

# MOSAiC

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## MOSAiC Data Management

Concepts of the MOSAiC Data Management are described in detail under [MOSAiC Data Management Concepts](#).

( See also the navigation on the left side of the page)

The metadata flow of MOSAiC is based on the O2A framework:



### General Data Flow

From left to right: Metadata of every instrument is registered in SENSOR. Data acquisition is logged with DSHIP Actionlog. Data is ingested into the MOSAiC Central Storage (MCS). Ingested data can be monitored with different tools providing that it is converted accordingly and registered appropriately with the monitoring tools. Data analysis onboard is supported with virtual workspaces. Eventually all data shall be published in an appropriate data repository, e.g. PANGAEA.

## Data Flow onshore in MOSAiC

Detailed instructions how to access and work with the MOSAiC Data on land are found under [Accessing the MOSAiC \(Data\) Services](#)

( check also the navigation bar on the left side of the page).

## Data flow onboard Polarstern in MOSAiC

Data annotated with metadata regarding device description and device operation will be stored in the onboard MOSAiC Central Storage (MCS) and transferred to the AWI storage (land MCS) after each leg. The land MCS will be accessible only to MOSAiC Consortium members prior to the data public release date 1.1.2023.

**SENSOR**

**All devices used in MOSAiC must be registered in the SENSORWeb!!!**

Due to limited network connections during the expedition, this has mainly has to be done prior to the respective leg of MOSAiC.

Handles for the versions of the devices in SENSOR can be published with the data in PANGAEA. This requires versions to be saved within SENSOR.

## DSHIP

**Every operation of a device must be registered in the DSHIP Action Log.**

The devices in SENSOR are synchronized with DSHIP. By registering a usage of a device in the DSHIP ActionLog a device operation ID is created. Log entries contain information on Date, Time, Longitude, Latitude amongst others. Device Operations are synchronized back to SENSOR.

## IceFloeNavi App

**Used for logging sampling activities on the ice.**

Devices are imported from DSHIP and device operations are synchronized back to DSHIP. Thereby information based on a relative coordinate system calculated with the use of AIS transponders is attached to device operations in the DSHIP ActionLog

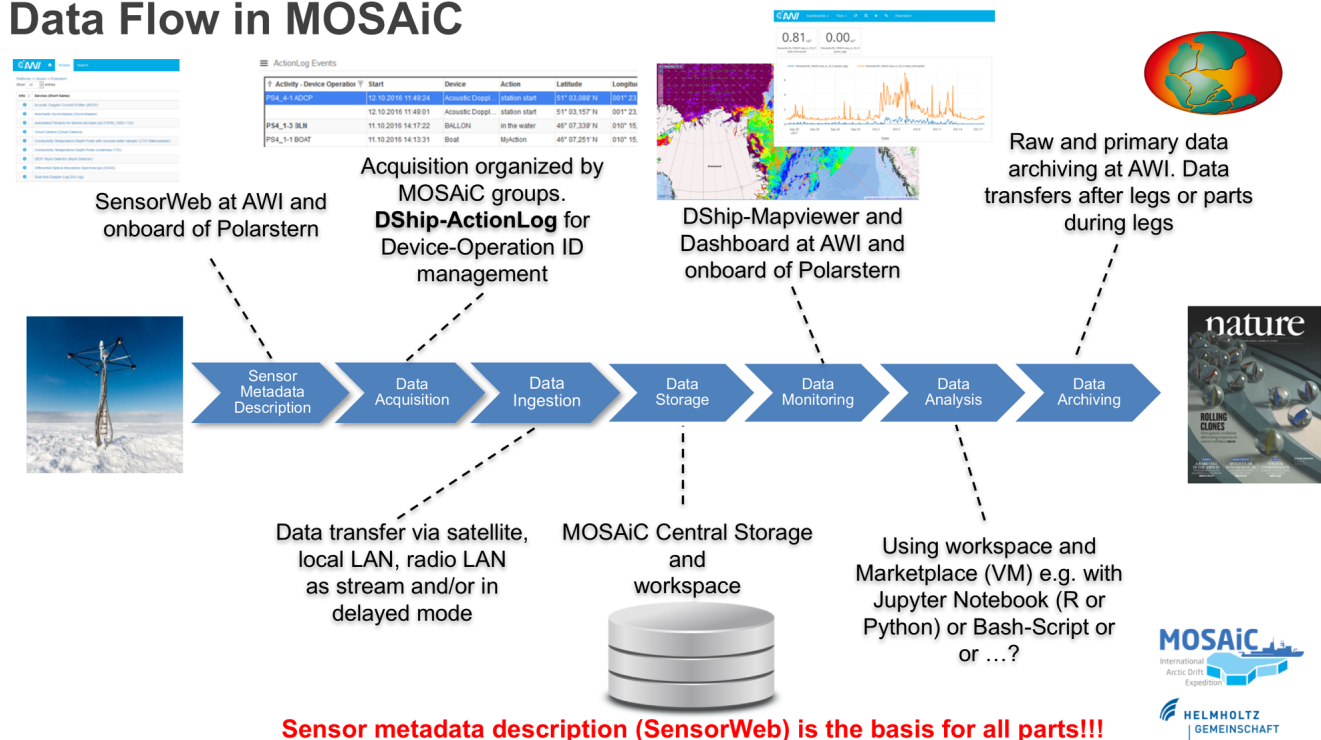
## Raw data on MCS

**The MOSAiC Central Storage (MCS) is the main storage platform for you raw data.**

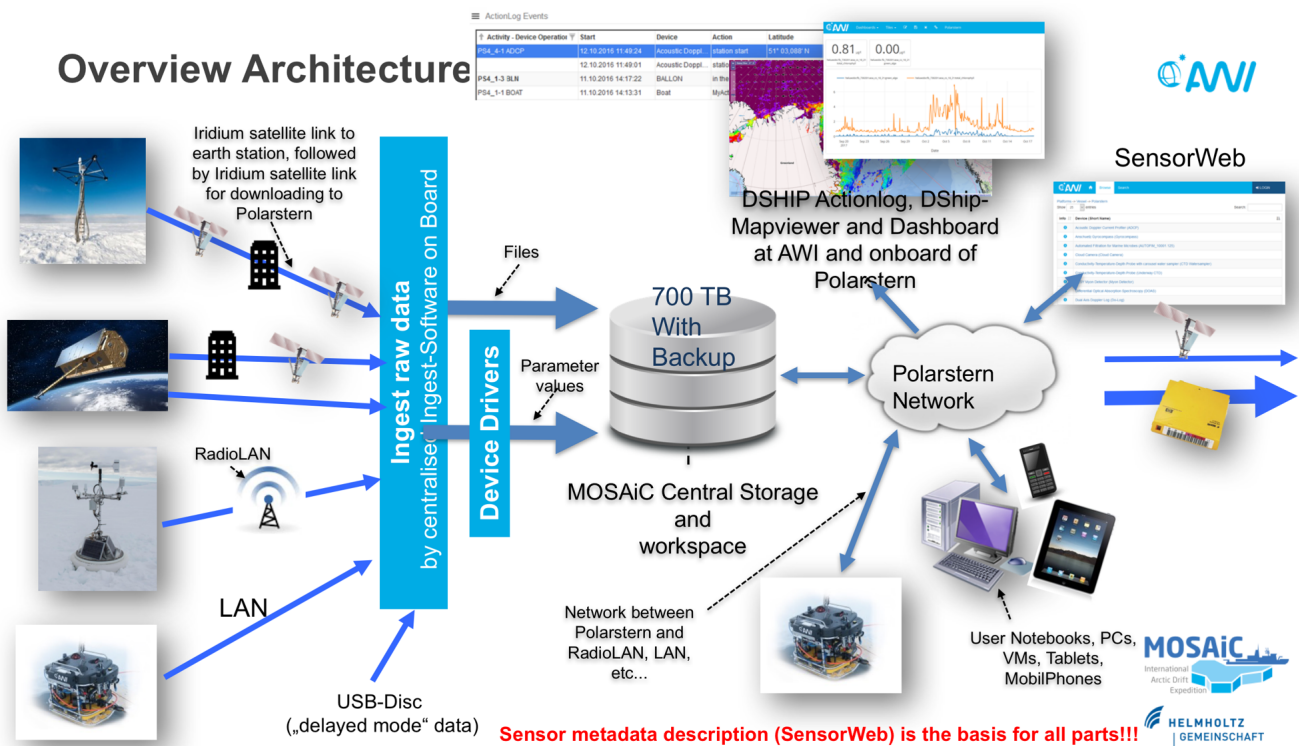
The directory structure on the MCS is derived from the URN of the device entered SENSOR. Each respective device or subdevice folder will contain a subdirectory named according to the device operation ID in DSHIP in which the device was used. Raw data obtained during each device operation have to be uploaded (automatically or manually by Data PI) to the respective subdirectory.

# Overview charts on data infrastructure during MOSAiC

## Data Flow in MOSAiC



# Overview Architecture



Devices has to be created in SENSOR (only once)

Log every device operation

