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NIOZ recent developments

Marck G Smit
Jack Schilling
Program Pelagia

- Now: port call Barcelona
- Nov/Dec 2009: Mediterranean
- Jan/Feb/Mar 2010: Midlife Refit
- Apr/May 2010: Mid Atlantic
- May/Jun 2010: West Atlantic
RV Pelagia – Mid Life refit

- Build in 1991
-Downscaled budget
- EU-tendered
-Yard: Santander
-Jan/feb/mar 2010
-20 year life time extension
- 2 x new main engines (caterpillar)
- Revision of all systems:
  - Overhaul of electric drive systems, generator and main switch board
  - Ventilation, AC and piping: complete overhaul
  - New navigation systems and radar, ECDIS
- USBL + deployment pole?
- Heavier knuckle boom crane for work deck
- Ballast water treatment system
- Permanent internet connection
New shipboard data management system

WERUM ↔ TECHSAS

- Better technology by programmers
- Black box
- Commercial: turnkey quotation, fast response
- Not very fancy

- From sea researcher practice
- Patch work development
- Noncommittal support, substantial own effort
- Better displays
- Substantial cheaper

Both systems supply a good solution!
TECHSAS display solutions were decisive

Installation: during Refit Pelagia
KM3Net – neutrino detector

- Multiple string deployment
- Compacted mooring

- Neutrino detector
- 5000 m depth
- 10,000 glass spheres
- Appr 500 moorings
- 10 kV powersupply
- Appr budget € 220 mln
New Kevlar OEM cable

- Ø 20 mm
- 21 ton
- 6 x 0.36 mm² copper
- 4 x single mode fiber
- 9500 m

See:
presentation Jack
Ultra Clean Sampling system

- Big West Atlantic project
- New CTD bottles
- Ultra clean material: PVDF
- Ultra clean valves: PVDF
- 24 large volume bottles: 24 ltr

System elements:

Ultra Clean Cable  Clean room sub sampling  Ultra Clean Bottles
Ultra Clean Sampling system (2)

shallow and deep water trials

butterfly valve, hydraulic actuated, large opening ratio

welding of the head to the pipe

welded head

cruise : April 2010

complete system trial
In development:
latest models of NIOZ thermistor string

- High accuracy thermistor string
  - 1 mK accuracy
  - inductive coupling

- Model 5:
  - Temperature + conductivity

- Model 6:
  - Temperature + pressure differences
NIOZ HD Video and stills camera system

- Fully programmable
- Stand-alone
- Infra-red light is used to decrease the disturbance effect on the fish. Most fish are hardly affected by Infra Red light.
Science/institute (1)

- Wadden sea project:
  - Tidal flats, measuring poles
  - Funding because of oil drilling

- Ballast water project:
  - Invasive species
  - IMO new systems test facility

Chinese Mitten Crabs in Europe
Science/institute (2)

- Beagle project:
  - Darwin year: Beagle round the world voyage again
  - Every week TV-coverage
  - CTD-etc torpedo

- Proposals:
  - Mid water AUV (500/600 m)
  - ROV cooperation with Ghent University (Cherokee, 1600 m)
Plankton nets (question Hans Petter)

- Zoo plankton work is stopped at NIOZ!
- MocNess: no experience

NIOZ-nets:
- HydroBios: Multinet (+ sev. others)
  - 0.5 x 0.5 m
  - modified to improve towed sampling
- RMT (out of production)
  - 1 m² + 8 m²

Contact: Martien Baars
Thank you

Remarks, questions?

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