



EMSO and Geo-Inquire

WP2-4 VIRTUAL ACCESS TO OCEAN EMSO DATA
RELEVANT FOR THE GEOSPHERE

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EMSO includes 14 Regional Facilities and collects data in 6 science categories

ACCESS
METEOROLOGICAL PARAMETERS
WATER COLUMN PHYSICS AND BIOGEOCHEMISTRY
MARINE ECOLOGY AND BIODIVERSITY
GEOHAZARDS AND GEODYNAMICS
ENVIRONMENTAL INDICATORS (MSFD)



Among the broad range of data collected at EMSO regional facilities, we target those collected by the following instruments:

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Seismometers, cabled (realtime) and non cabled (OBSs)

Hydrophones (ocean soundscapes)

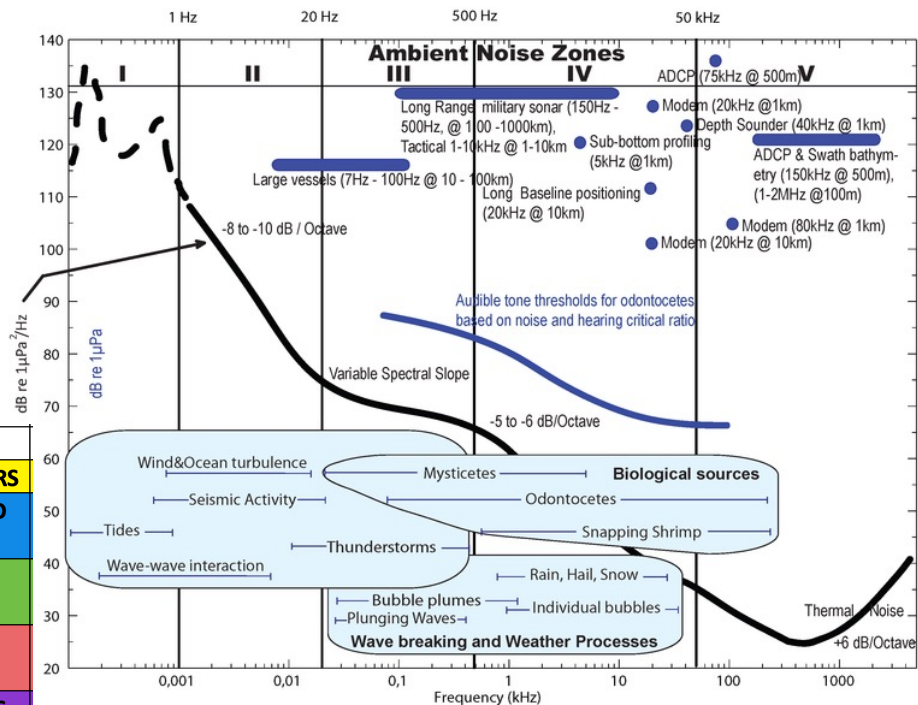
Seafloor pressure probes

Piezometers

Fiber optics monitoring applications (DAS..)

At EMSO facilities, the same instrument often collects data for a variety of science purposes... and this includes choices in data acquisition parameters ...

The Ocean soundscape



Delory et al., 2021

EGIM EMSO Generic Module



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The objective is to improve the availability and FAIRness of EMSO data for research on the geosphere

While also enhancing their availability for other types of studies

For this we work on two aspects:

- Where should the data be stored and in what format(s)
- What are the adequate metadata and how to best serve multidisciplinary needs?

subtask 2.4.1- Cabled Seafloor Seismometers data
subtask 2.4.2- Ocean Bottom Seismometers data
subtask 2.4.3- Fiber optics data
subtask 2.4.4- Access to TNA data from EMSO test beds
subtask 2.4.5- Seafloor pressure
subtask 2.4.6- Marine piezometer data
subtask 2.4.7- Marine acoustic data

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where should the data be stored and in what format(s) ?

The best “place” and format for waveform data (seismometers and hydrophones, subtasks 2.4.1, 2.4.2, 2.4.3, and 2.4.7) is in ORFEUS-EIDA

- In the case of hydrophone data, this involves a decimation of very high frequency data
- For all waveform data this involves choosing the right structure (one or several EMSO ORFEUS-EIDA node(s)/networks ?)
- desirable data management and format options for fiber optics data are being discussed in other Geo-Inquire subtasks

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where should the data be stored and in what format(s) ?

The best “place” and format for other types of data (seafloor pressure and piezometer data, subtasks 2.4.5, and 2.4.6) is through the EMSO ERIC ERDDAP server

- These data represent small volumes and are adapted to use of .csv formats
- For seafloor pressure data this involves a decision on data format so as to serve the multiple users

subtask 2.4.1- Cabled Seafloor Seismometers data
subtask 2.4.2- Ocean Bottom Seismometers data
subtask 2.4.3- Fiber optics data
subtask 2.4.4- Access to TNA data from EMSO test beds
subtask 2.4.5- Seafloor pressure
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What are the adequate metadata and how to best serve multidisciplinary needs?

EMSO current metadata standards are designed for .CSV data and adapted from Oceansites metadata. DOIs are currently created (or not..) at the national/regional facility level

- For waveform data, we work on adapting the ORFEUS-EPOS metadata and DOIs to comply with EMSO metadata requirements..
- We also need to design metadata and web access to serve needs of users outside geosphere research and to generalize the use of EMSO-compliant DOIs

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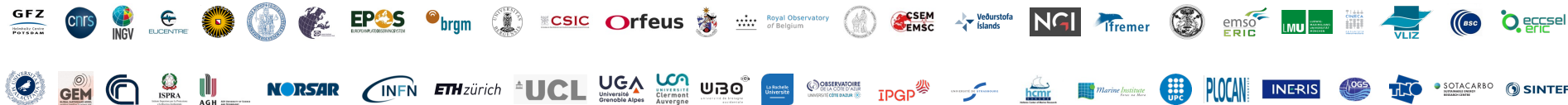
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subtask 2.4.1- Cabled Seafloor Seismometers data	integration of EMSO cabled seismometer data to EIDA	Karin Sigloch (CNRS)
subtask 2.4.2- Ocean Bottom Seismometers data	integration of EMSO Ocean Bottom Seismometer (OBS) data to EIDA	Wayne Crawford (CNRS)
subtask 2.4.3- Fiber optics data	access to reduced datasets from fiber optic cables deployed at EMSO operated cabled facilities	Diane Rivet (CNRS)
subtask 2.4.4- Access to TNA data from EMSO test beds	access to datasets acquired at the EMSO component of test bed locations as part of WP8 TNA activities	Mathilde Cannat (CNRS)
subtask 2.4.5- Seafloor pressure	Access to EMSO sea bottom pressure data, in relation with tsunami-related services, and oceanography	Davide Embriaco (INGV)
subtask 2.4.6- Marine piezometer data	Access to data from marine piezometer data acquired at the Ligurian EMSO facility	Sébastien Garziglia (Ifremer)
subtask 2.4.7- Marine acoustic data	Access to marine hydrophone data for multidisciplinary uses of marine sound	Eric Delory (PLOCAN)



Thank you for your attention!

Geo-INQUIRE is a joint effort of 51 institutions



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