



Royal Netherlands Institute for Sea Research

Recent developments at Royal NIOZ



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OFEG-TECH
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Royal NIOZ at a glance:

- On the island of Texel and Yerseke
- Major working areas: North/Mid Atlantic, North Sea, Mediterranean, etc!
- Staff: 400 people
- Founded in 1876



RV Pelagia





Developments in Piston Coring-2

NIOZ Core cutter for thick liner (10 mm max)

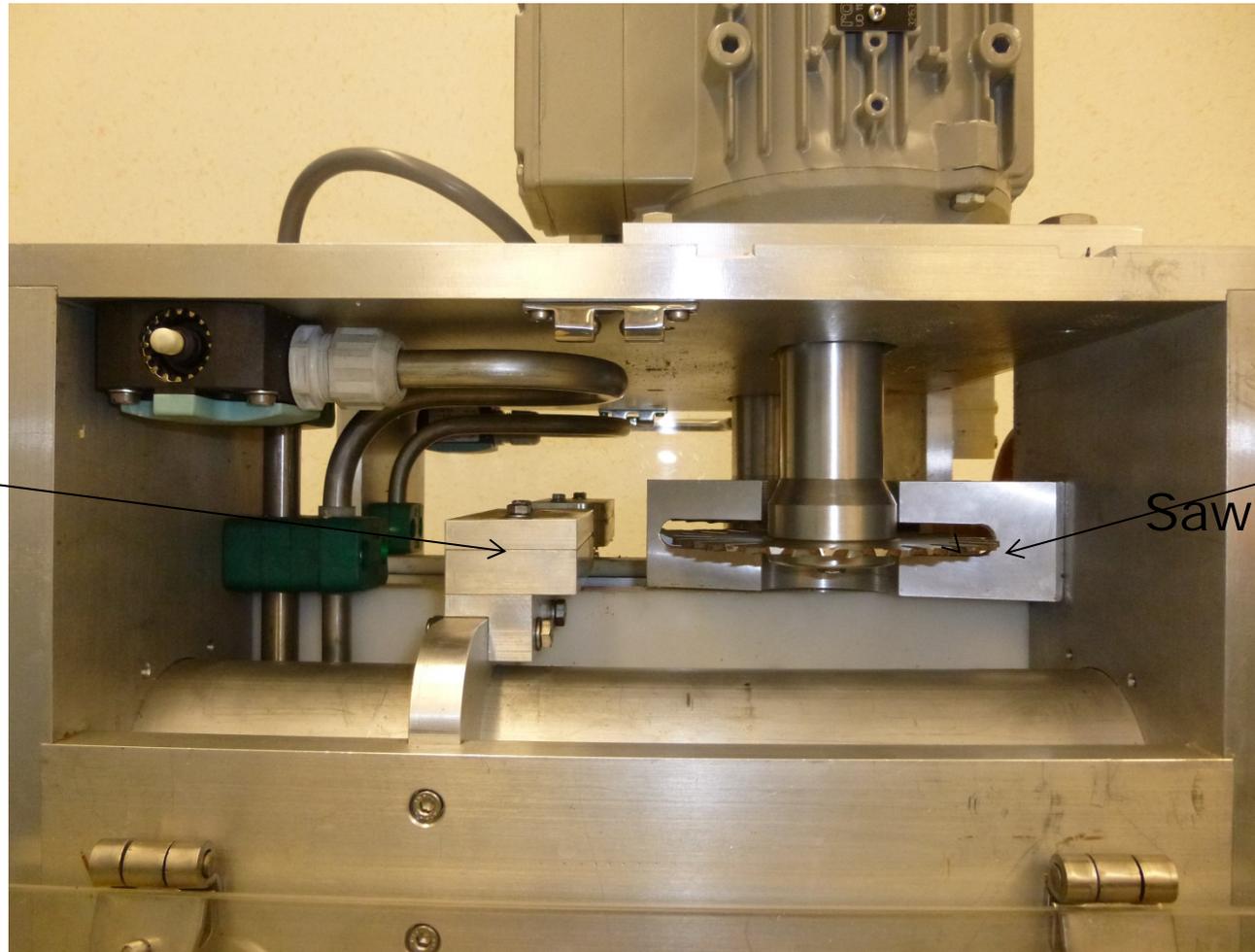




Developments in Piston Coring-3

Combination of sawing and cutting

Stanly
Cutting
Knife



Saw Blade



Developments in Piston Coring-4

NIOZ Core Cutter commercially available at Avaatech





Developments in Piston Coring-5

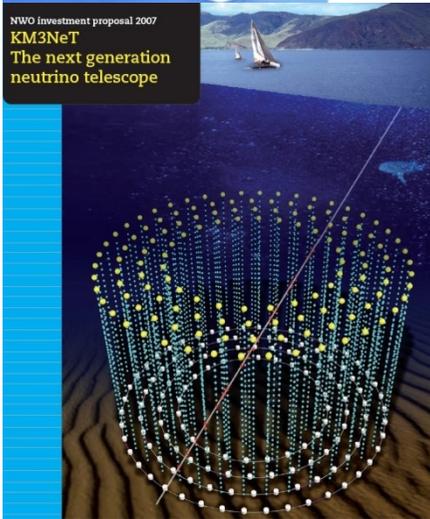
PC joint mill
for thick liners



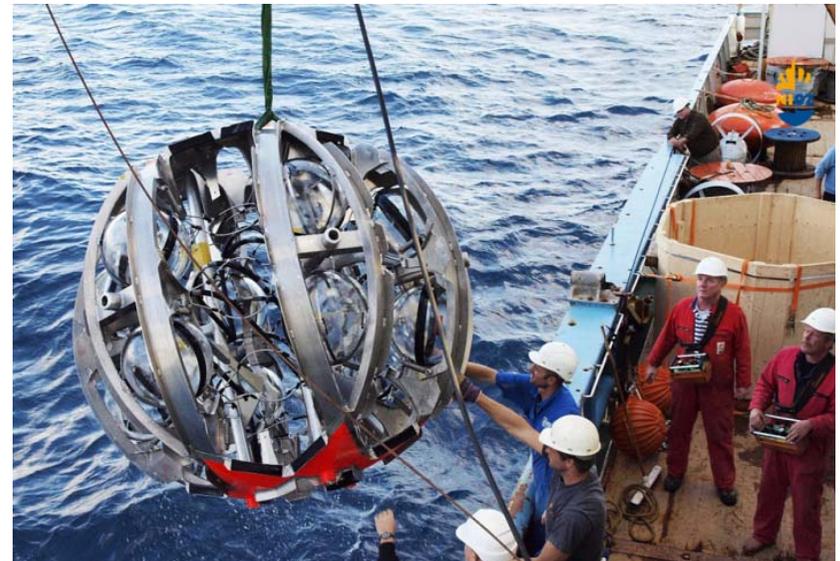
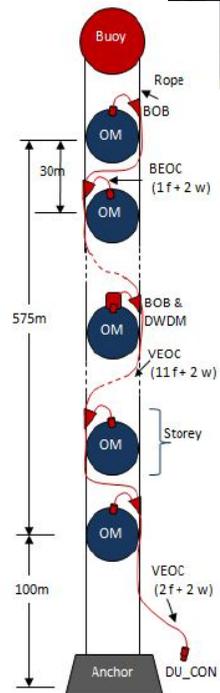


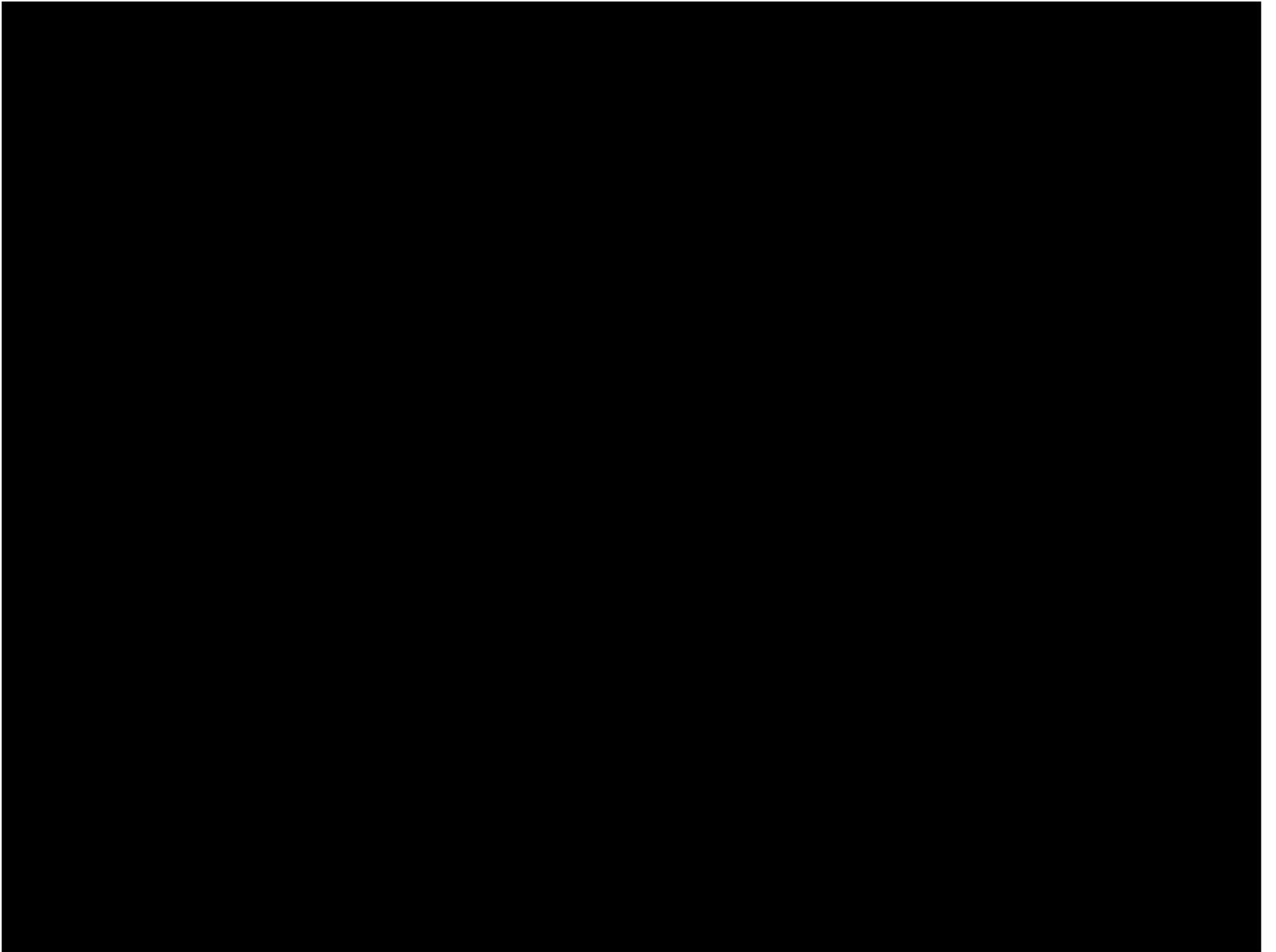
KM3Net deployment system

NWO investment proposal 2007
KM3NeT
The next generation
neutrino telescope



- Approved deployment system
- Successful trials with fibers & copper
- 3 deployment spheres in operation







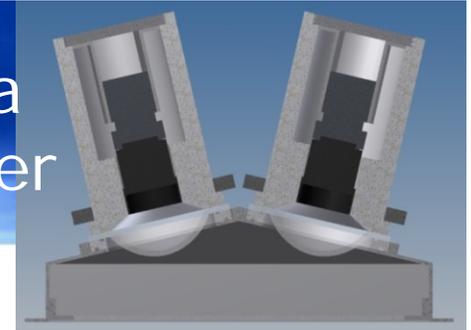
HD Stereo Photo Cam for coral reef habitat mapping

- Vessel or diver operated
- Stand alone or via umbilical
- 100 m depth rating
- 2 x webcam (forw + downw)
- Flash lights
- Laser beam scaling

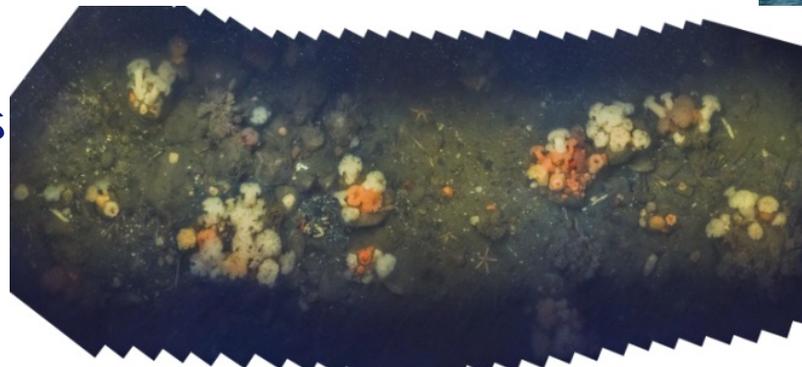
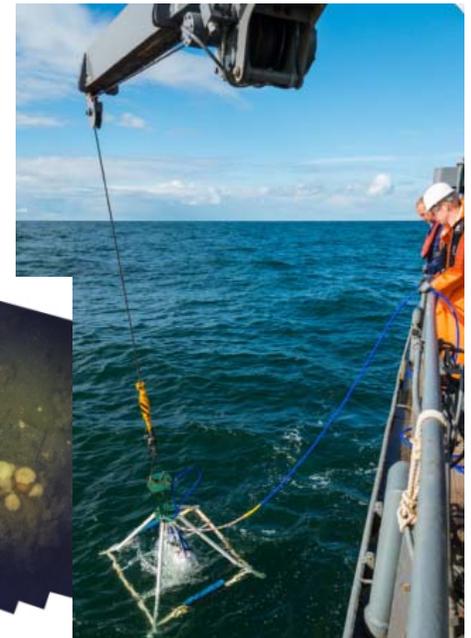
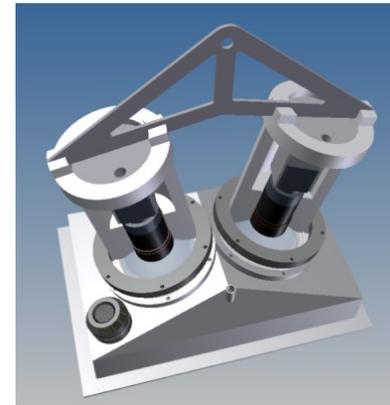




Water lens stereo HD-video camera for seabed imaging in turbid water



- Seabed imaging in turbid water
- Depth rating 300 m
- Opto-electrical cable
- Online video
- LED light system
- Automatic analysis and sizing
- frame size: 4008 x 2672 pixels
- 5 fps
- Allied GE4000C cam's



Court. A. Aguera/Imares



Mid Atlantic surface moorings - DUST



- Array between Mauretania and Venezuela
- Waterdepth 5 km
- 3 Mobilis buoys
- Measuring trans Atlantic Sahara dust flux
- 4 year deployment



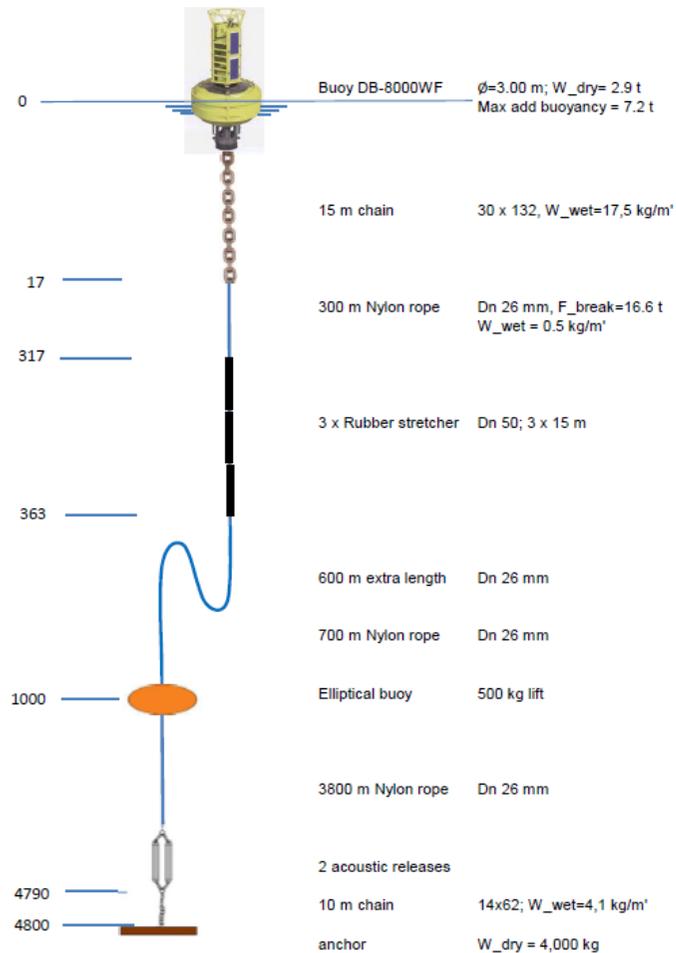


Mid Atlantic mooring design - DUST

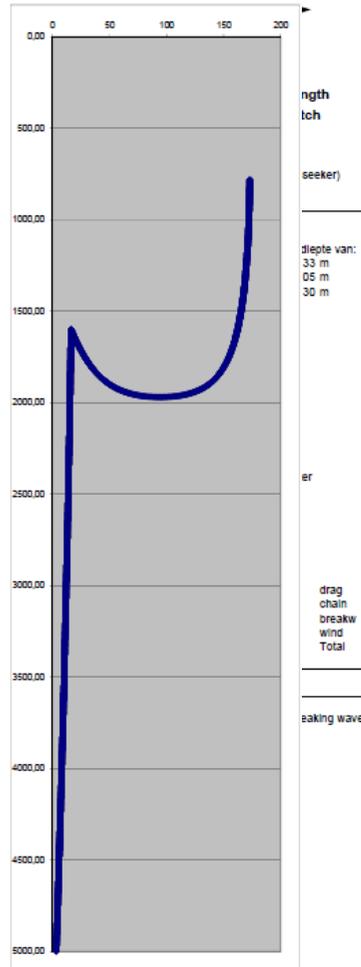


Mooring design

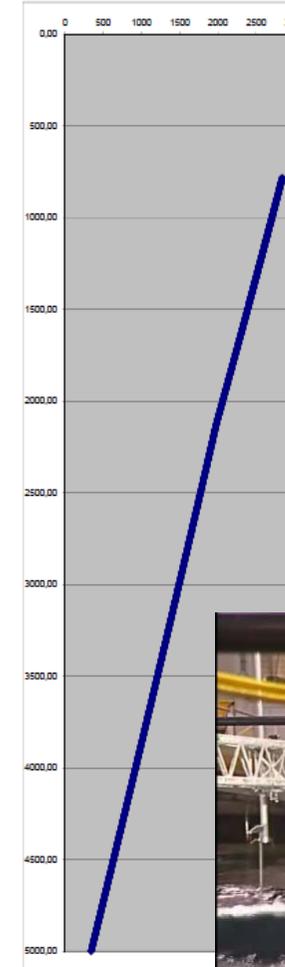
Surface mooring TRAFFIC - JBS
Position: 20N,21W; 12N,38W; 12N,49W



NO current, No WAVE, no wind



Normal current, WAVE 7,5 m, wind 11 Bf



- German and UK track record
- Dn 50 mm rubber stretchers
- In house calculations
- Model basin tests begin 2014 to validate





Shallow water sedimentation sensor

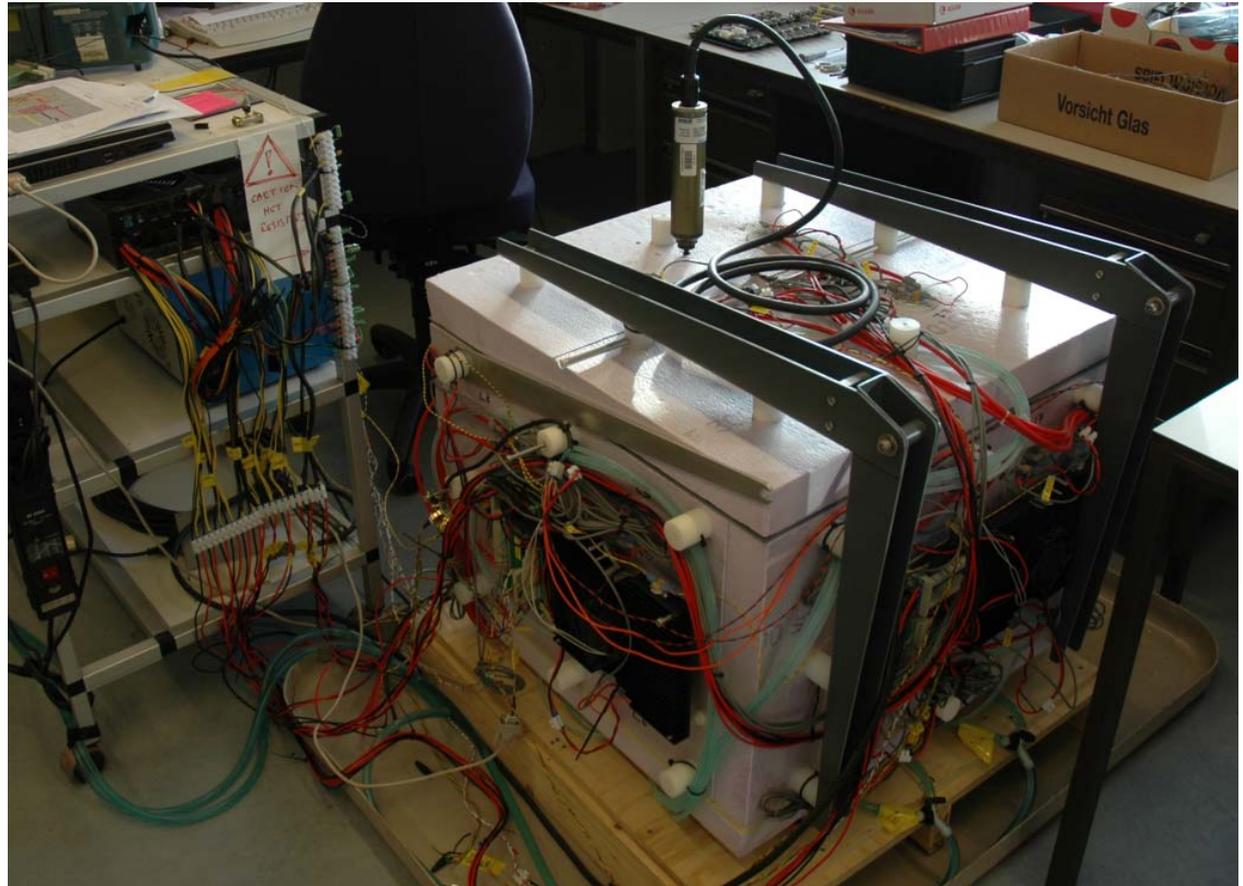
- Shallow water
- Dynamic sedimentation deposit
- Optical
- 2 mm accuracy
- 40 cm range
- 2 months endurance
- Very good results!





Hi accuracy temperature calibration tank

- Calibrating thermistors
- Down to 1 mK
(0,001° C)
- Volume 80 L
- Range: - 2° C – 30° C
(28 F – 86 F)





Miscellaneous...



- Automatic bulk sediment-cups incinerator
- Data loggers
 - extreme low power
 - T, D, 3D acceleration, heading
 - 6 x flex entry/connector
 - wifi
 - 6,000 m depth rating
 - lab version with touchscreen
- Treasure program – deep sea mining
- Blue Nodules H2020 – deep sea mining collector
- Re-organisation





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Thank you!