South Adriatic Sea E2M3A (OGS)
Data Management Plan

Version 0.2

EMSO ERIC
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History of changes

Version	Date	Change	Author(s)
0.1	09/11/2021	First draft	Elena Partescano
0.2	18/12/2023	Update information and format revision	Elena Partescano

DMP E2M3A Buoy and Mooring

Dataset Overview	
Dataset Title	OGS E2M3A Buoy and Mooring
Dataset Description	Near real-time and delayed mode datasets acquired in South Adriatic Sea

Data Collection
What data will you collect or create?

The observation systems and facilities provide:

Near Real-time data acquired by E2M3A Buoy (NetCDF format):

Oceanographic parameters
Partial pressure of carbon dioxide {pCO2}
pH of the water body
Temperature of the water body
Electrical conductivity of the water body
Concentration of oxygen {O2} per unit volume of the water body
Pressure exerted by the water body

Meteorological parameters
Pressure by the atmosphere
Relative humidity of the atmosphere
Temperature of the atmosphere
Wind from direction (gust) in the atmosphere
Wind speed (gust) in the atmosphere
Wind from direction in the atmosphere
Wind speed in the atmosphere
Downwelling vector irradiance as energy (solar wavelengths) in the atmosphere by pyranometer
Downwelling vector irradiance as energy (longwave) in the atmosphere

Near real-time datasets are transmitted in several formats through ERDDAP server (https://nodc.ogs.it/erddap/index.html).

Delayed mode data E2M3A mooring (ODV format):
Meteorological parameters
Pressure (measured variable) exerted by the atmosphere
Relative humidity of the atmosphere
Downwelling vector irradiance as energy (solar wavelengths) in the atmosphere by pyranometer
Temperature of the atmosphere

Wind from direction in the atmosphere

Wind speed in the atmosphere

Downwelling vector irradiance as energy of electromagnetic radiation (longwave) in the atmosphere

Oceanographic parameters

Electrical conductivity of the water body

Concentration of oxygen {O2 CAS 7782-44-7} per unit volume of the water body

Pressure (spatial coordinate) exerted by the water body

Practical salinity of the water body

Temperature of the water body

Direction (towards) of water current in the water body

Eastward velocity of water current in the water body

Northward velocity of water current in the water body

Speed of water current (Eulerian measurement) in the water body

Upward velocity of water current in the water body

Transmittance per unspecified length of the water body

Turbidity of water in the water body

Delayed mode datasets are transmitted in ODV format through SeaDataNet infrastructure.

How will the data be collected or created?

Near Real-time datasets

Acquired datasets in near real-time are created using the Copernicus Marine in situ TAC standards (https://doi.org/10.13155/53381) both of parameters name and units.

Also, the name of variables and files follow the standards defined into the Copernicus Marine In Situ NetCDF format manual (https://doi.org/10.13155/59938).

We adopt a quality control procedure to qualify the data values. The procedure has been developed following the European protocols (SeaDataNet,2010), the automatic checks are:

- checks for missing data and data format;
- check of the date/time and of the measuring position;
- check of duplicate vertical profiles or measures;
- check for spikes by testing data for large differences between adjacent values;
- check for invalid values by comparison with min & max values fixed for each parameter archived.

These checks are implemented at fixed time intervals to series of three data points and aim at highlighting the presence of casual or systematic errors.

Delayed mode datasets

Datasets distributed in delayed mode are collected and standardized using SeaDataNet common vocabularies, adopting the ISO 19139 metadata standard for all metadata directories, using harmonized Data Transport Formats for data sets and using common quality control protocols and flag scales (https://www.seadatanet.org/Standards).

Documentation and Metadata
Near Real-time datasets The metadata are standardized into NetCDF files, following the format conventions and standards by OceanSites and Copernicus: - Copernicus Marine In Situ TAC parameters (https://doi.org/10.13155/53381) - Copernicus Marine In Situ NetCDF format manual (https://doi.org/10.13155/59938). **Delayed mode datasets** The metadata are standardized following SeaDataNet metadata catalogs (CSR, CDI, EDMED, EDMERP and EDIOS) using XML formats and exchange schema's (https://www.seadatanet.org/Standards). These are based upon the ISO 19139 content model. Moreover, all SeaDataNet metadata formats make use of the SeaDataNet Common Vocabularies.

Ethics and Legal Compliance
Data are product by OGS. No sensitive data are provided.
How will you manage copyright and Intellectual Property Rights (IPR) issues?
Near Real-time datasets Datasets are collected by OGS and it is the owner. Datasets follow the distribution statement defined by Copernicus: "These data follow Copernicus standards; they are public and free of charge. User assumes all risk for use of data. User must display citation in any publication or product using data. User must contact PI prior to any commercial use of data." **Delayed mode datasets** Datasets are collected by OGS and it is the owner. Datasets follow the SeaDataNet Data policy (https://www.seadatanet.org/Data-Access/Data-policy) concorded with the PI. Also, a Datacite DOI® (Digital Object Identifier) is used to permanently identify datasets for the purpose of its publication on-line and for its quotation in the scientific literature.

Storage and Backup
How will the data be stored and backed up during the research?
The data is stored on the servers owned by the NODC at the OGS computer center. The data is regularly backed up to tape at the same data center. NODC/OGS is responsible for backup and restore.
How will you manage access and security?
Access to the computer center is limited. All the software part is regularly updated and all the necessary security protocols are applied.

Selection and Preservation
Which data are of long-term value and should be retained, shared, and/or preserved?
All datasets are long term preserved.
What is the long-term preservation plan for the dataset?
Near Real-time datasets The data are stored into RDBMS (PostgreSQL) database. **Delayed mode datasets** The data are stored into RDBMS (Oracle) database.

Data Sharing
How will you share the data?
Near Real-time datasets Datasets are free available on European infrastructures: - Copernicus (http://www.marineinsitu.eu/dashboard/) - EMODnet (https://portal.emodnet-physics.eu/) - Oceanops (https://www.ocean-ops.org/board) - EMSO ERIC (https://data.emso.eu) **Delayed mode datasets** Datasets are free available on European infrastructures: - SeaDataNet (https://cdi.seadatanet.org/search) - EMODnet (https://portal.emodnet-physics.eu/) Datacite DOI® (Digital Object Identifier) https://nodc.ogs.it/metadata/doi
Are any restrictions on data sharing required?
Near Real-time datasets Datasets follow the distribution statement defined by Copernicus: "These data follow Copernicus standards; they are public and free of charge. User assumes all risk for use of data. User must display citation in any publication or product using data. User must contact PI prior to any commercial use of data." **Delayed mode datasets** Datasets follow the SeaDataNet Data policy (https://www.seadatanet.org/Data-Access/Data-policy) concorded with the PI.

Responsibilities and Resources
Who will be responsible for data management?
The responsible for implementing the DMP and data management activity is Elena Partescano with IT support of Alexia Cociancich.