

IFREMER NEWS

- Modernisation of R/V L' Europe
- Modernisation of Seismic equipment
- Modernisation of R/V Thalassa
- A new towed SBP
- Pourquoi pas? Coring upgrade
- Bubbles sweep down

Refit of R/V I' Europe

➤ **A coastal twin-hull built in 1993**

- ✓ **Length** : 29,60 m
- ✓ **Width** : 10,60 m
- ✓ **Crew** : 8 persons
- ✓ **Science** : 8 persons



➤ **A major modernization in 2014 : New equipment for fish stock assessment**



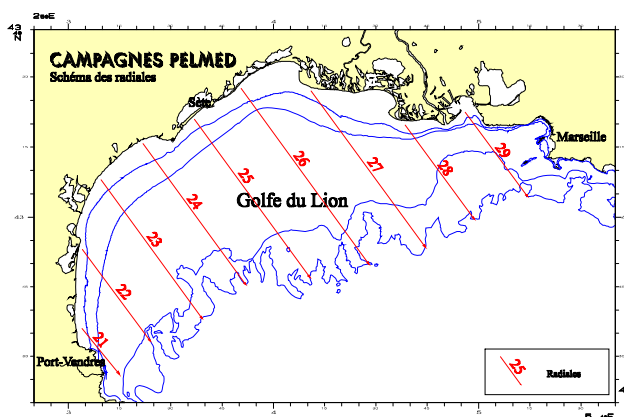
Pelagic species stock evaluation cruises

R/V I' Europe - PELMED cruises

Until now



- Echo-integration + 90 trawling + CTD
- ✓ Pelagic trawls + Marport/Scanmar
- ✓ SBES ER60-12/38/70/120/ 200 kHz
- ✓ Software : MOVIES+, CASINO

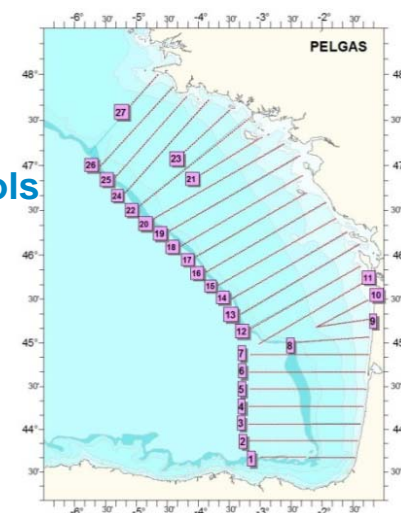


R/V Thalassa - PELGAS cruises



- Echo-integration + 68 trawling + CTD
- ✓ Pelagic trawls + Marport/Scanmar
- ✓ MBES Simrad ME70 - SMFH
- ✓ SBES ER60-12/38/70/120/200/333 kHz
- ✓ Software : HERMES-MOVIES-MOVIES3D-CASINO-PUPITRI-RAPTRI-SUMATRA

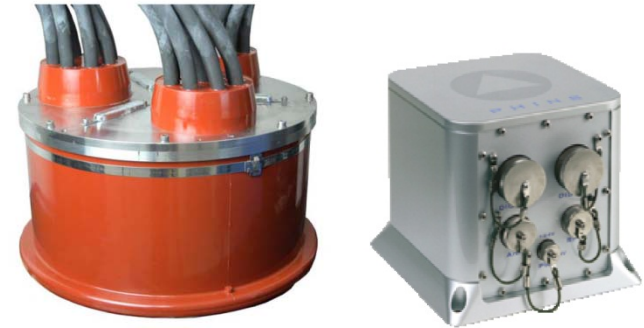
Objective is to have similar tools on L' Europe and Thalassa



Refit of R/V I' Europe

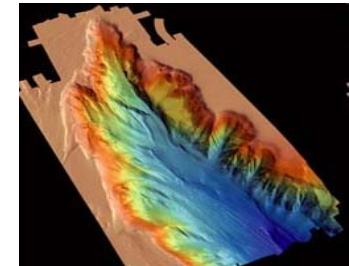
➤ Equipment upgrade

- ✓ Fishery MBES ME 70
- ✓ Fishery SBES 333kHz
- ✓ USBL positioning system
- ✓ Mobile equipment : ADCP, EM2040
- ✓ New MRU
- ✓ Scientific instruments



➤ Refit of IT network infrastructure

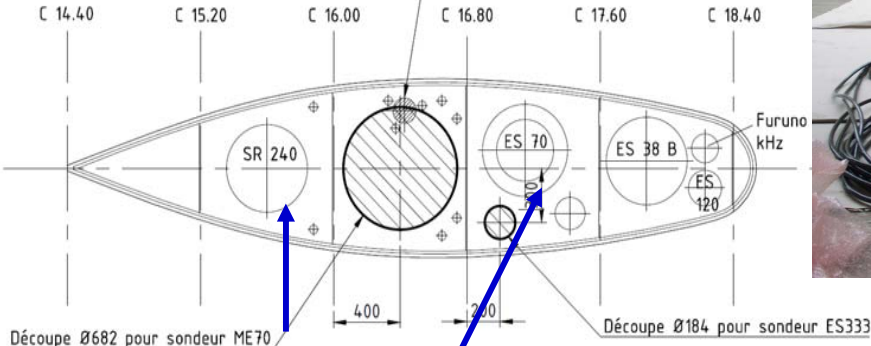
➤ VSAT installation



➤ Installation of new software

R/V trials with new equipment carried out in may 2014

ME70 integration

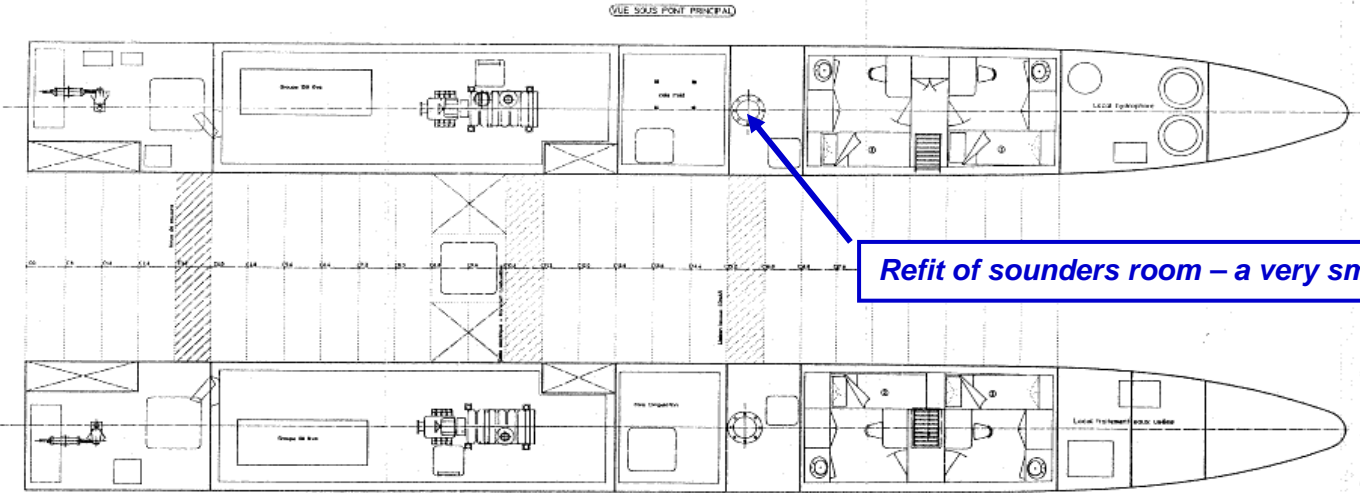


Removal of sonar SR240

ME70



Refit of sounders room – a very small room



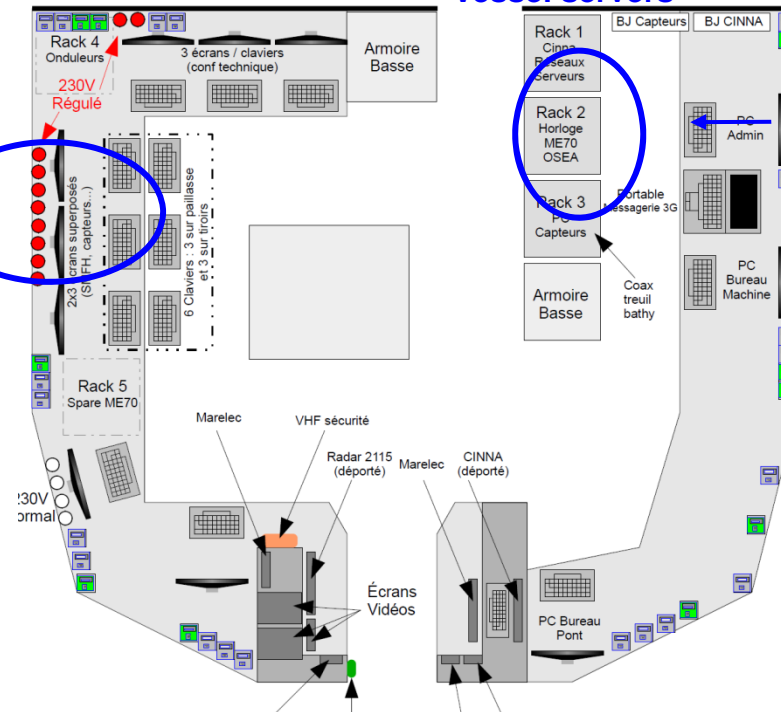


Vessel servers

Screens wall

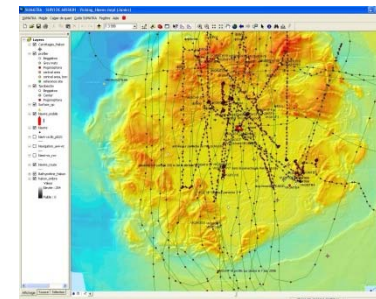
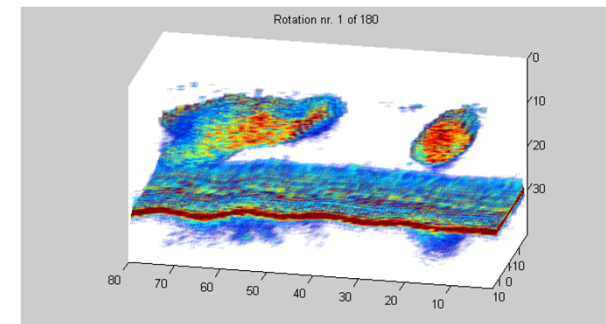
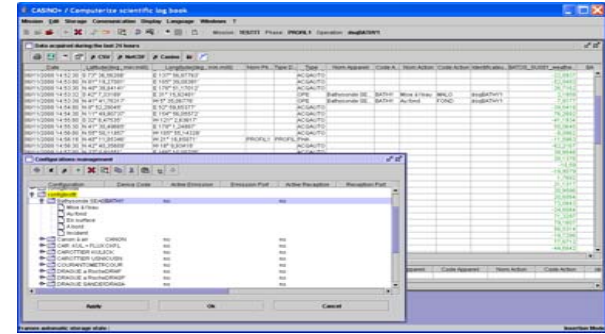
Storage rack

Scientific space



Software

- Data acquisition (except ME 70)
 - ✓ TECHSAS for data acquisition + SEADATAVIEW for visualization
 - ✓ Supervision displays available on ship and on shore (scientists & operators)
- ME 70 data acquisition and processing
 - ✓ HERMES, MOVIES 3D & MOVIES (idem *Thalassa*)
 - ✓ SVP Editor for sound speed profile
- Cruise follow-up
 - ✓ SUMATRA (idem *Thalassa*)
 - ✓ CASINO+ Logbook (idem *Thalassa*)



Seismic equipment renewal

SERCEL SENTINEL solid streamer technology

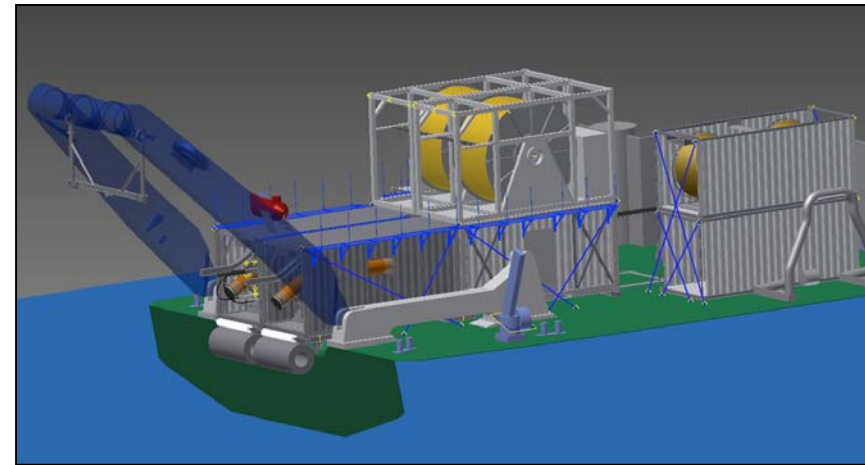
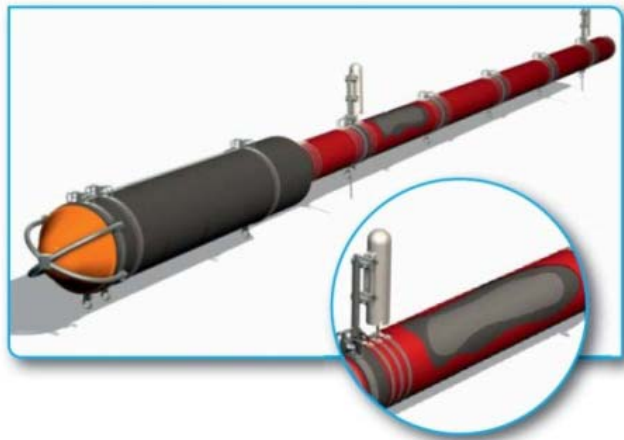
- ✓ 2D equipment with 4500m streamer, Extension to 6000m envisaged
 - ✓ Acquisition system SEAL 428
 - ✓ Drums and winches
 - ✓ New Air gun system
-
- ✓ 2D High Resolution with 600m streamer
 - ✓ Acquisition system SEAL 428, drums and winches
-
- ✓ 3D High Resolution system with 2 * 600m streamer
 - ✓ Acquisition system SEAL 428 + drums and winches



Seismic equipment renewal

New air gun deployment system – not yet defined

- Flexfloat system envisaged
- Deployment to defined – no ramp available on ships



Project started in 2014

- 2D equipment received and qualified at sea – scientific cruises underway
- 3D equipment planned for end of 2015 – trials in 2016
- New sources deployment planned in 2016

Modernisation of R/V Thalassa

Objectives : Open the ship to the geoscience community – Actually mostly dedicated to fish stock assessment and physics of the oceans

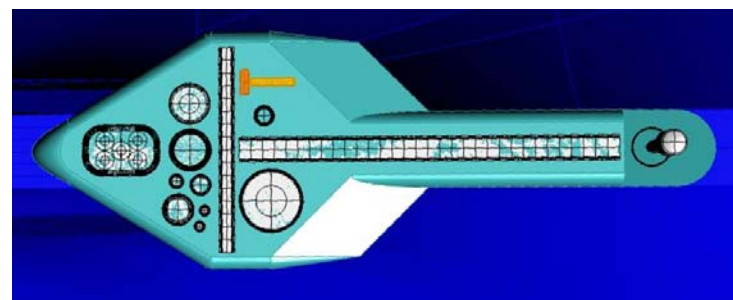
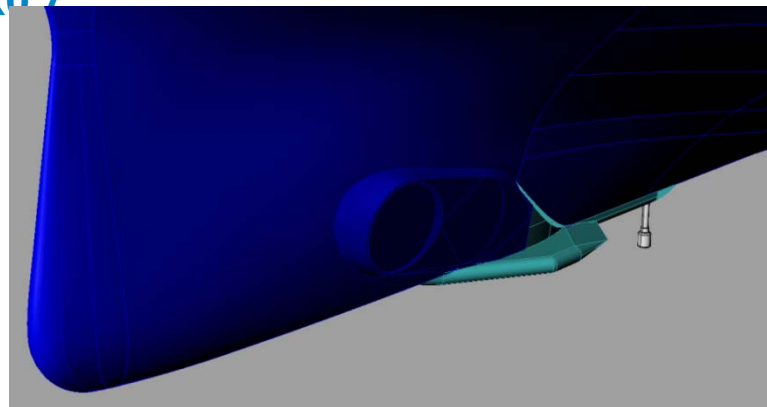


- **Start of the project - September 2015**
- **End planned to mid-2017**

Modernisation of R/V Thalassa

Scientific equipment

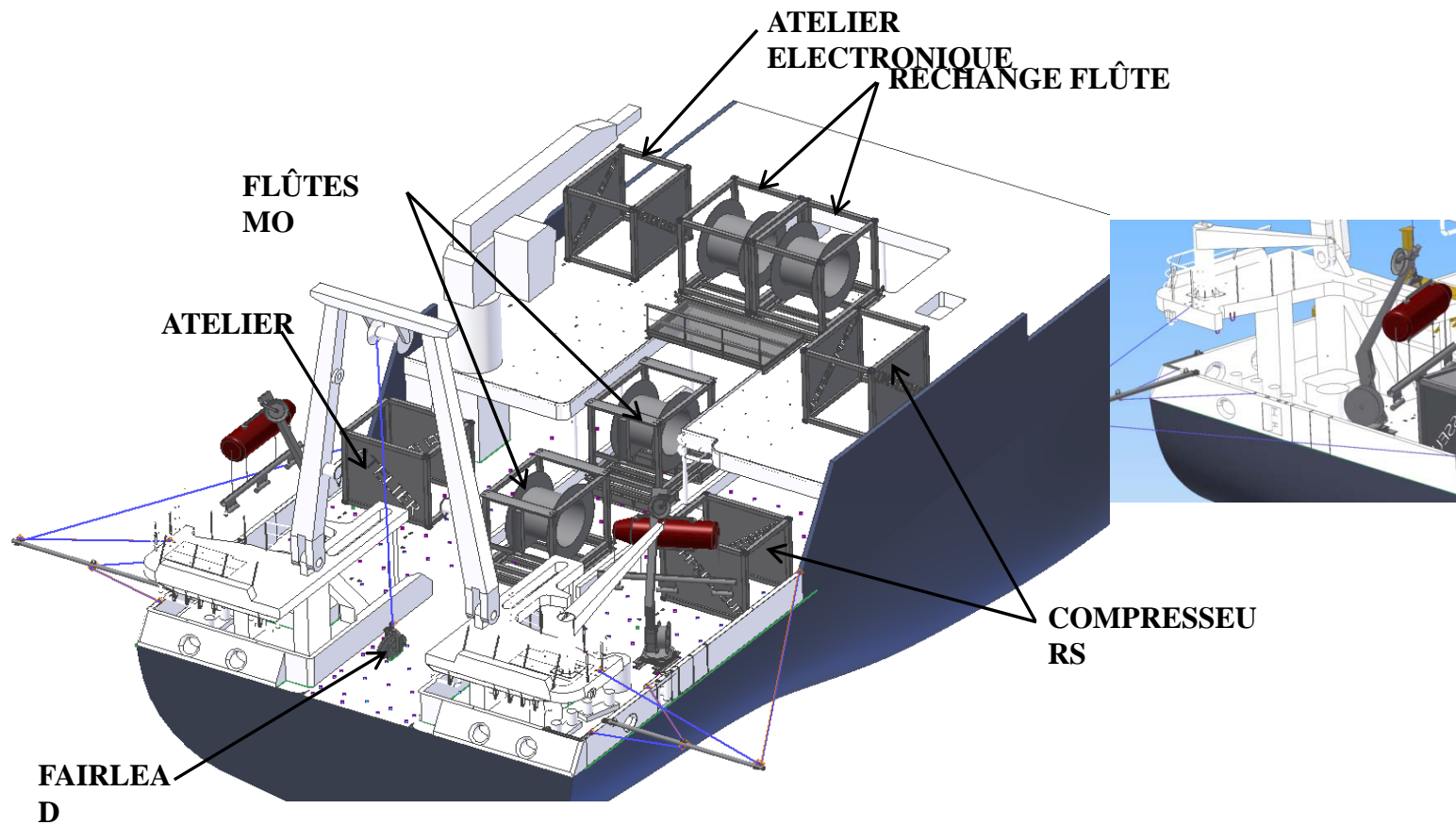
- MBES : EM302 0,5° x1° , EM2040 0,4° x0.7°
- MBES ME70
- SBES EK80 (6 fréquences)
- USBL for U/W vehicle positioning
- Sub Bottom Profiler
- ADCPs
- Continuous measurements sensors suite
- Coring capacity
- Dredging capacity
- Seismic and U/W vehicles operation
- Heavy maintenance (propulsion, deck,..)
- IT equipment renewal
- Software up-grading
- New Knuckle crane



Modernisation of R/V Thalassa

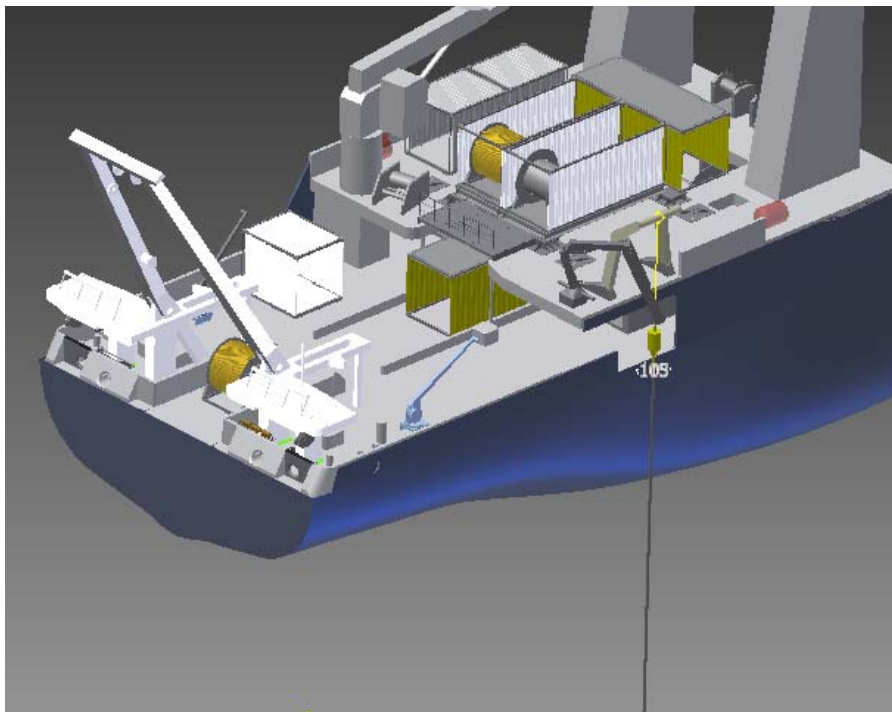
Seismic installation – Pre-project

High Resolution seismic 2D or 3D – streamer 600m



Modernisation of R/V Thalassa

Gravity coring

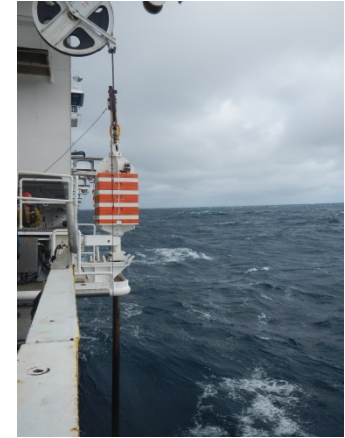


- CALYPSO 18m
- Depth 4500m
- Diameter 140mm
- Dyneema 25mm
- Structure modification (bulwark opening + structural reinforcement)

OPTION : share the mobile winch with *L'Atalante*

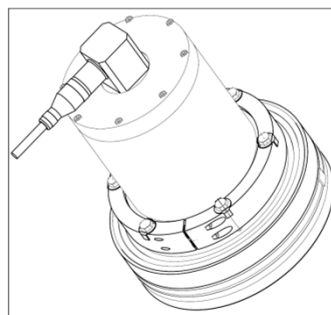
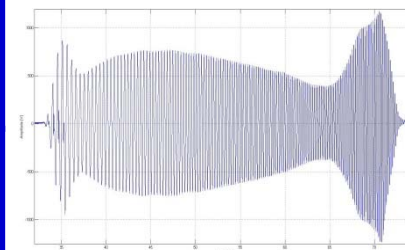
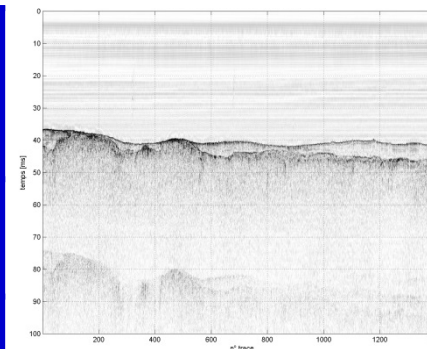
Gravity coring up to 36m on *Pourquoi pas?*

- ✓ 5th boom implementation
- ✓ Upgrade SWL telescopic boom winch – 8t
- ✓ New 8t CALYPSO corer



Towed Sub Bottom Profiler

Description	Subsurface towed-fish (<1m) Deployment from coastal vessel frame, at a speed of 6 knots 20 m < Water depth < 200 m
Towed-fish	Single low-frequency transducer Tx / Rx (Tonpilz technology). Additional sensors : inertial measurement unit + pressure sensor
Aboard	New light electronic-unit (collaboration with IXBlue) : Power electronics (PWM / 2 kVA) + impedance matching unit + preamps SUBOP data acquisition system, interfaced with GPS aboard.
Performances	Chirp 1700-6000 Hz, 10 to 50 ms, SL ~ 193 dB ref. 1µPa @ 1m Vertical resolution ~ 30 cm, Penetration ~ 50 m



Bubble sweep down

- The objective is to establish an experimental protocol in water tank to confirm (or not) the presence of bubbles
- 2 consecutive PhD since 2012

