SIMSAR is available at: https://github.com/immerse-project/nemo-simsar



## 4. Documentation

A comprehensive documentation, including instructions and examples is available on IMMERSE project website at : <a href="https://immerse-ocean.eu/nemo-simsar/">https://immerse-ocean.eu/nemo-simsar/</a>

