




# Presentation of two projects :

## Real-time seismic event detection

## Hydroctopus

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# EMSO – Açores

european
multidisciplinary
seafloor & water column
observatory

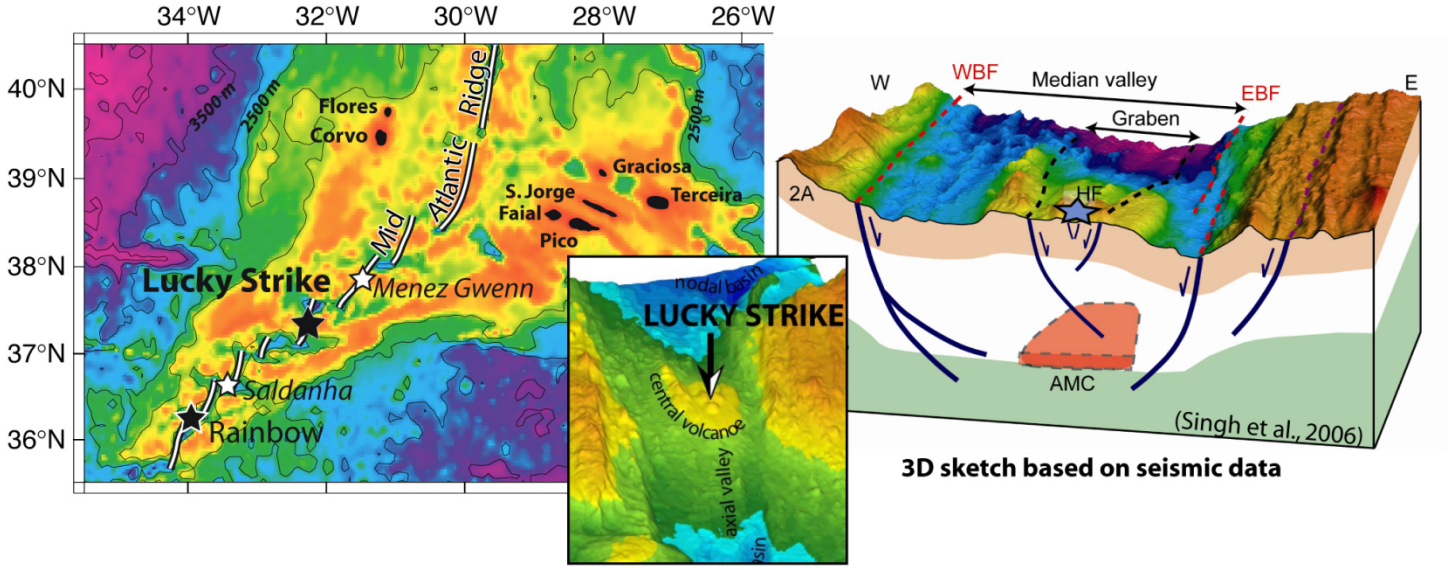
emso

- European Multidisiplinary seafloor and water-column Observatory

- 11 EMSO sites across europe

# MomarSat

- **MomarSat** Missions,
- 10 already  from 2007 to now,
- On the lucky strike site, off Açores Island (Portugal).

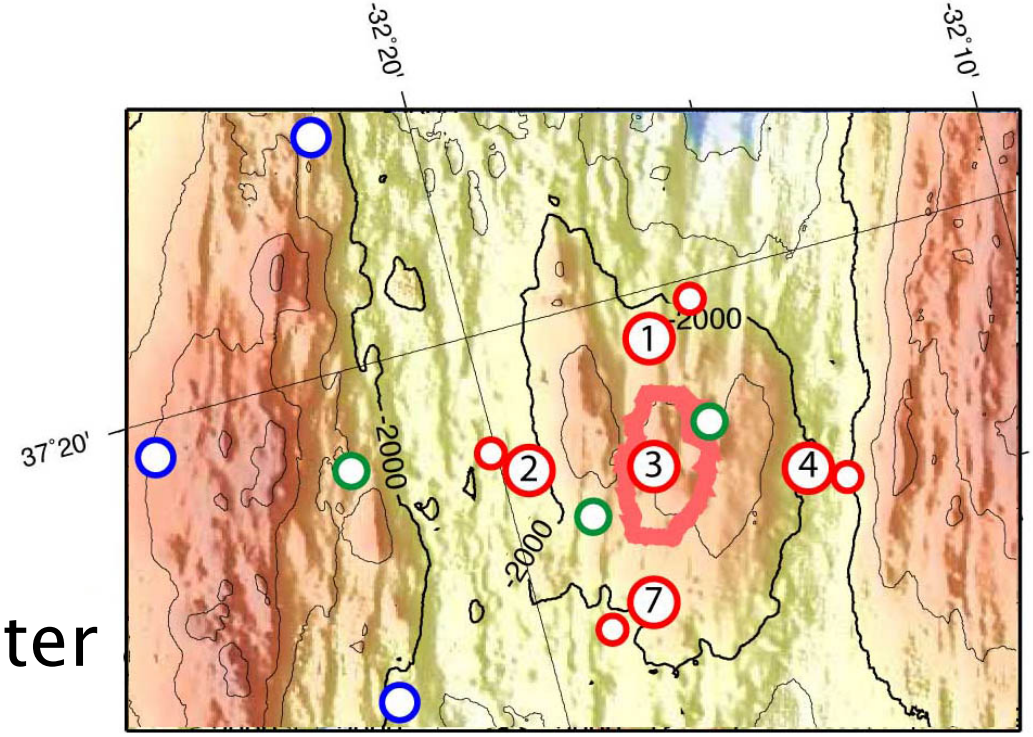


# Scientific objectives

- Two main objectives :
  - Study hydrothermal activity (heat and chemical flows) in relation to seismicity, volcanic activity and ground deformation at a diverging plate boundary
  - Study the impact of telluric, climatic and anthropogenic changes on deepseafloor ecosystem and hydrothermal communities

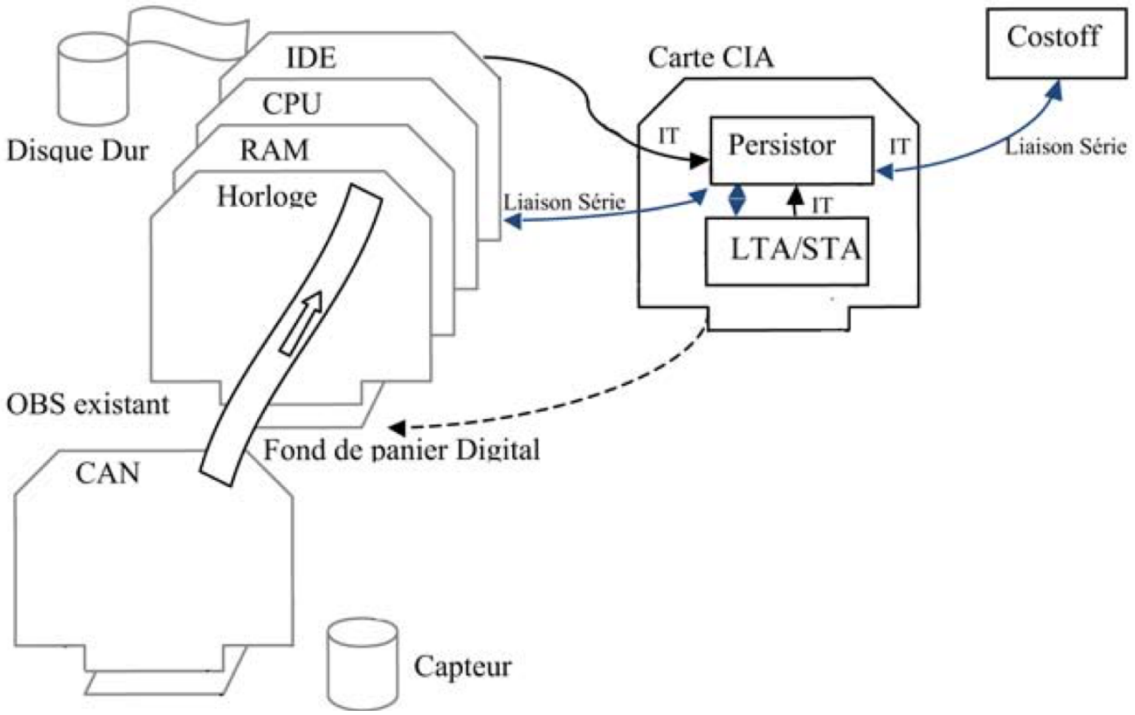
# Experiments deployed by IPGP- (Marine Geoscience team)

- Temperature probes
- Pressure probes
- 4 Seismometers
- 1 Real time seismometer
- Hydroctopus



# Real time Event detect Sismometer

- OBS with an added card for the event detection and transmission of the data to the surface (costoff).



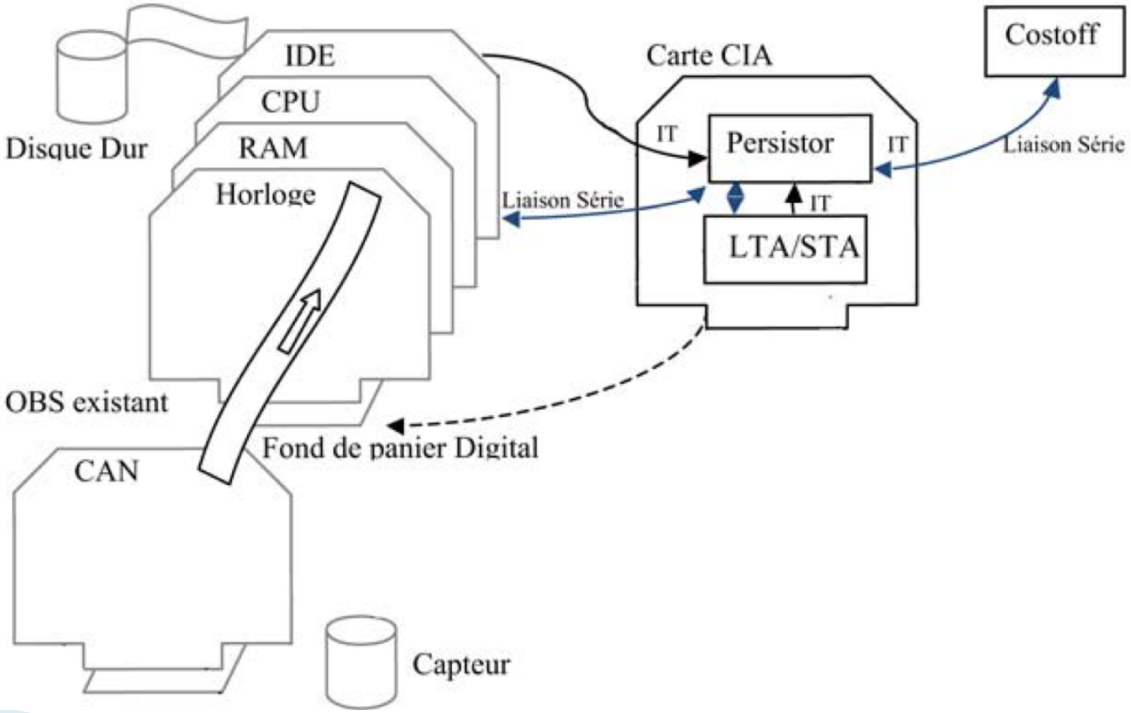
# LTA/STA program

- On a NXP kinetis microship
- = Long time average (4s) / short time average (0.25s)
- Event detected if

[mean energy (4s) / mean energy (0.25s)] < 1

# Persistor

- OBS monitoring,
- Event recording
- Costoff Comunications



# Costoff System

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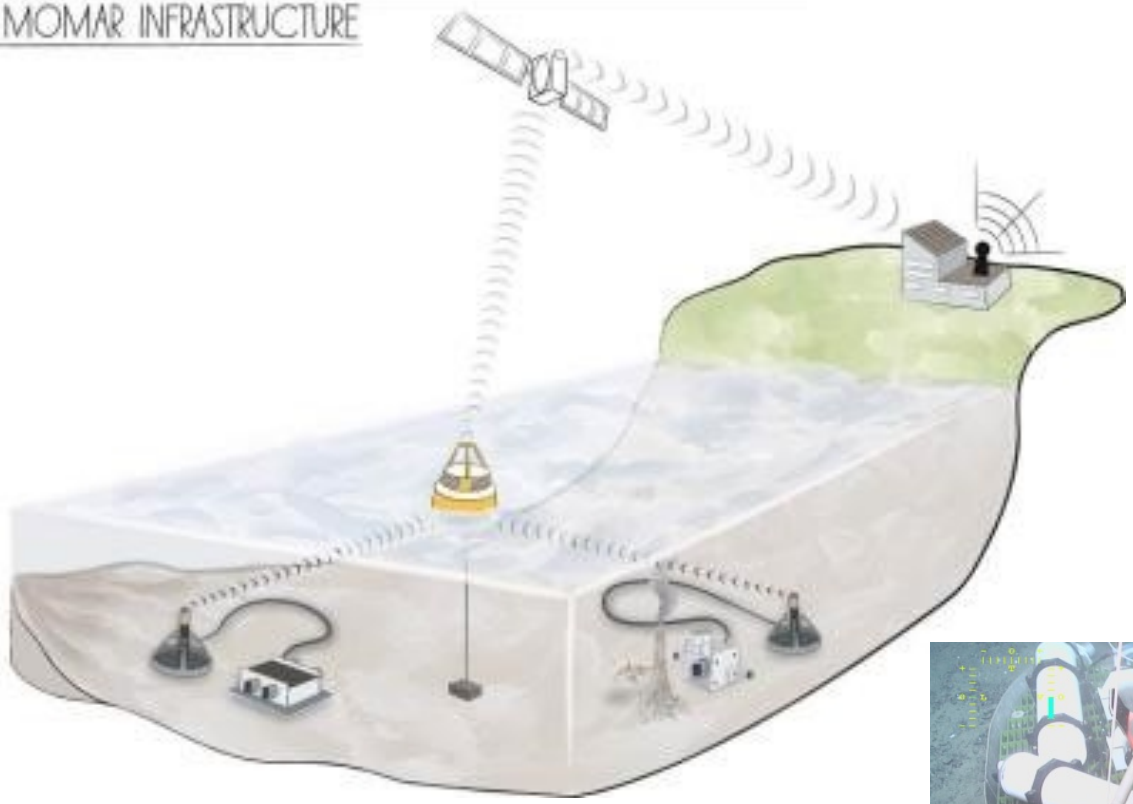
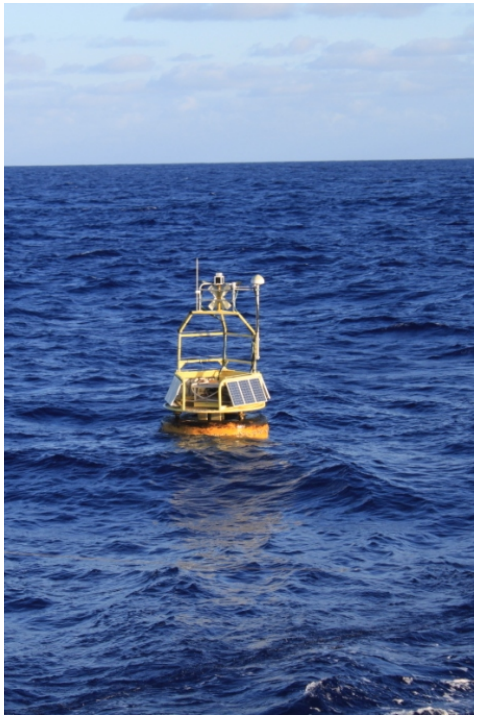
THE MOMAR INFRASTRUCTURE





# Data Monitoring

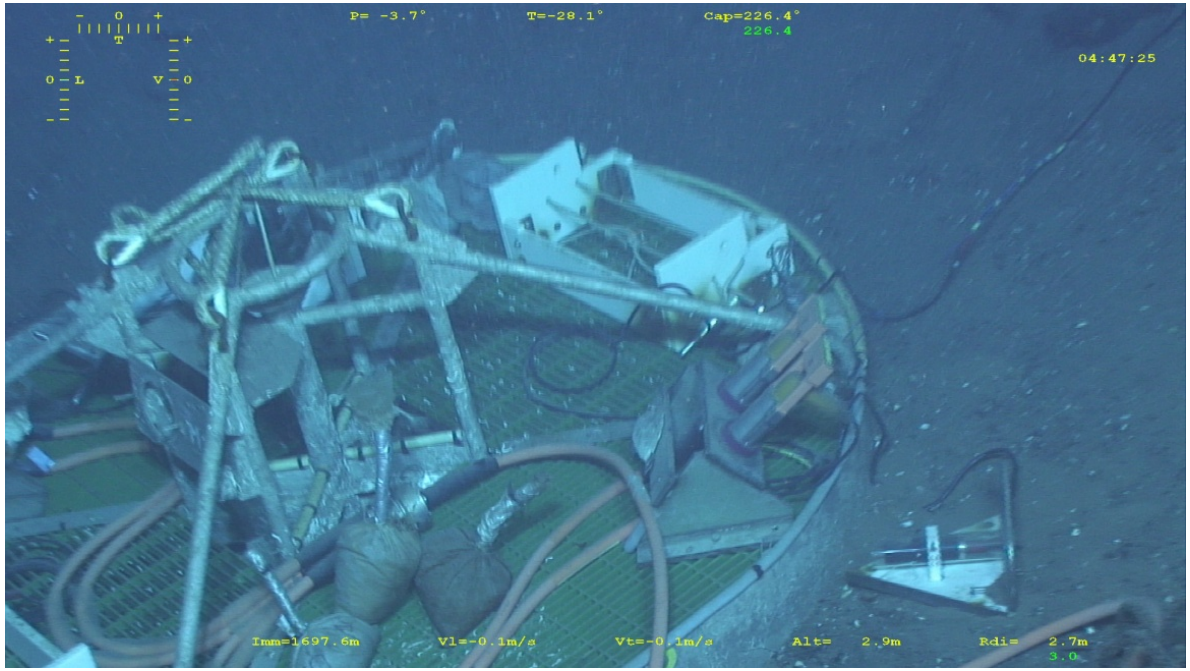
- Two SeaMon with several experiments

- All data avalable in real time

http://www.emso-fr.org/charts/Azores/2017/

# Hydroctopus

- Modified OBS with an amplifier card for 4 Hydrophones HTI-04
- The hydrophones are placed around the biggest hydrothermal vent site (Eiffel tower)
- Limitation of the sampling frequency of our OBS (250 Hz)
- Development of a new datalogger : 4 hydrophones channels, sampling frequency of 2000 Hz, for MomarSat2018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Vt=-0.1m/s
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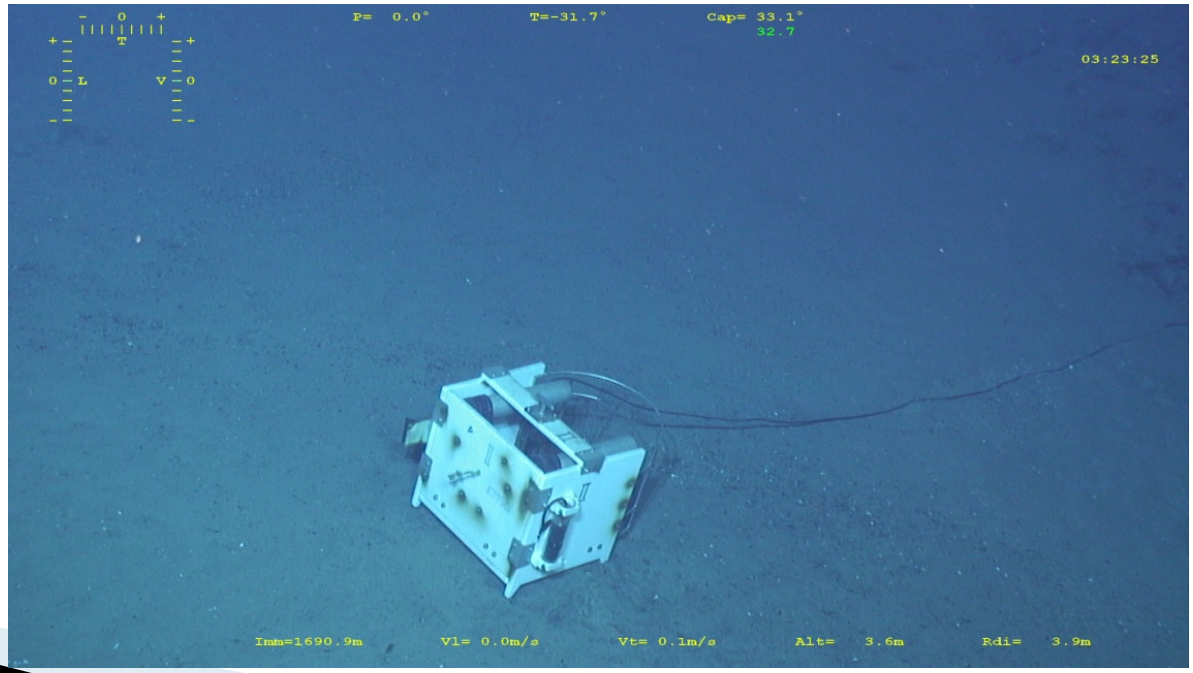
Rdi= 2.7m
3.0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Imm=1690.9m
Vl= 0.0m/s
Vt= 0.1m/s
Alt= 3.6m
Rdi= 3.9m



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# Thank you for your attention