

Handling of Coring-Events in MCS, SENSORWeb and DSHIP

The field work on an ice coring event includes not only the ice coring itself but also a set of related measurements and sampling actions.



1) Field actions

- ice coring
- ice thickness measurements
- water sampling

- measurement of snow and air temperature
- snow samples (for later analysis in the lab)
- SnowMicroPen
- snow samples taken with density cutter and weighed with scales for density measurements
- snow water equivalent

2) measurements and actions performed on the core in the field

- core length
- core temperatures
- cutting of the core into segments measured with the help of a cradle

3) Analysis of the core in the lab

- density
- salinity
- nutrients
- ...

Since some of the data is rather considered meta data for the ice cores than individual data it is difficult to separate the data into distinct files.

The following approach was agreed upon which is consistent with the MOSAIC meta data flow and also meets requirements of bundling data that belongs together.

1) Actions logged with IceFloeNavi in the field

1. Every ice core is logged with one of the generic ice cores of different diameters (SI_corer_9cm, SI_corer_7cm or SI_corer_14cm) or a specific ice core e.g. for microplastic sampling, if required.
 - a. Ice corer actions are grouped into one device operation per site and coring activity upon import into DSHIP.
2. One snowpit is logged per coring site and day to represent the snow related activities:
 - a. Snowpit is a virtual platform in SENSORWeb which contains all snow sampling and measuring instruments as subdevices: Snow Micro Pens, Snow Sampler, Scales, Temperatur sensors,...

- b. After the Import of snowpit in DSHIP, subdevices used in the field need to be changed manually. (See documentation under XX).

2) measurements and actions performed on the core in the field

1. Event relations of type '**Deployed with**' will be created in SENSORWeb via script by the data supporters for all measurements performed on the core.
2. A second script will run to automatically create a folder for the device operation ID in the respective measurement device directory on the MCS (e.g. "**PS122-1_8-1_codeployment**").
3. Data can be stored in the overall sampling logsheet underneath the corer directory on the MCS. Each of the related device directories however shall have a Readme file which contains the path (core directory) on the MCS where the data of the instrument can be found.

3) Analysis of the core in the lab

1. As for lab instruments (see [Handling of Analytical/Lab Data in MCS, SENSORWeb and DSHIP](#)). Event relations of type '**Sample taken from**' are to be created in SENSORWeb manually. A directory for the device operation of the coring event will be created manually on the MCS in the directory of the lab instrument where analysis data will be uploaded (e.g. "**PS122-1_8-1_analysis**").
2. Analysis data will be uploaded in the directory of the respective lab instrument on the MCS. With the exception of density and salinity values, that can be stored in the file underneath the core-directory. A README-File shall be uploaded into the directory of the salinity and density sensors containing the path to where the data can be found on the MCS.

Summary for data upload on the MCS:

- Snowpit-data is stored underneath the snowpit directory.
- Ice core data, data for measurement performed on the core, salinity and density values are stored underneath the ice core directory.
- All data beyond the above points is stored in the respective lab instrument folders on the MCS.