

# Crowd-Sourced Bathymetry



## The Problem

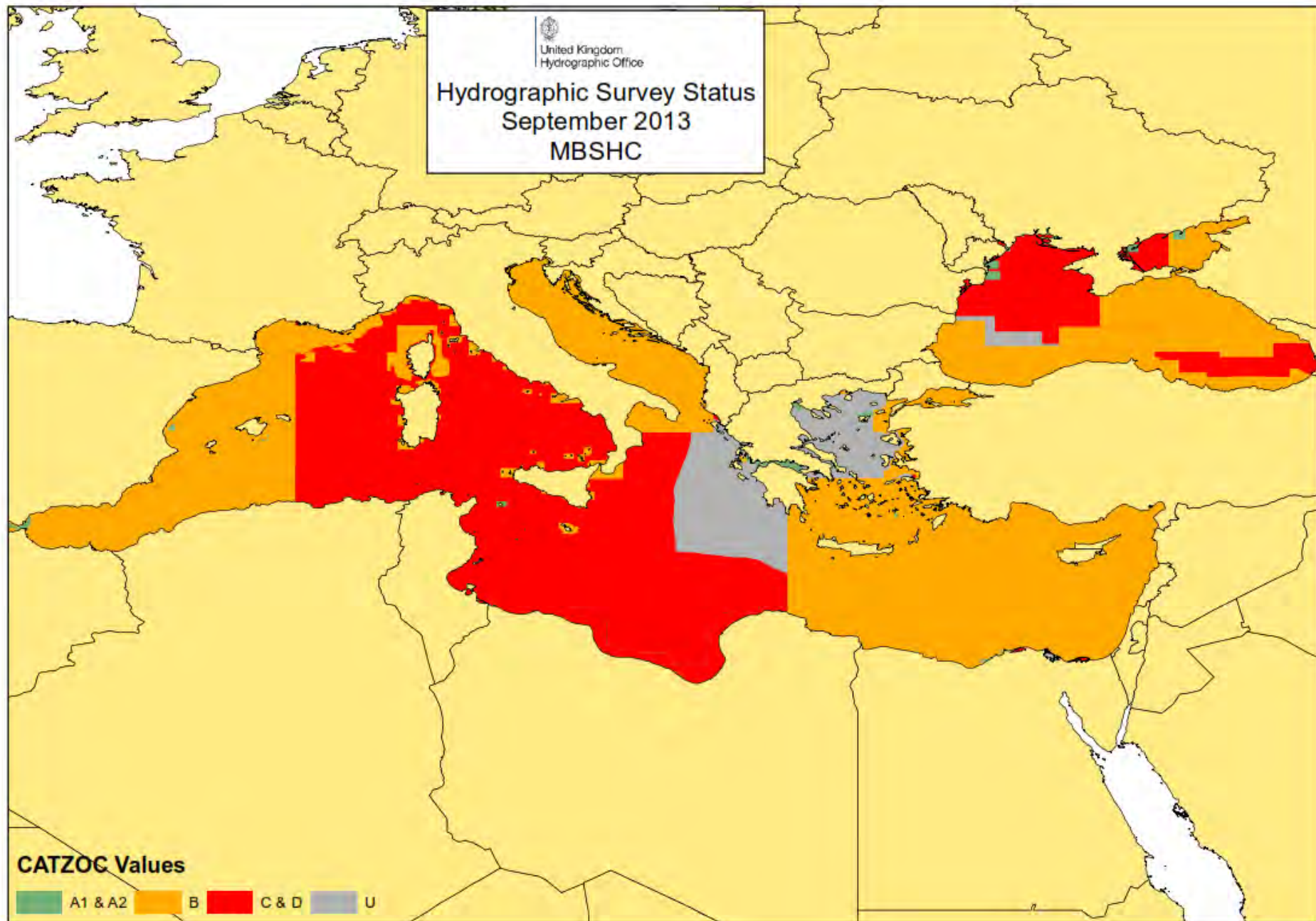
Less than 10 percent of the world's seas and oceans are surveyed to modern standards. There are higher resolution maps of the Moon and Mars than most of the world's sea and ocean areas.

There is no indication of any significant improvement, in the last three decades the numbers of surveying vessels has declined by 34% for offshore vessels and 35% for coastal vessels.

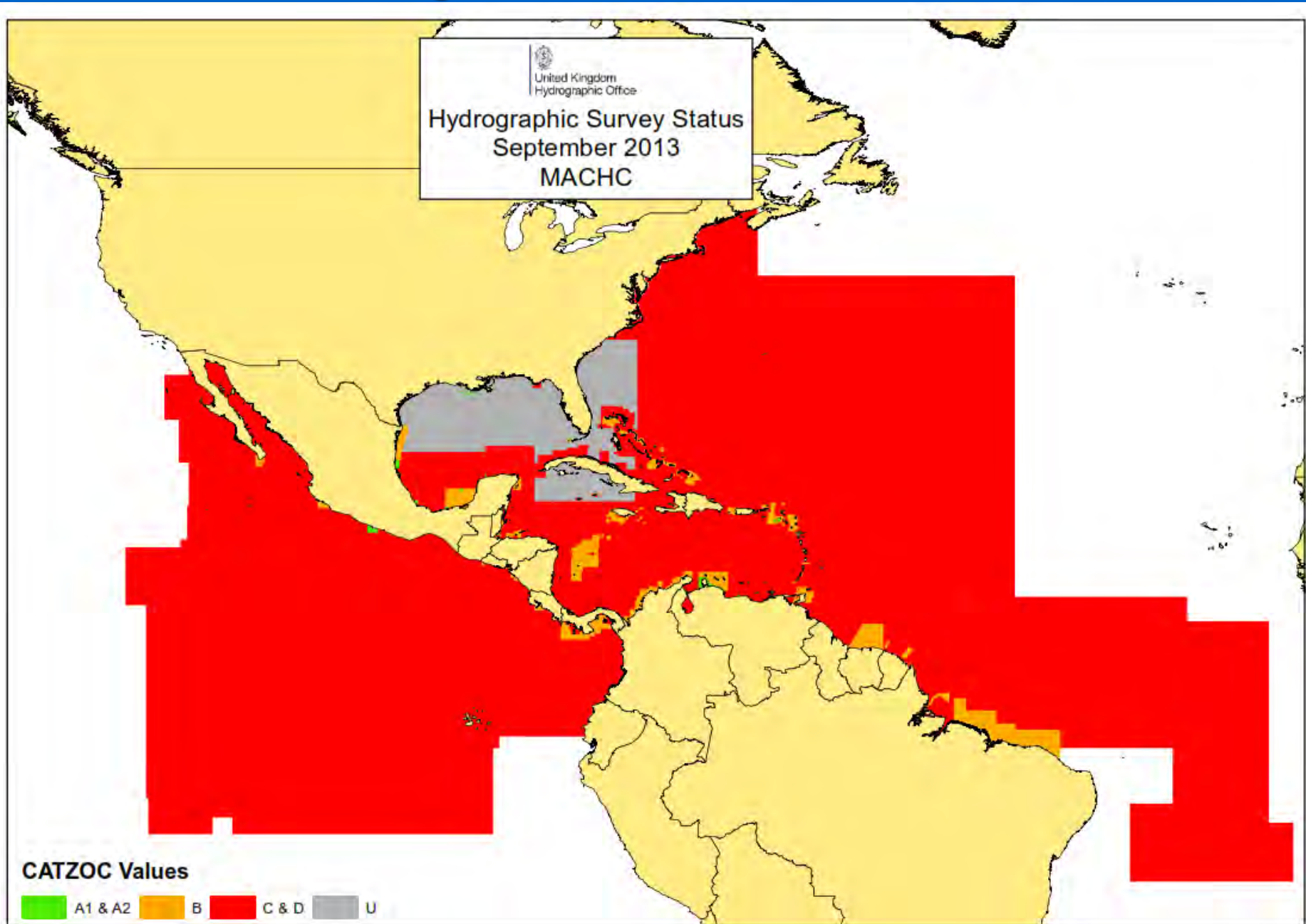
This reduction has not been matched by an increase in capacity through the use of more efficient technology or through governments opting to use commercial surveying contractors.



# Data Coverage in Mediterranean Sea



# Data Coverage in Caribbean Sea





# Former Survey Launches





# Collecting Depth Data





# Position fixing

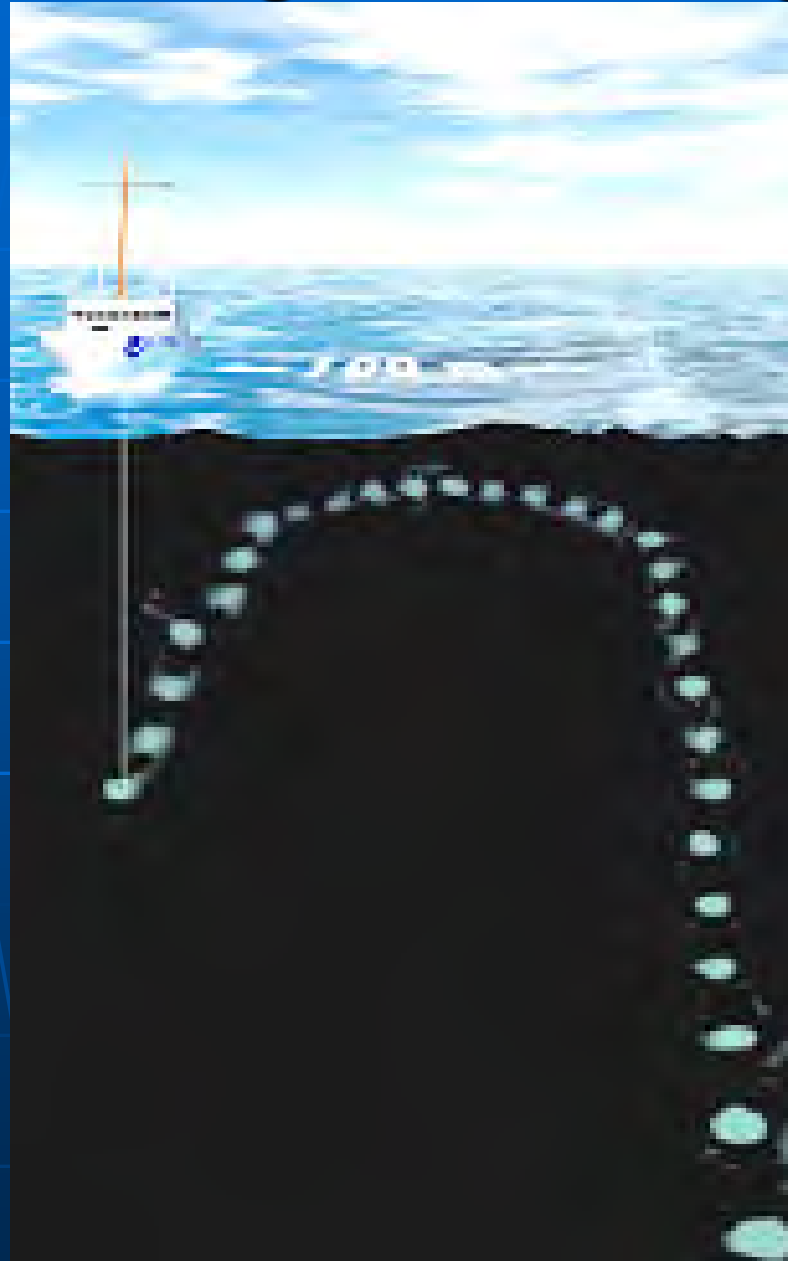


# Integrated survey system





# Leadline sounding data coverage

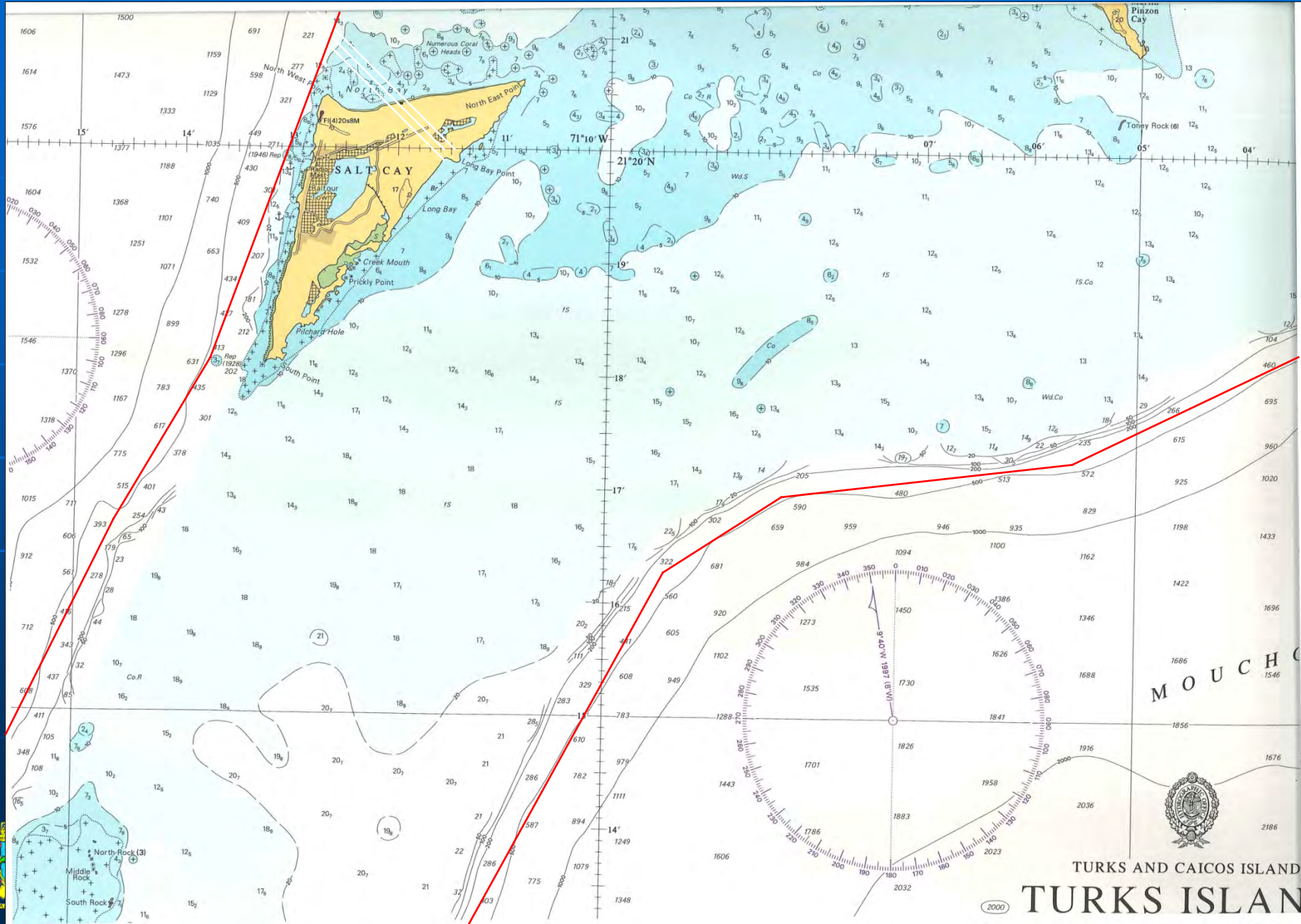


# Plotted sounding data





# BA 1441

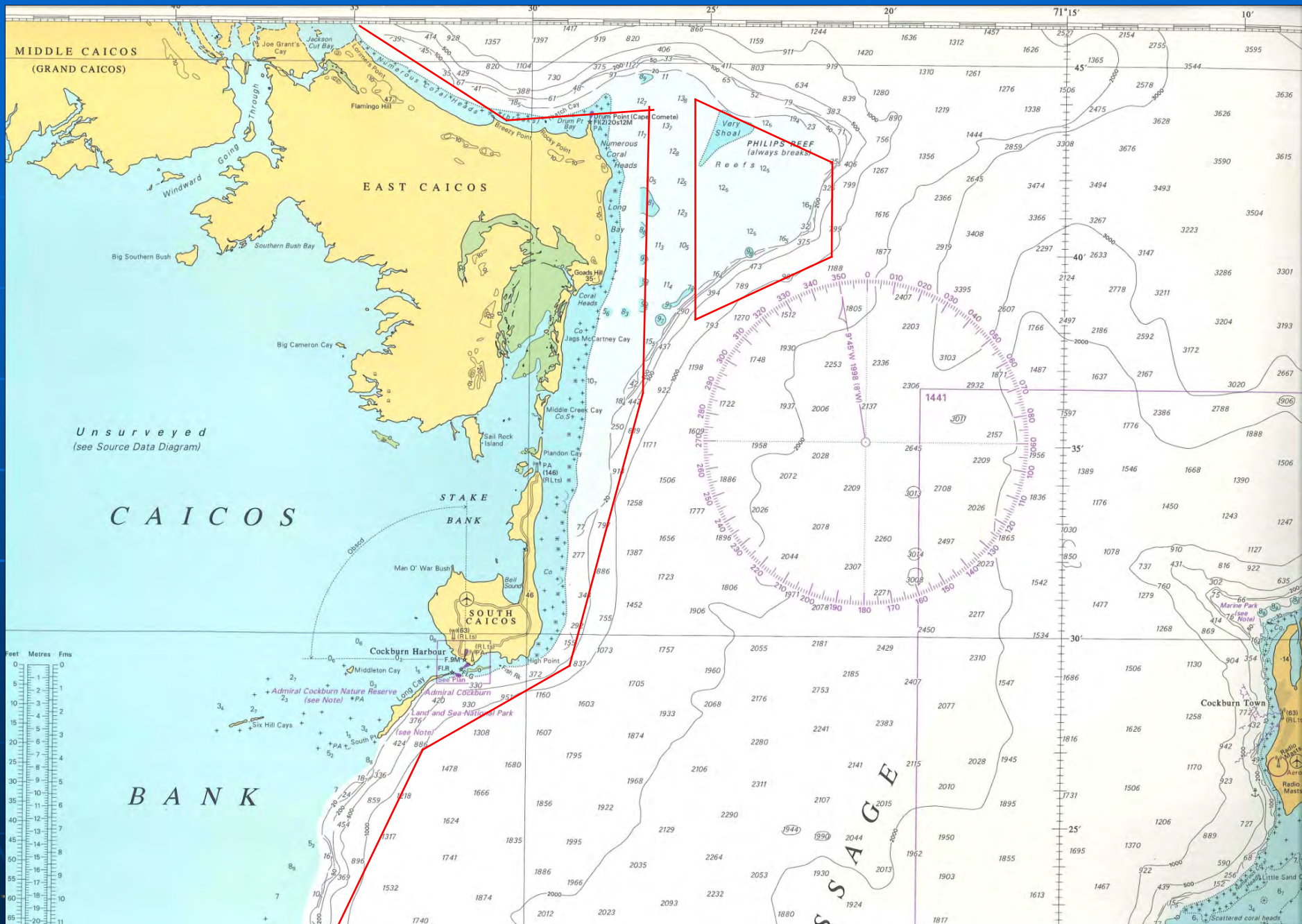


MOUCH





# BA 1450





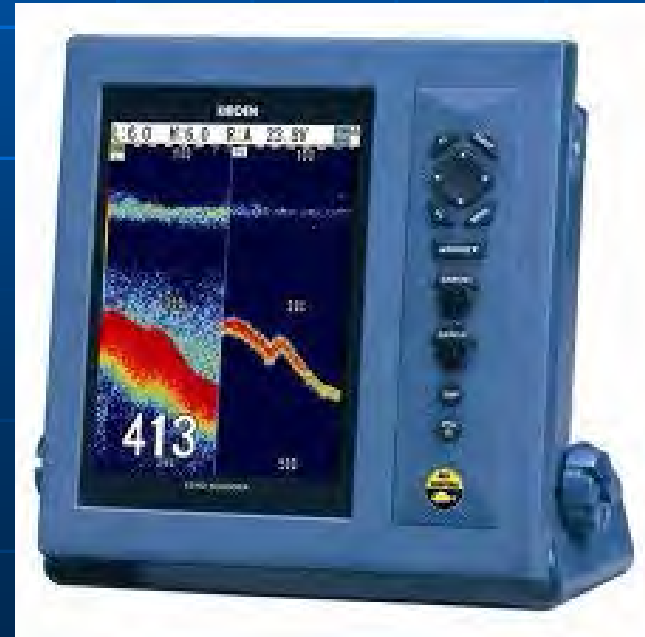
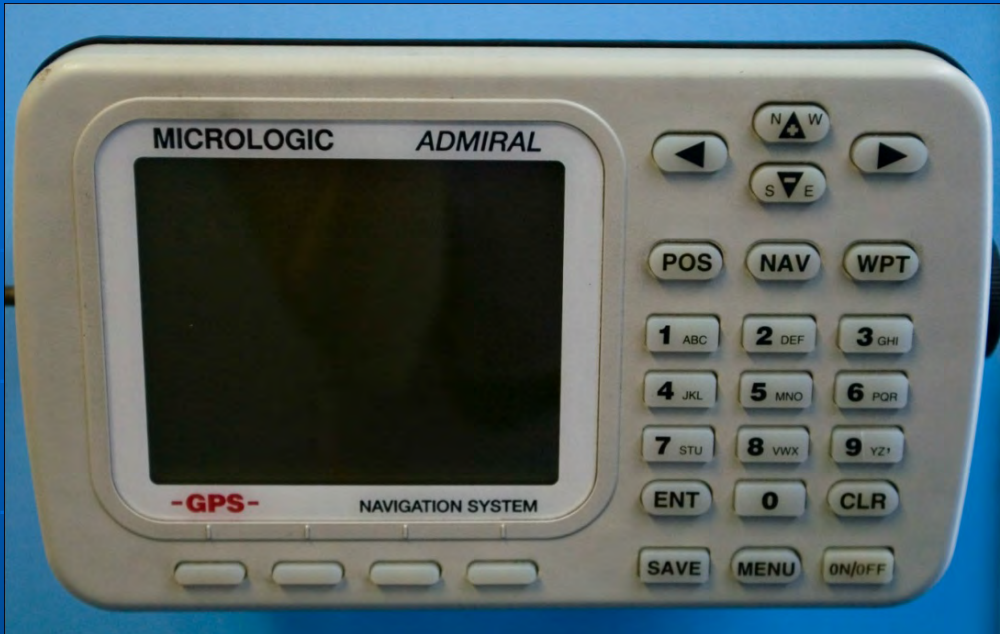


# Modern luxury survey launch

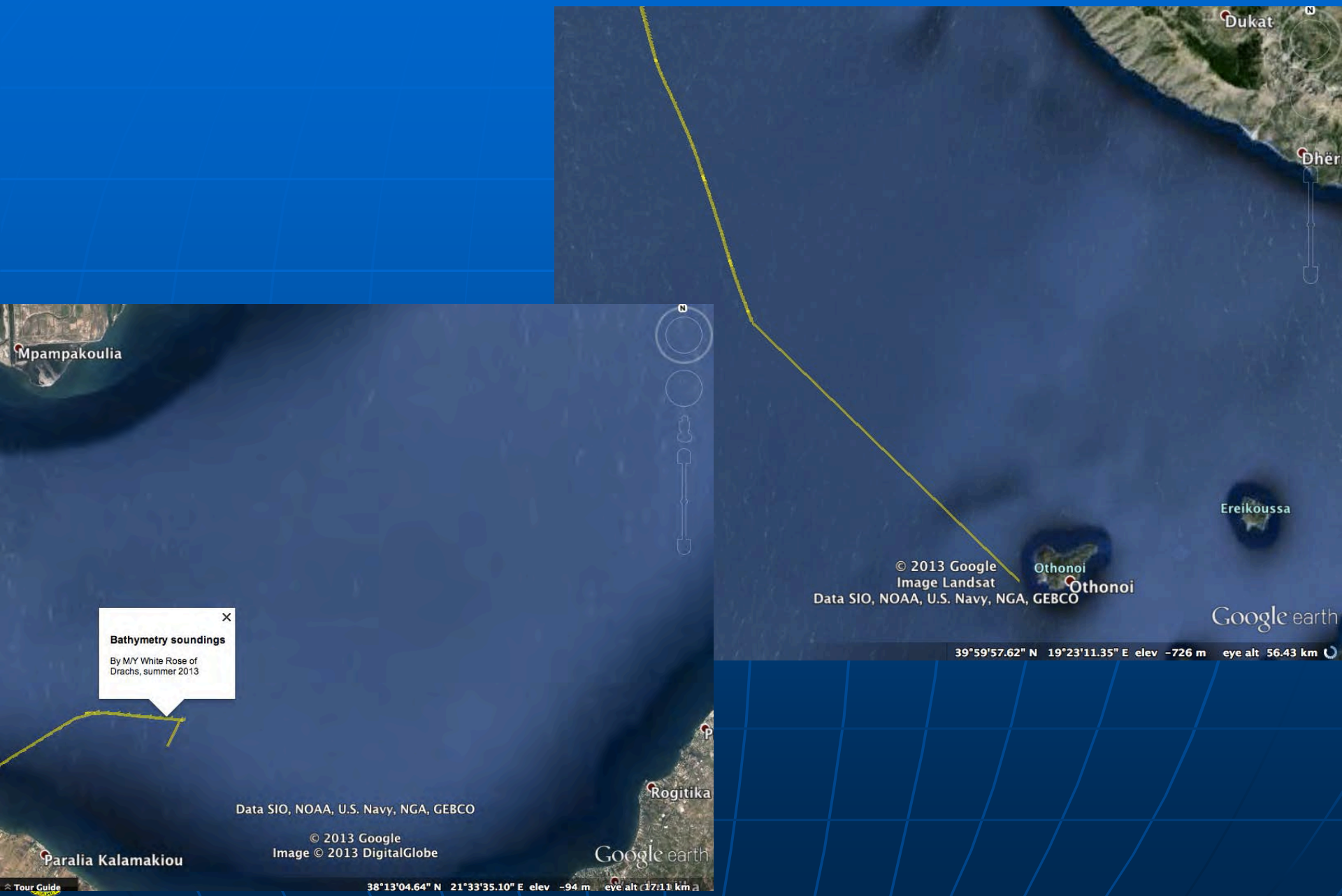




# Modern survey equipment



# WHITE ROSE Summer Track



# Crowd-Sourced Bathymetry (CSB)

- New IHO initiative
- Mariners self-help programme
- Logger in every ship
- Low cost – high impact
- Expanded trials in 2014
- Starting in 2015 ?





# DCDB viewer and data download



Crowd-sourced data



data uploaded at mariners' convenience

near real-time update and view



(if required)



new or revised chart

normal chart updating cycle

