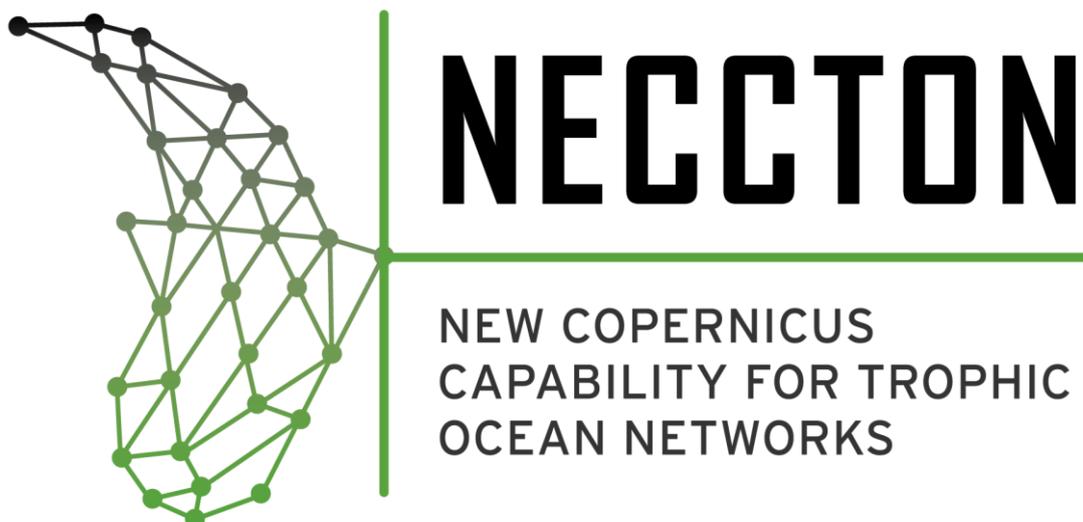


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Deliverable 4.1

Description and guideline on the NECCTON-algo GitHub organization

Deliverable Contributors:	Name	Organisation	Role / Title
Deliverable Leader	Julien Brajard	NERSC	Task Leader
Contributing Author(s)	Alexander Barth	ULiege	WP4 co-lead
	Sakina-Dorothee Ayata	SU/CNRS	WP4 contributor
	Frederica Barga	CNR	WP4 contributor
	Paolo Lazzari	OGS	WP4 contributor
	David Greenberg	Hereon	WP4 contributor
Reviewer(s)	Michael Wathen	PML	Reviewer
Final review and approval	Stefano Ciavatta	MOi	Project Coordinator



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1. Executive Summary

In the [NECCTON](#) project, and in WP4, algorithms based on machine learning and data assimilation will be developed (T4.2 to T4.4). The algorithms will be shared internally and externally to the project. To facilitate the code sharing and the algorithm, a GitHub organization has been created here: <https://github.com/neccton-algo>.

The guideline is described in the GitHub organization website and recalled in section 3 of this document.

2. Scope

Deliverable 4.1 is concerned with task 4.1 - “Description and guideline on the NECCTON-algo GitHub organization”.

The deliverable is a Github organization with public availability on GitHub: <https://github.com/neccton-algo>. The special repository `.github` (<https://github.com/neccton-algo/.github>) contains the guidelines for uploading a new algorithm within the project NECCTON. This guideline aims at facilitating code sharing collaboration in work package 4, but the GitHub organization is open to be used by all NECCTON project participants.

3. Description of the guideline

The guideline for uploading an algorithm to the GitHub repository is indicated here: <https://github.com/neccton-algo/.github/blob/main/profile/README.md>

The main parts of the guidelines are summarized below:

How to add a repository?

Requirements to add a repository to the organization <https://github.com/neccton-algo>:

- Be a member of the [NECCTON](#) project
- Having a GitHub account with the rights on the GitHub organization (ask access to the organization owner [here](#)).
- Put the mandatory files in the repository as described in the section “Content of a repository”,
- Follow the recommendations as much as possible (see section Recommendations)
- Complete the table here: <https://github.com/neccton-algo/.github/blob/main/profile/README.md>

Content of a repository

A [GitHub repository](#) of the NECCTON GitHub organization contains the following file:

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- A LICENCE file: NECCTON encourages the use of open-source licenses (<https://docs.github.com/en/communities/setting-up-your-project-for-healthy-contributions/adding-a-license-to-a-repository>)
- A CODEOWNERS file: indicates the main contacts for the repository. See [here](#) for more details.
- A README file: see the minimum requirement for the README file [here](#)
- One or several Jupyter notebooks to demonstrate the algorithm and the baseline. The baseline corresponds to an existing algorithm or a minimal solution (e.g. linear regression) that the algorithm is expected to outperform.

README

The README file contains a description for:

- the data source
- the baseline (or a link to the jupyter notebook of the baseline)
- the metrics used to validate the output(s) of the algorithm
- the list of dependencies (name of the dependency and full version number used) needed to use the code, and language-specific tools to install the dependencies (recommended), e.g. by adding a requirements.txt file to the repository.
- the documentation (e.g., via a link). It should allow a potential user to understand the code and reuse it. The documentation will be available at the M36 of the NECCTON project.
- Citations and links for NECCTON publications using or introducing the code, when applicable.

Recommendations

In addition to the points mentioned above, it is strongly suggested to:

- Use a data API for easy access to the data when testing the code
- Make use of GitHub actions to run unit tests (e.g. for Python: <https://docs.python.org/3/library/unittest.html>) when pushing the code on the repository (or when merging with the main branch). See [here](#) for documentation of GitHub actions.
- Use language specific tools (e.g. conda, pipenv) to define the running environment.
- Use the latest best coding practices. For more details, see here: https://github.com/neccton-algo/.github/blob/main/docs/moi_archive/best_practices.md
- Upload code to the organization code that is specific to the NECCTON project. Other generic tools can be hosted elsewhere.