What will we talk about?

- Digital Object Identifier: unique alphanumeric string assigned to identify content and provide a persistent link to its location on the Internet.
- GitHub: web-based hosting service for version control using git.
- ORCID: persistent digital identifier to distinguishes researchers

Zenodo: a repository to deposit scientific papers and/or research data [https://zenodo.org/]

How can we foster reproducibility?

By making data and results available and citable

What?

- Data
- Methods
- Results

Where?

- Repositories
- Journals
- Methods
- Catalogs
- Authors

Examples

- CMEMS INSTAC
- Scientific Data Earth System Science Data
- Sextant SOCIB data products
- Unique IDs

Unique identifiers for each component

- = minted on
- = identifies authors

Ocean Observation

Software tool

Dataset

Science

Publication

Is this sufficient to go from data to results?

Putting all the pieces together

To ensure reproducibility and traceability, unique identifiers (●) are attributed to:
- Datasets
- Software tools
- Authors
- Scientific results

Ideally, all the identifiers should be present in the published version of the research paper.

Acknowledgements

The work presented in this poster has been developed in the frame of SeaDataCloud–Further developing the pan-European infrastructure for marine and ocean data management, Project ID 730960 and ODIP 2–Extending the Ocean Data Interoperability Platform, Project ID: 654310.

Example 1

From observations to dataset:

The SOCIB glider toolbox is a set of MATLAB/Octave scripts to manage data collected by a glider fleet: data download, processing and figure generations.

The code development was carried out in GitHub [https://github.com/socib/glider_toolbox, credits to T. Garau and J.P. Beltrán] and was recently coupled to Zenodo.

Figure 3: Example of a glider section produced by the toolbox.

DOI: 10.5281/zenodo.836706

Example 2: the DIVA interpolation tool

1990’s: Variational Interpolation Method (Fortran 77) only 2D interpolations

2006 SeaDataNet, code refactory and set of bash scripts

2007 with ODV [https://odv.awi.de] distribution through GHER web page

2009 new modules in Fortran 90 for loops over depth and time

2012 new error calculation technique

2017 new version control system:

- Switch from SVN to git, distribution via GitHub
- Enable Diva repository in Zenodo
- Edit the different tags on GitHub to get DOI

Putting all the pieces together:

To ensure reproducibility and traceability, unique identifiers (●) are attributed to:
- Datasets
- Software tools
- Authors
- Scientific results

Ideally, all the identifiers should be present in the published version of the research paper.

Ocean Observation

Science

Software tool

Dataset

Analysis

Software tool

Publication

Figure 1: From data to tool results: all the components are identified and citable.

Figure 2: Zenodo log in, using other accounts is great feature. When linked with GitHub, Zenodo creates a DOI every time one makes a release to one of the available repositories.

We now have all the pieces to cite the code used in the research:

1. Zenodo login using ● or ●
2. Upload of software code to ● or to Zenodo
3. Generation of the ● for a given version of the code

Figure 5: Main page of DIVA software in Zenodo. Note the ORCID logo with the authors and the DOI relative to the code.

Put on social media and "cite as" options.

Figure 6: Log in GitHub to get DOI

socib_icts

GHER_ULiege

Zenodo: a repository to deposit scientific papers and/or research data

https://zenodo.org/

Download, process, and visualize SOCIB data products

Sextant

Earth System Science Data

Scientific Data

Earth Science Informatics

Geoscientific Model Development

Ocean Observation

Dataset

Analysis

Software tool

Publication

Source code, notebook

Jupyter

GitHub

Zenodo

What is this? A...