GeoEcoMar

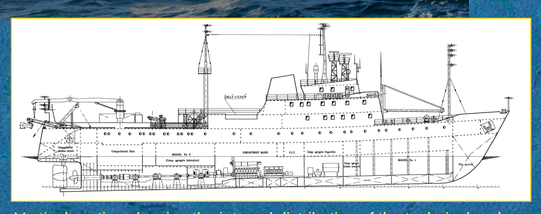
IIRSO 2017, OCTOBER 16-19, YOKOSUKA JAPAN

GEOECOMAR - Marine Research infrastructures update

Vessels and Facilities

- Research Vessel *Mare Nigrum*

Owner:
GEOECOMAR, Romania



Vertical section showing the internal distribution of the technical and scientific areas

- Laboratories on - board

- ✓**Wet lab**
- ✓Hydrology
- ✓Geophysics
- ✓Biology
- ✓Geochemistry
- ✓Computer room
- ✓Seismo-acoustics
- ✓Tomography
- ✓**Photo**

- Total area ~ 200 m²
- Computer network
- Air conditioning
- Sea and freshwater

Research Vessel *Istros*

Dimensions:
Length – 32 m
Breadth – 6.92 m
Height – 1.65 m
Displacement – 171 t
Crew – 7
Scientific crew - 10

Multibeam
Bathymetric System
SEABEAM 1050 ELAC –
Nautik (180 KHz)
DGPS OMNISTAR HP
GPS Trimble R3

New investition 2013
Seal 2D MARINE SEISMIC ACQUISITION SYSTEM
Onboard of Mare Nigrum

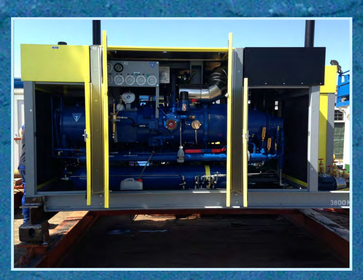
- Seal Streamer: 96 channels, 12.5 group interval
- 2 GI-Guns 355
- Compressor max: 200 bars
- Streamer depth controller
- Navigation software – SeaProNav
- Acquisition software – Seal 428
- QC software – eSQC-Pro

Streamer

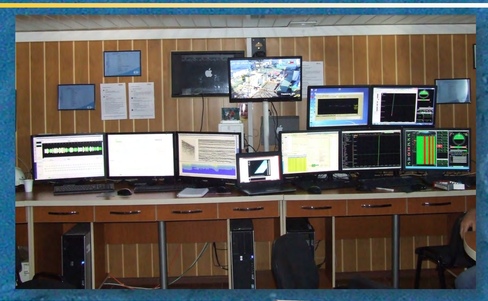
LARS for GI-GUNS

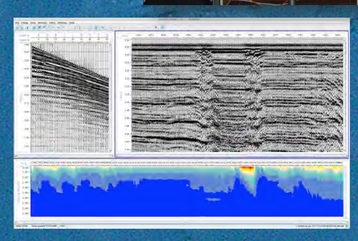
GI-Gun

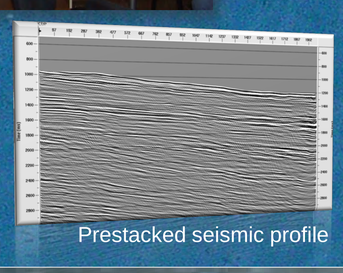
Air compressor



Acquisition and processing of 2D Seismic data





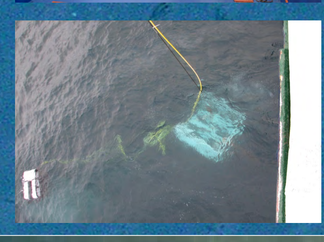


Prestacked seismic profile

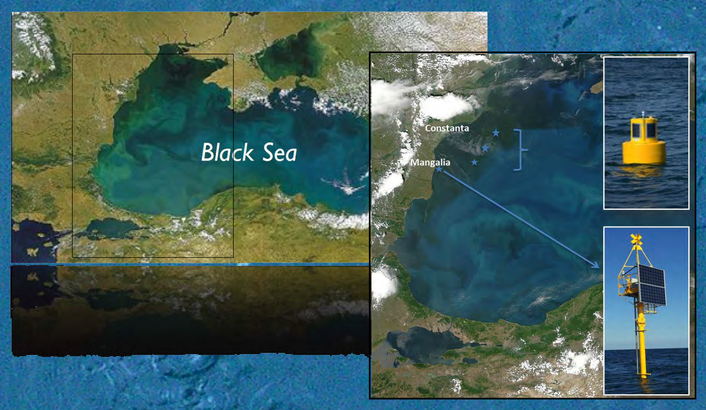
Mare Nigrum Sampling Equipment

Mare Nigrum Sampling Equipment

Research operator vehicle (ROV) Vector M5 deployment on the Black Sea

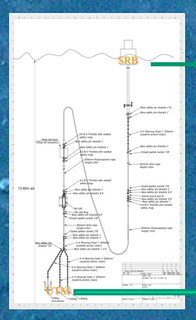


EUXINUS - Black Sea Security System



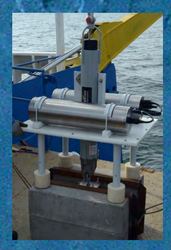
- **Provide long time series of physical and bio-chemical data, regarding the properties of the water masses and local meteo parameters**
- **To provide data for tsunamis generation and propagation in the Black Sea**

Automatic Marine Stations, with real time communication



- Meteorological data
- Water current amplitude
- Water current direction
- Conductivity
- Temperature
- Pressure
- Oxygen concentration
- Turbidity
- Chlorophyll

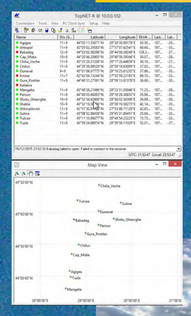
The SRBs includes a communication box with GPS receiver, radio link allowing full control of the buoy from a nearby ship, iridium bilateral link with antenna for satellite data transmission to the Operational Data Centre and reprogramming of the sensors, active and passive radar reflectors, IALA signaling light, solar panel and recharging the batteries



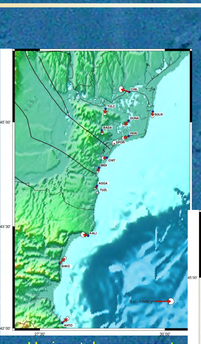
- Water pressure
- Water temperature
- Water current amplitude
- Water current direction
- Conductivity

The Underwater Tsunami Module, is equipped with a high resolution pressure sensor and temperature sensor, mounted in titanium housing with pressure port at sea.

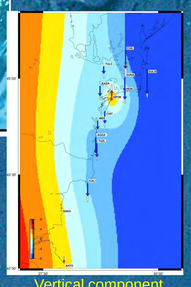
"GeoPontica" Network



13 on-line GNSS (Global Navigation Satellite System) stations dedicated to the geodynamic surveillance of the coastal area



Horizontal component



Vertical component

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