

Creating an online overview of models developed and used within Copernicus

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Objectives

Whilst a lot of models have been developed at and used in Copernicus, a comprehensive overview of these models is currently lacking. An online overview of the models, containing a short description of the models and access to key datasets, will be developed to mitigate this. This will have multiple advantages. First, it can facilitate logical and creative collaboration between different researchers, both within and outside of Copernicus. This speeds up scientific advancement in specific topics, and improves the position of Copernicus in the broader scientific community. Secondly, by having the models and data easily accessible, they can more readily be used within education. This will help students understand current modelling methods, and allows them to eventually build further on the models currently developed and used by Copernicus.

Four components of the online overview of models

An overview of the utilized models will be developed on the Copernicus website. To achieve this, four components will be developed. Firstly, an entrance page will be developed that contains an overview of all utilized models in an appealing way. Secondly, a comprehensive explanation page for each model will be developed to allow users to learn more about models of interest. Thirdly, to give users a more complete grasp of what each model produces, for each model a page will be created containing a visualization of the output data. Finally, to foster connection with the broader research community the models will also obtain a Dataverse entry, the standard UU data repository¹.

1. Entrance page on website:

On the Copernicus website, an illuminating overview of all participating models will be given. The design of the entrance page will depend on the number of models partaking and on further discussions amongst the core development team and with participating models. Through the entrance page visitors can navigate to a specific Model page.

2. Model page:

Within every model page following will be present.

1. Name
2. Description
3. Contact details of model developers/users within Copernicus
4. And, if applicable:
 - a. Link to a file, paper or online reference containing a detailed model description
 - b. Link to input data
 - c. Link to model output data
 - d. Link to a data visualization page

¹ <https://www.uu.nl/en/research/research-data-management/tools-services/tools-for-storing-and-managing-data/data-repository-finder/the-research-data-repository-dataversenl>

3. Data visualization page:

The data visualization page will allow users to investigate the most relevant output data of the model. The design of this data visualisation page will depend on the type of data that is produced by the model (e.g. time series, spatial) and on conversations with participating models to determine the most suitable approach.

4. Dataverse overview page:

Within Dataverse, all the utilized models and corresponding data will be stored in a dedicated Copernicus page. The advantage is that users can scroll through a list of all models and pick ones of interest by making use of the integrated search function. Each model will also have a page in this environment, automatically generated from the earlier 'Model page'.

Activities

Every step shall be done by Moos Castelijns, with regular feedback and support from Oreane Edelenbosch and Stefanie Lutz.

The first step is to gather who (i.e. which modellers/model users) would like to partake in this project. This will be done through a **google form**. Here, respondents are asked questions regarding:

1. Do they have a model they want in the overview?
2. What type of data do they want to display?
3. Are they open for an interview on further collaboration?

The second step (executed in parallel with the first step) is to **develop initial ideas** regarding each of the four components: What will the Copernicus overview look like, what will be on each model page, how will data visualization be done and how will the Dataverse entries be created. This will be done through sketches of actual webpages in [figma](#), sketching relationships between components in [tldraw](#) and investigating the different technical components. For the visual elements an external designer may be contacted if this is judged to be of added benefit.

One key aspect that will be investigated is whether it is feasible to create a form asking for all information regarding a particular model and then automatically adding this model to all the components in the overview. The development is technically complex but would hugely improve the effort to keep updating the overview and adding new models in the future to the overview.

Further technical details like where can the data be stored (for which the data stewards will be of help), and how to get access to necessary URL endpoints will also be investigated.

The third step is to **interview the interested survey respondents**. The first two interviews will be conducted by Moos and Oreane or Stefanie, and the later ones only by Moos. The interview will follow three core components of the overview:

1. Discuss ideas regarding the Copernicus overview.
2. Ask them to deliver a description, the model and the data for the model page.
3. Discuss how to visualize the data of this model, and where/what type of data.

The fourth step requires that **decisions** are made. Firstly, the opinions of the interviewees and our own are weighted to decide on the format for the Copernicus overview. Secondly, which data types to show in what way is decided.

The fifth step is to **develop and populate the decided products/model overview**. This will either be done automated or by hand, depending upon an earlier feasibility analysis. The earlier described overview will be developed:

- The sixth step regards **finalization**. In this step, a showcase of the overview will be held with participating model developers and other interested parties. Furthermore, a documentation will be made to allow future interested parties to add to/alter the created overview. It will also be discussed and decided how the overview can be continued in the longer term (e.g., who is responsible for maintenance?; can everyone edit the website? Etc.).

[illegible]