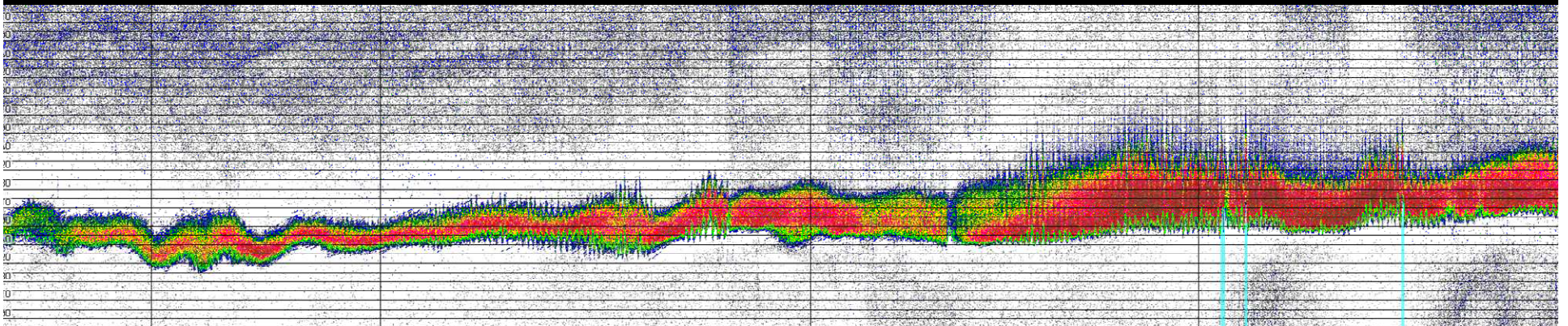# Use of acoustic data from fishing vessels

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IMARES , 2012
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Challenges of acoustic surveys

- Timing of the survey
  - Start of the spawning season
  - Availability of vessels

- Weather conditions & coverage
  - Adverse weather conditions
  - Miss core aggregations
  - Cause delays or interrupt synoptic coverage

Potentials of commercial data

Potentials of commercial data

- More data!
- Get insight into start an stop of the spawning season
- Control data, were all core aggregation covered?

  - Better coverage of the area, allowing for correction

  - Improved planning for following year (timing, N-S, E-W coverage)
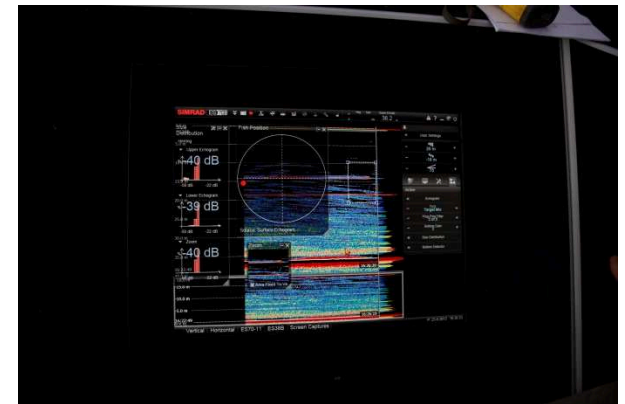
Calibrating two commercial vessels of the Dutch PFA fleet

FRANK BONEFAAS

Length x Breadth:

113 m X 18 m

Dead Weight:

5750 t

ALIDA

Length x Breadth:

100 m X 14 m

Dead Weight:

2690 t
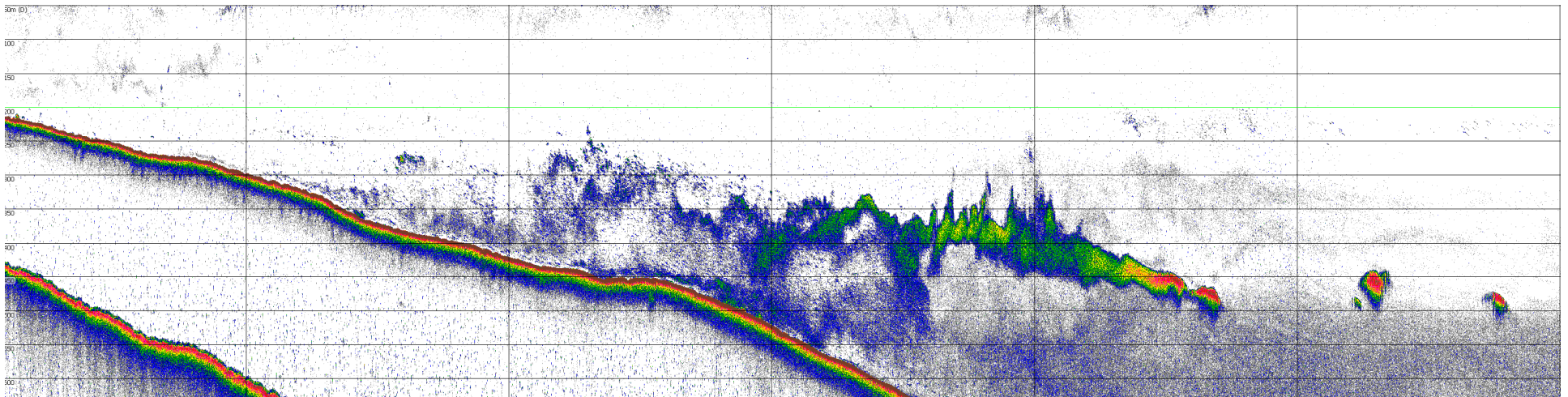

CAROLIEN

Length x Breadth:

126 m X 17 m

Dead Weight:

6550 t

Why Calibrate

- Check the correct functioning of the split beam echosounders
- Increase the accuracy of the data
- Eliminate as many uncertainties as possible
- Small differences in the echo can result in a huge bias of the outcoming biomass estimate
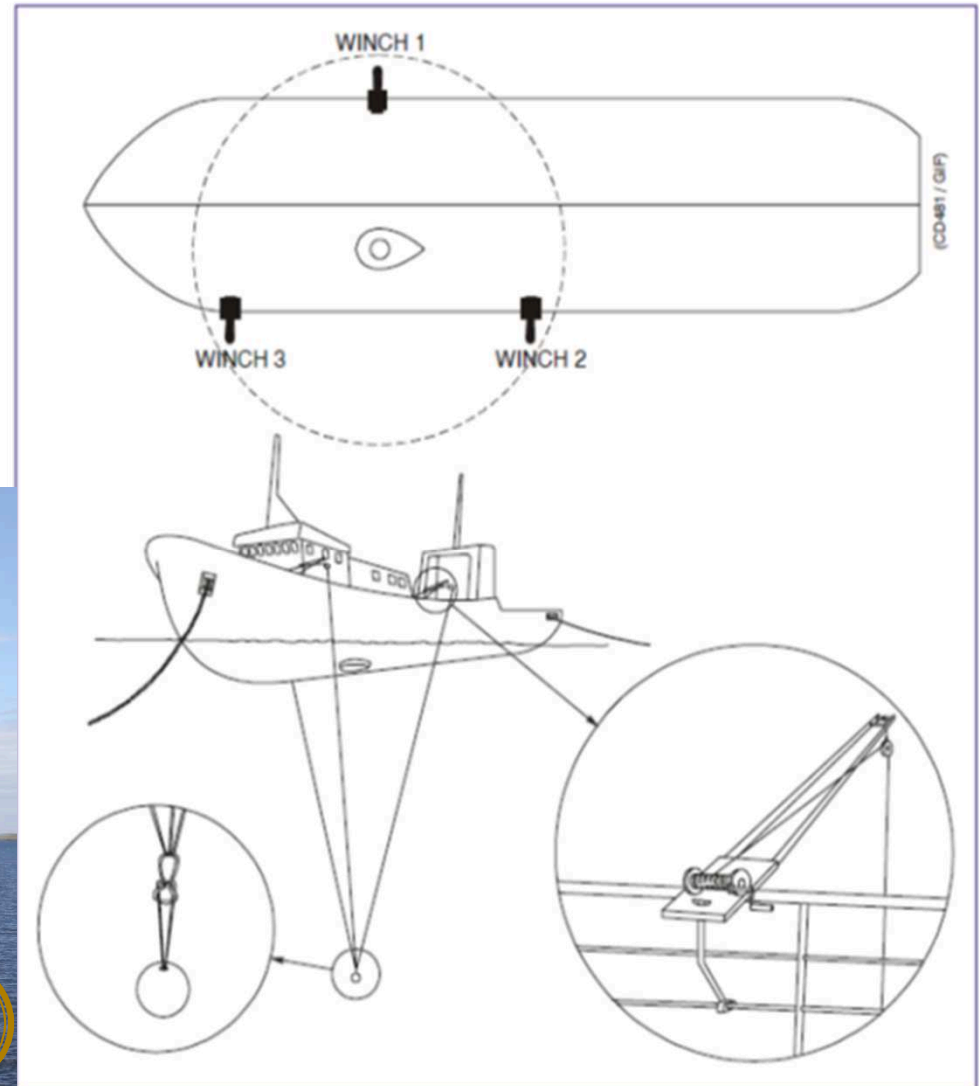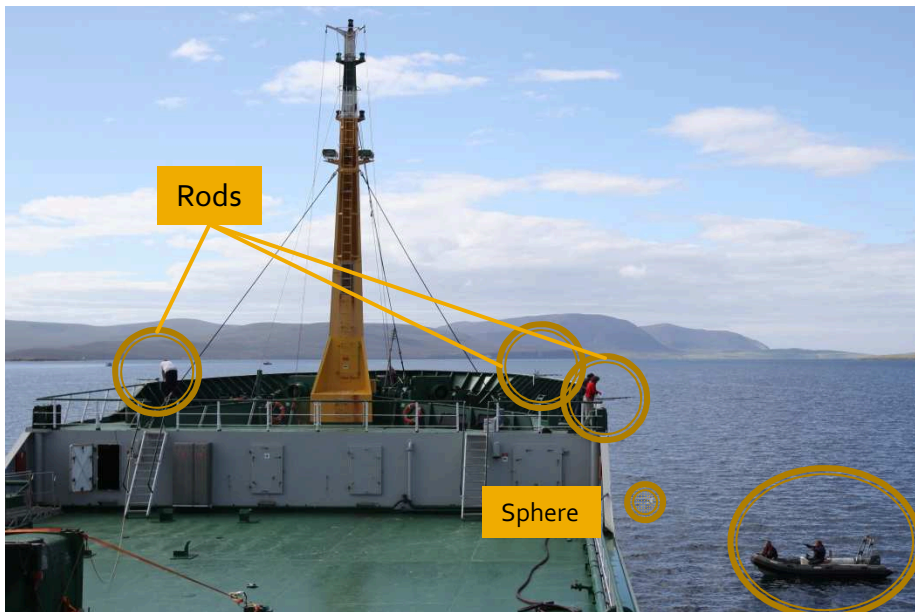
Calibration - Preparation

- Preparation:
  - Get ship sketches with position of echosounders

  - If possible measure the exact positions in dry dock

  - Prepare calibration equipment

Calibration - Preparation

- Attach the rods at the right spots on deck , so that the sphere is hanging in the centre of the targeted beam
- Position might be adjusted in case of strong currents

WINCH 1

WINCH 3   WINCH 2
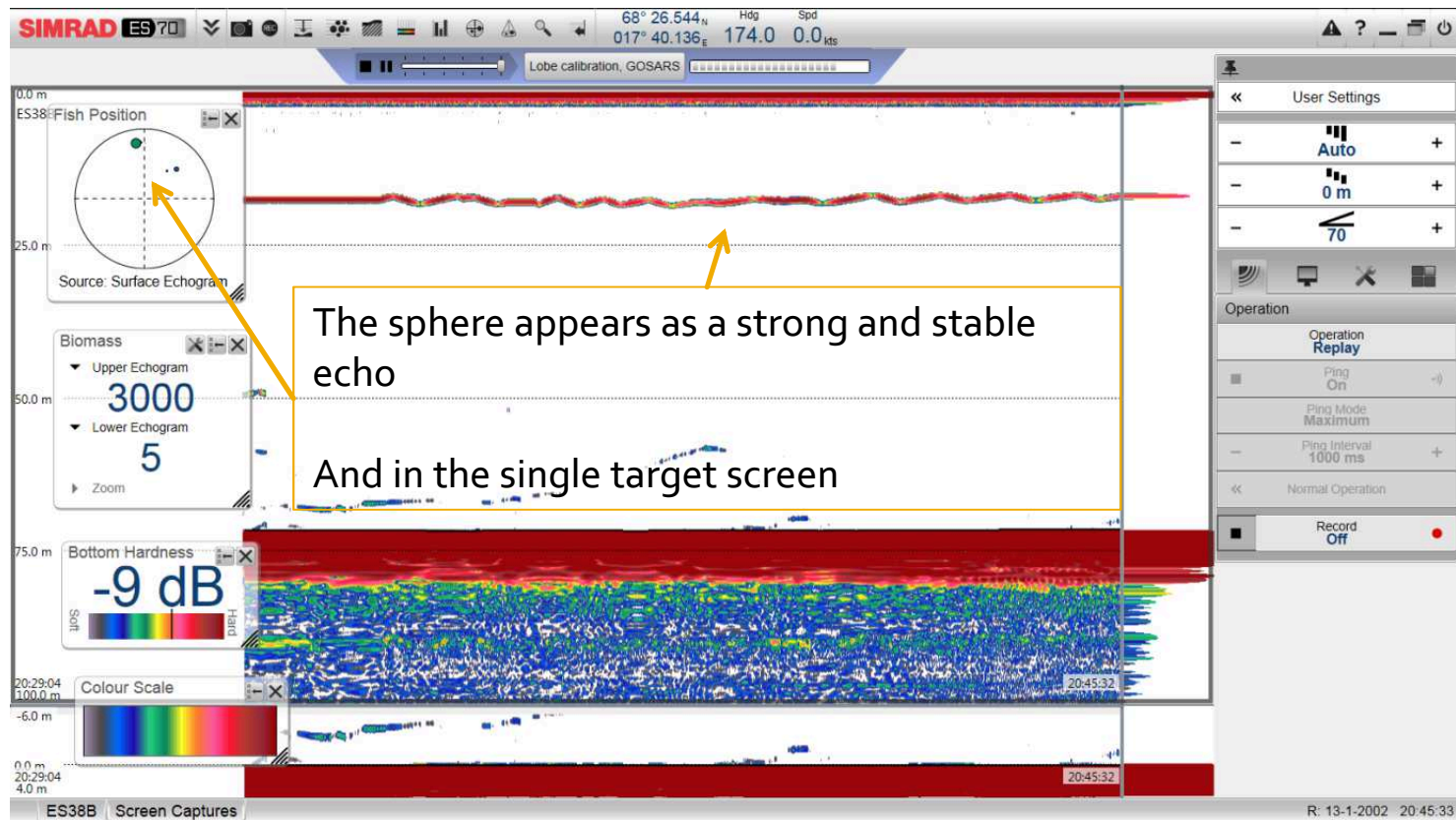
(CD481 / GIF)

Rods

Sphere

Calibration Preparation

- Get the line from winch 2 & 3 to the other side and connect it with line 1

- Attach the ball on the three wires and let it sink to app. 15m below the vessel
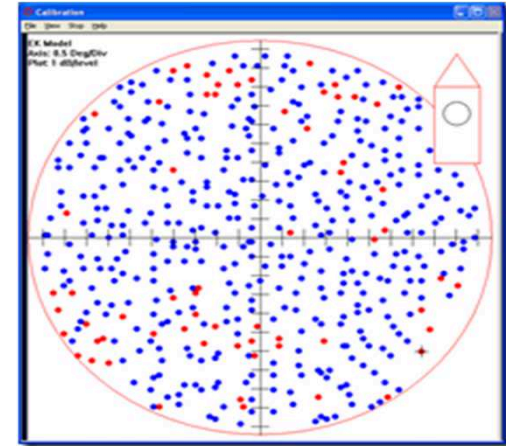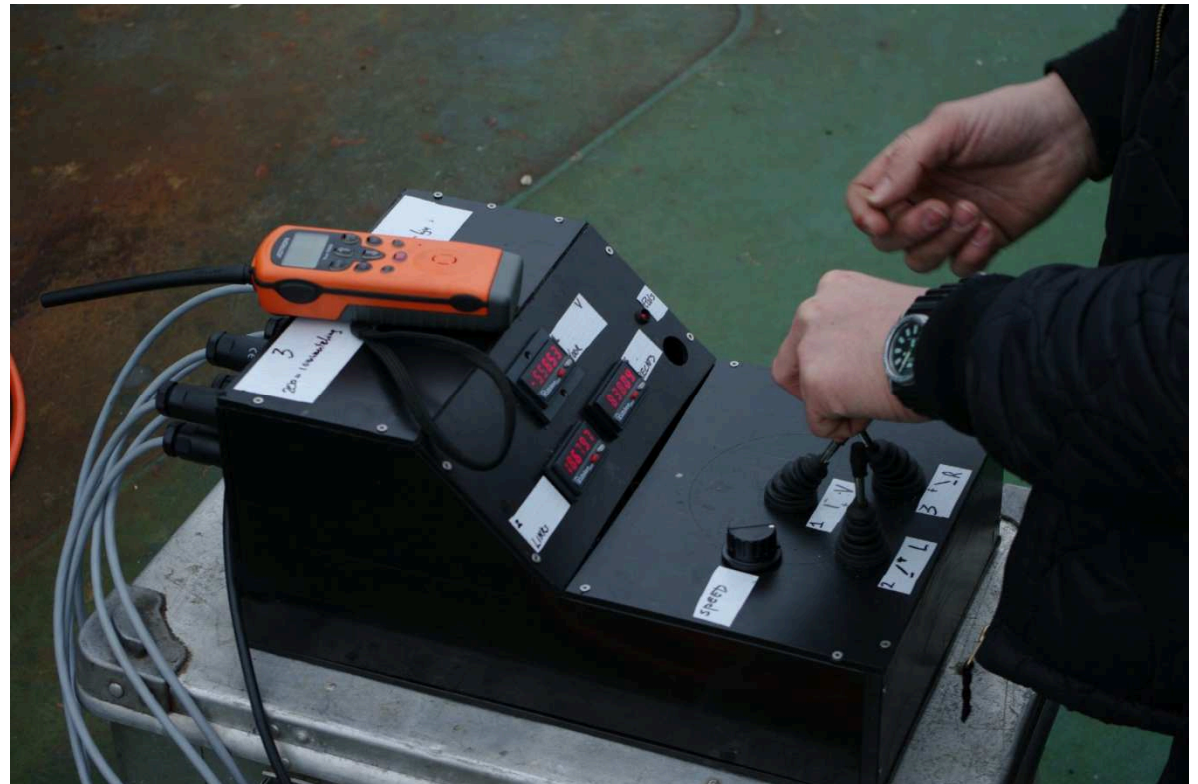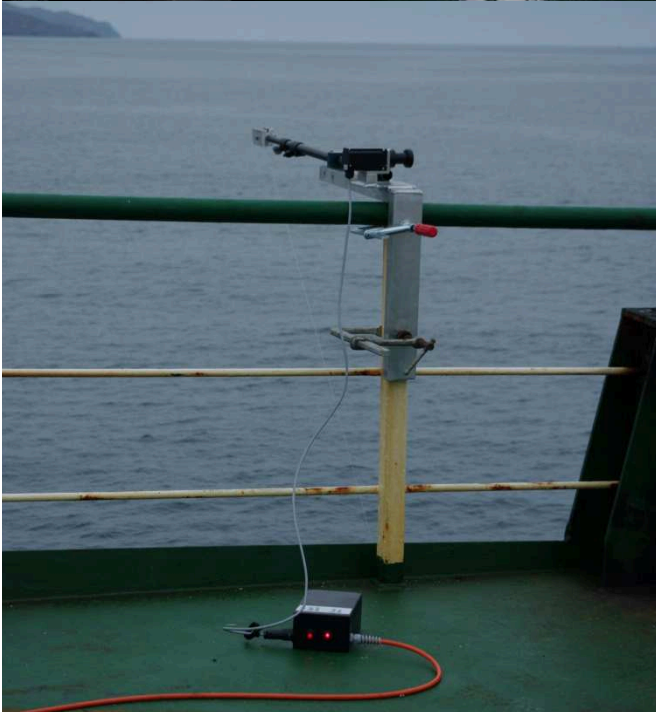
On the Bridge

- … If all goes right .

The sphere appears as a strong and stable echo

And in the single target screen

…. But most of the time this takes a while…

Collecting the calibration data

- Sphere has to be moved slowly in the beam

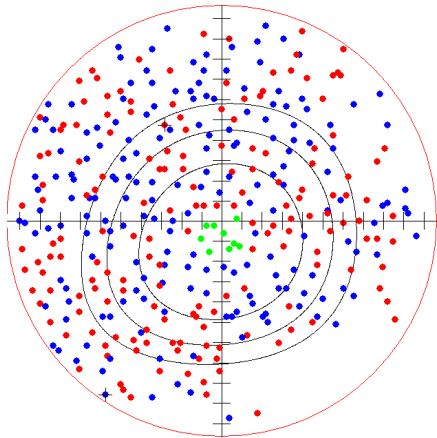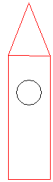- For 38 kHz ~ 1.5 m circumference
- For 200 kHz ~ 30 cm

Moving the sphere using motorised rods

Calibration results

Calculate the deviation of the collected values
from the beam model:

RMS   < 0.2   good

RMS   0.2-0.3 acceptable

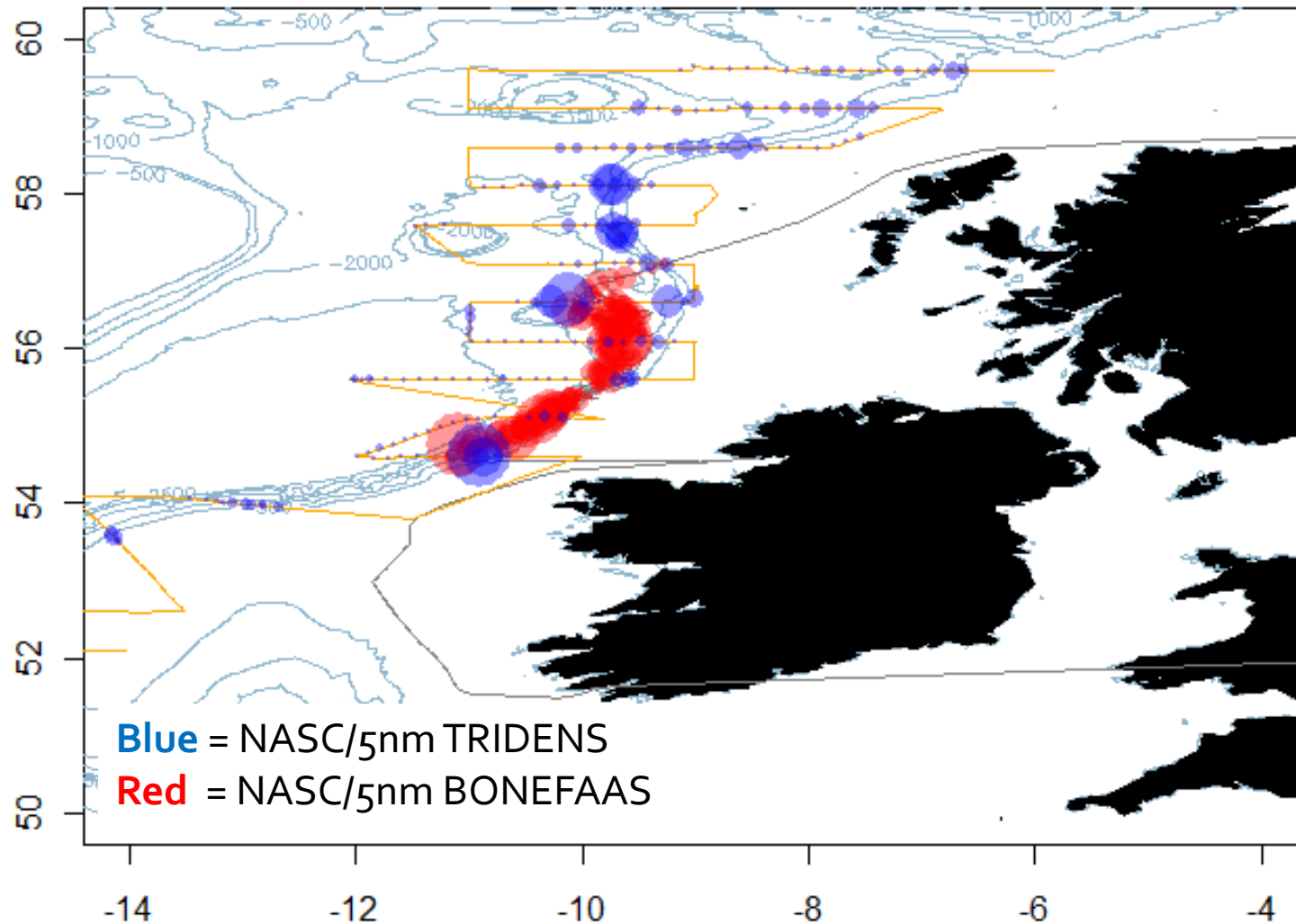RMS   >0.3   Start again
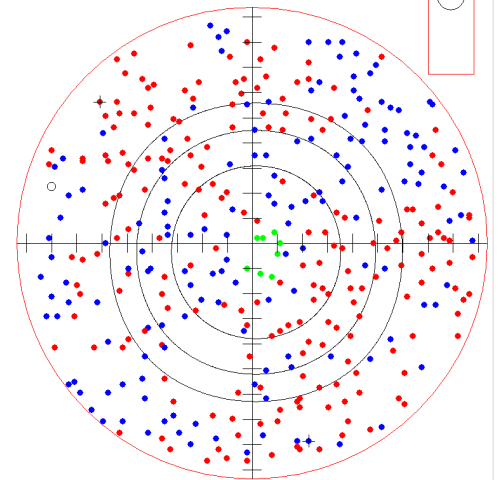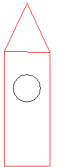
Survey design
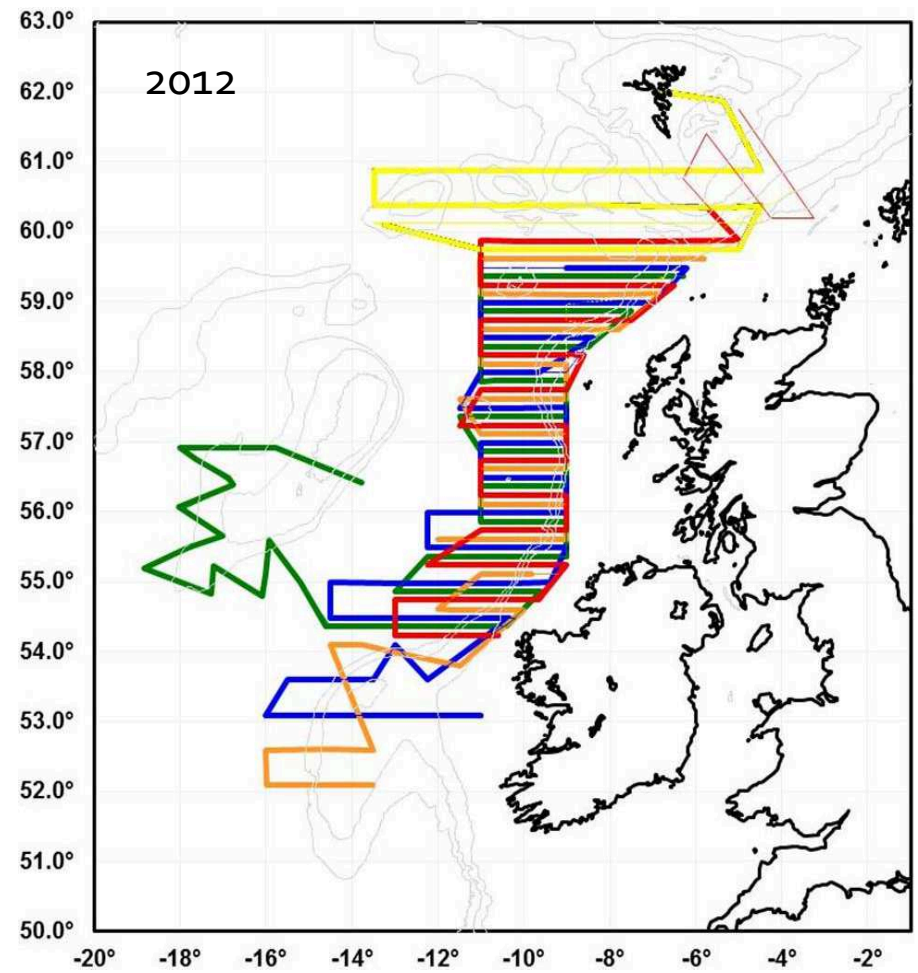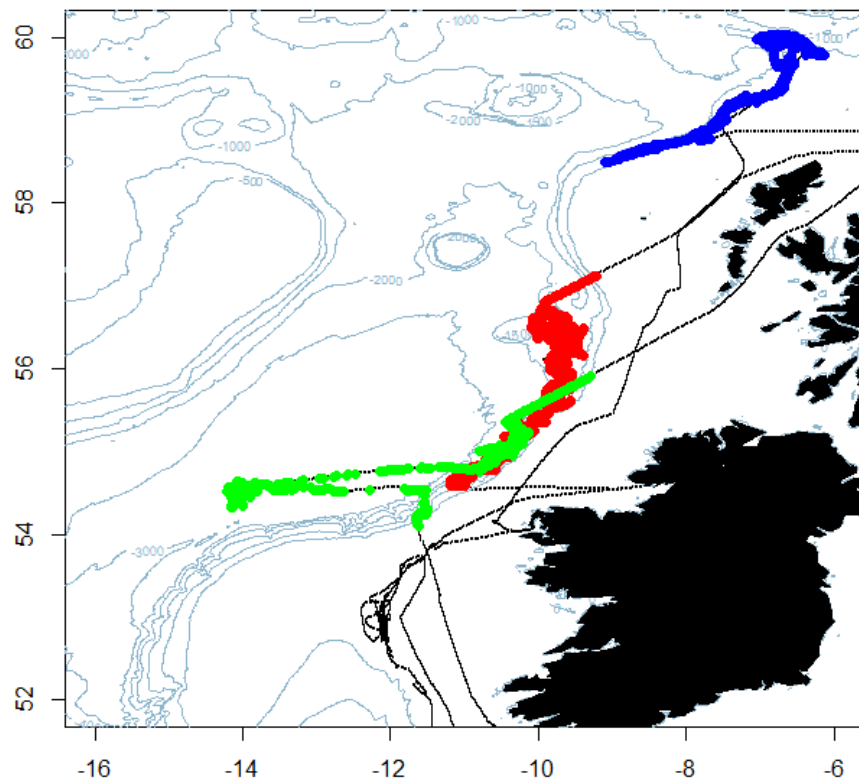
Acoustic data of commercial vessels

- Acoustic data was logged constantly
- Good quality
- Very good coverage with the survey
- Comparable NASC values

Point	Tridens	Bonefaas
1	4362.9379	953.2058
2	574.3816	5855.5270
3	1137.7496	2485.7315
4	1430.2213	6646.7454
5	7284.6086	2730.9368
6	1054.3426	2347.2769

Commercial and survey data

Blue = NASC/5nm TRIDENS
Red = NASC/5nm BONEFAAS

Any questions?