

# The REV Ocean Science Program

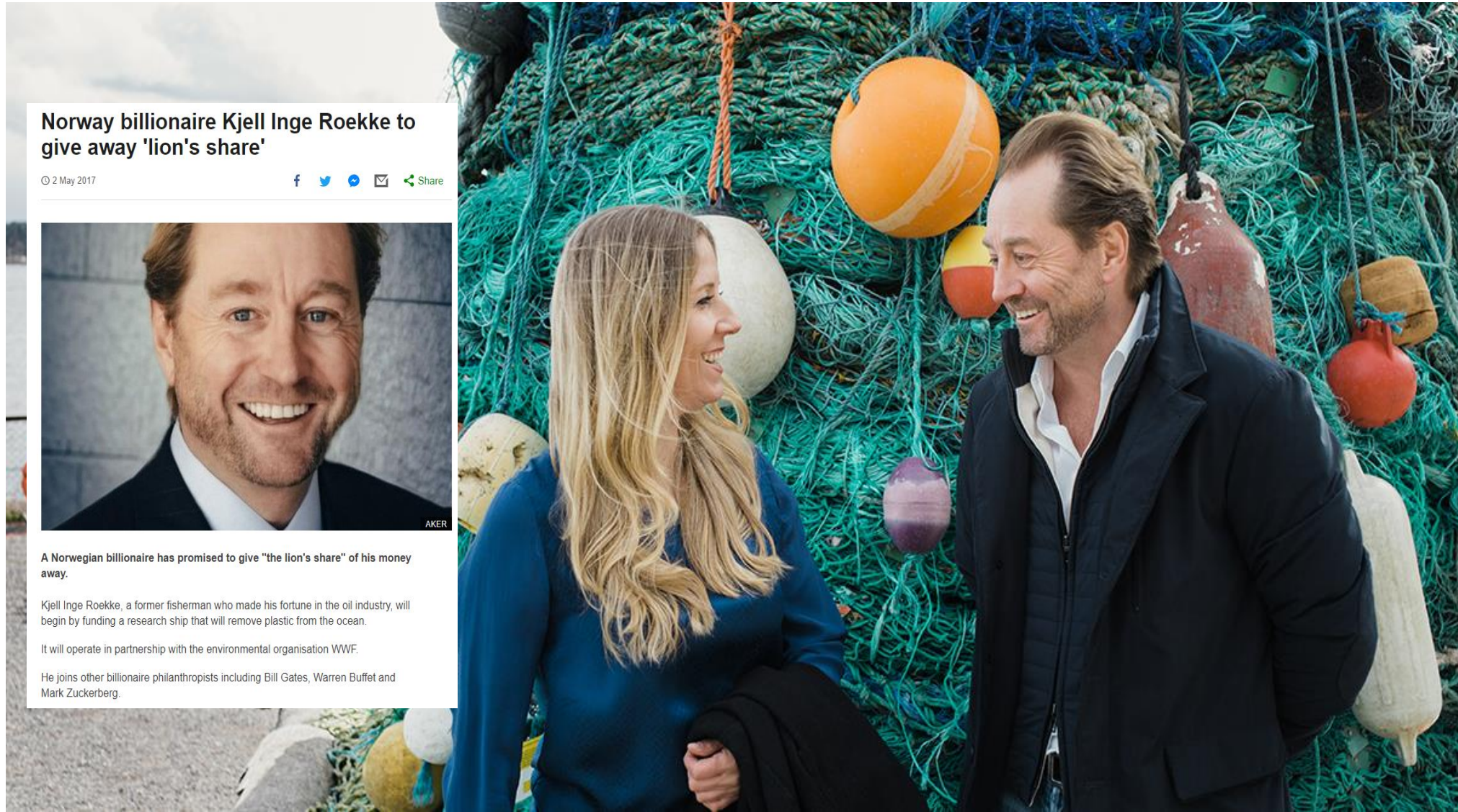
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# REV Ocean – A global rescue mission for the ocean



## Norway billionaire Kjell Inge Roekke to give away 'lion's share'

© 2 May 2017

f t b e Share



AKER

A Norwegian billionaire has promised to give "the lion's share" of his money away.

Kjell Inge Roekke, a former fisherman who made his fortune in the oil industry, will begin by funding a research ship that will remove plastic from the ocean.

It will operate in partnership with the environmental organisation WWF.

He joins other billionaire philanthropists including Bill Gates, Warren Buffet and Mark Zuckerberg.

# Family group structure

Kjell Inge Røkke

100%

Philanthropic activities

The Resource Group TRG AS

Commercial activities

REV Ocean Inc  
REV Ocean AS



Plastic REVolution Foundation

Ocean Data Platform Foundation

Other initiatives: VI stiftelsen, Aker Scholarships ++

Aker ASA



- Aker ASA is a Norwegian industrial holding company established in 1841
- Ownership in the following companies: Aker BP, Aker Solutions, Akastor, Kværner, Ocean Yield, Aker Biomarine, Aker Energy and Cognite



Vision: One healthy ocean

Mission: From curiosity to  
understanding to solutions





# REV Ocean is a unique vessel

**REV** Ocean

- The world's most advanced research vessel
- World-wide operations, extreme endurance
- Polar code certified
- Moonpool
- Physical sampling down to 6000m
- Mapping down to 8000m
- Facilities for 55 (90) scientists

Onboard Helicopter



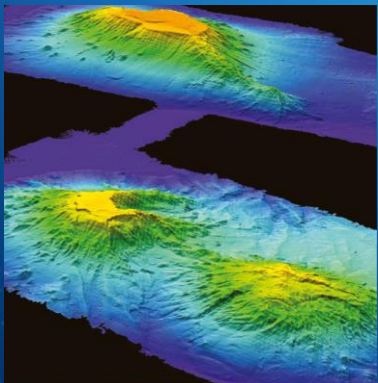
ROV – Kystdesign Supporter



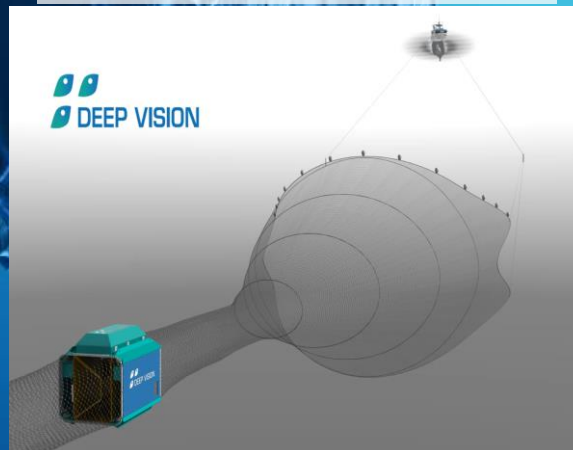
Triton 7500/3



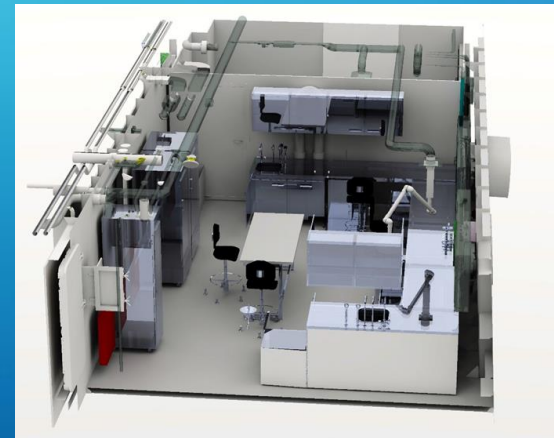
Full suite of  
Kongsberg hydro  
acoustics

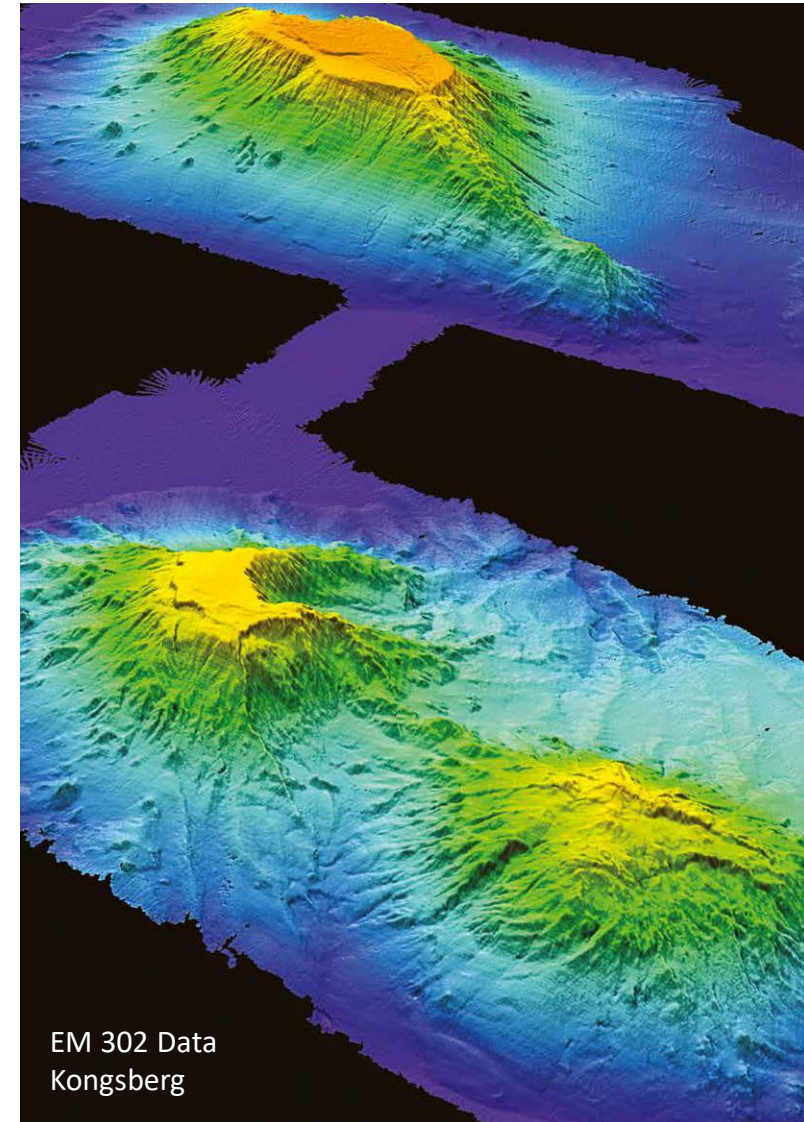


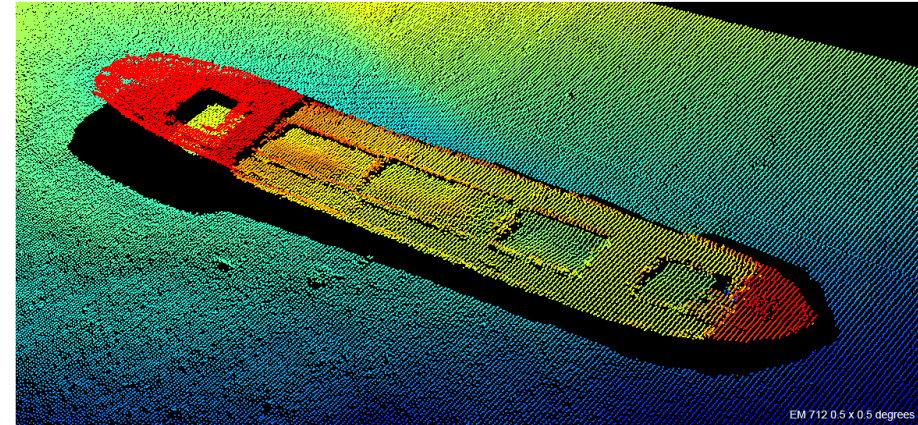
Pelagic trawl system



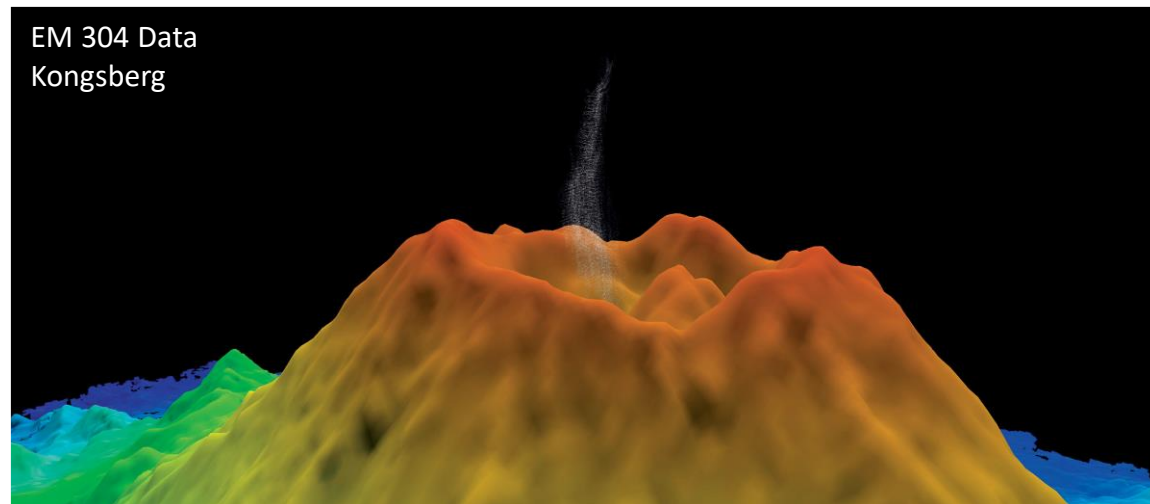
8 laboratories



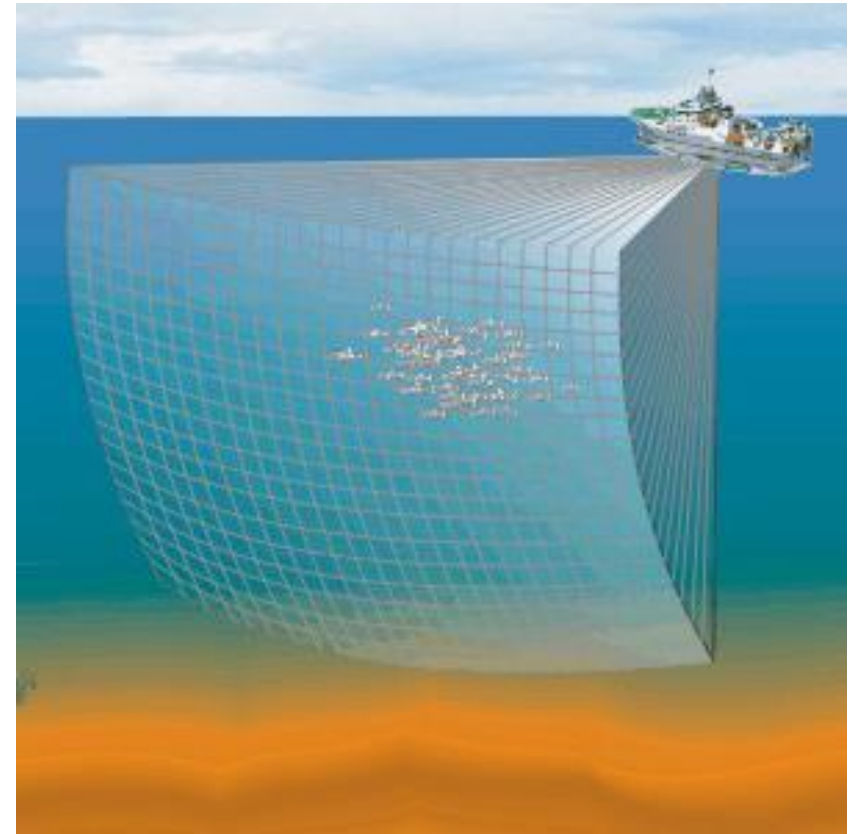




EM 304 Data  
Kongsberg







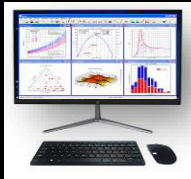
# State of the art equipment



Meteorological station



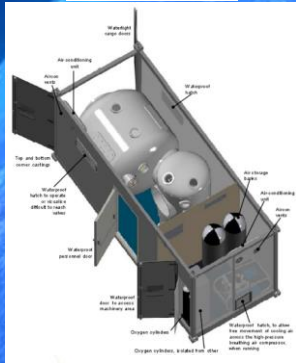
Wave radar



Scientific computers and software

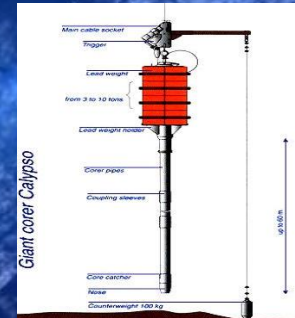


Trawls and Scantrol  
Deep Vision

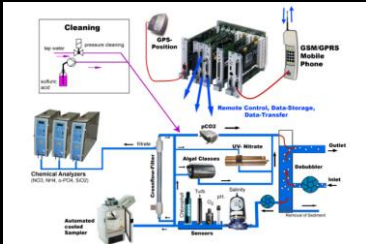


Containerized decompression chamber

REV is fitted for but currently does not include



Deep sea coring equipment



Ferrybox underway measurement system



Mini-ROV



AUV



CTD  
- Conductivity  
- Temperature  
- Depth



Expedition equipment & "toys"

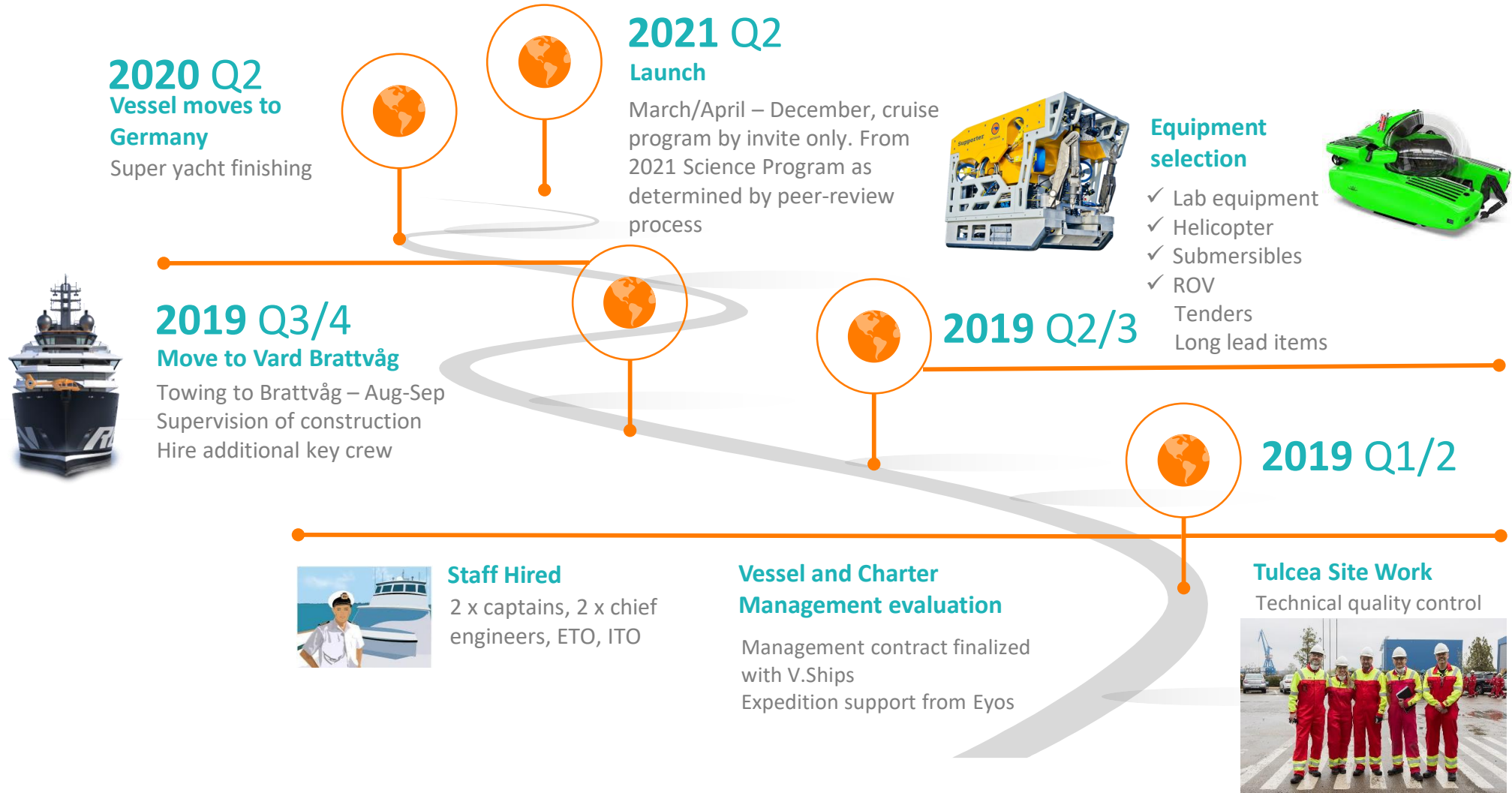


Gravimeter

# REV Ocean is a communication platform



# Operational milestones



# Science Program

## Focused on the REV vessel:

- Understanding to solutions
- Gaps in data / understanding

## Leading to:

- 1) Technical solutions
- 2) Policy solutions
- 3) Industry solutions



## Science and innovation must be:

- Excellent (peer-reviewed)
- Solutions focused
- Innovative
- High risk/high reward projects
- Multidisciplinary

## Focal Areas:

Overfishing and environmental impacts of fishing



Plastic pollution: planetary boundary threat?



Climate change and ocean acidification



## Priorities:

REV Ocean

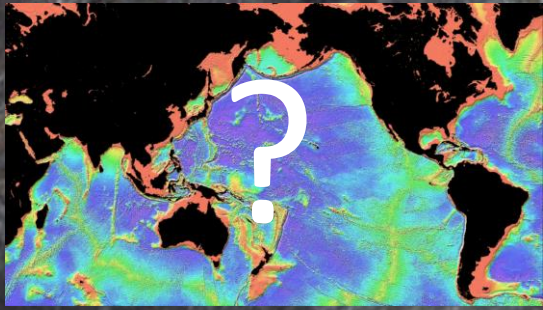
1. Assessment of fishery resources
2. Risk to non-target species & habitats
3. Risk of new fisheries

1. Distribution & transport
2. Impact on ecosystems & functions
3. Impacts on threatened species
4. Ecotoxicology & human health

1. Assess feedback and tipping points
2. Biological carbon pump and C sequestration
3. Role of ecosystems in climate mitigation
4. Impact on biodiversity, ecosystem function and services

Solutions: technological innovation & driving policy change

# Large science proposals (>10)



Geographic area of operation identified by vessel scheduling workshops

Saves a large amount of wasted effort by researchers

Enables the science, expedition and charter programs to be planned ahead



Call for pre-proposals by NRC and REV Ocean



SIC



Preproposals selected for full proposal

Enables us to plan the refereeing process



Full proposals submitted to NRC and sent for peer review



Peer-review committee grades and ranks proposals



SIC



Top-ranked proposals selected

Approval by Board



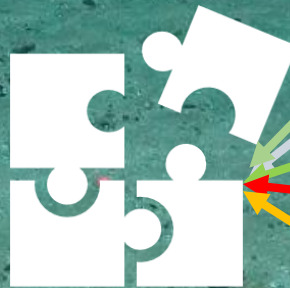
# Small Proposals



Capacity for  
55 (90) non-  
crew



Proposals selected  
on excellence & added  
value



Call for small proposals on  
the basis of what is supported  
in large proposals

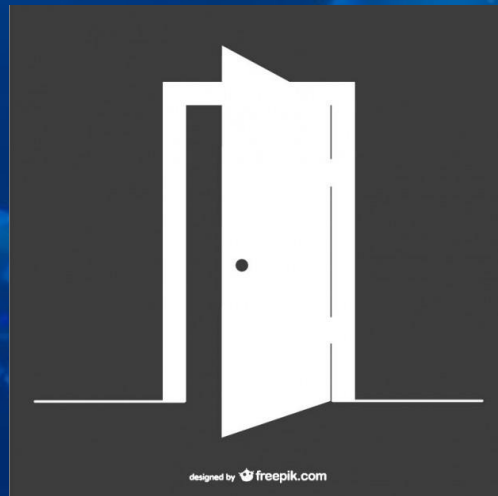




# Open call

**Problem:** Technology development proposals require a commitment in terms of resources / partnership prior to applying for grants (e.g. to Norwegian Research Council).


**Solution:** Open door for partnerships where there is a small commitment for places on the ship over extended time (up to 5 years). Judged by SIC on same basis as small grants.



SIC



# Current Private Research Vessels



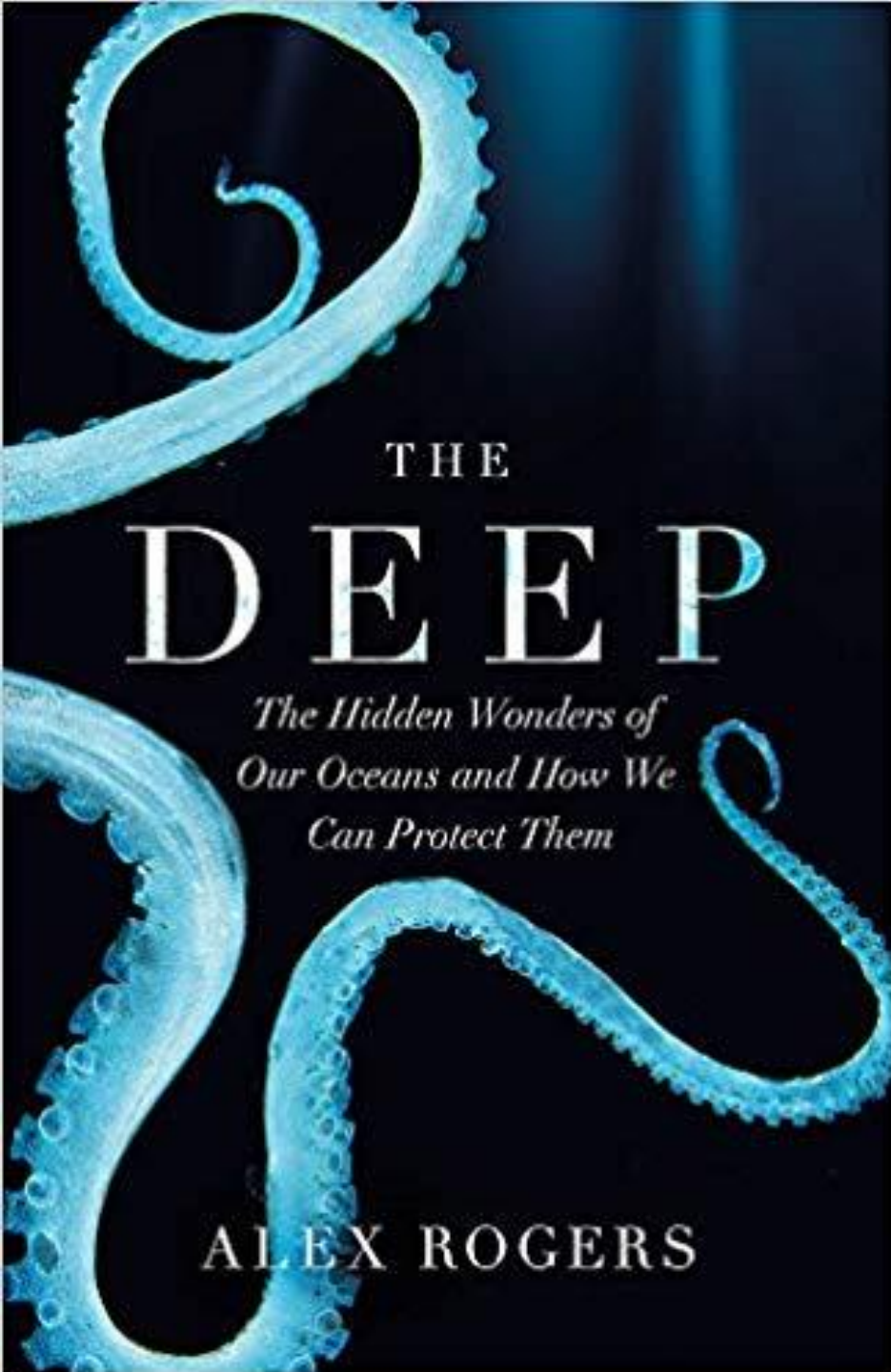
Ship	Main purpose	Length (m)	Research berths	Range (km)	Built	Refit	Patron
<i>REV</i>	Research	183	60	39,000	2021	N/A	Kjell Inge Røkke
<i>Falkor</i>	Technology development	83	17	15,000	1981	2012	Eric & Wendy Schmidt
<i>Nautilus</i>	Exploration, education	64	31	24,000	1967	2008	Bob Ballard
<i>Alucia2</i>	Exploration, media	87	50	41,000	2010	2019	Ray Dalio
<i>Petrel</i>	WW II shipwrecks	76	35	22,000	2003	2017	Paul Allen
<i>Pressure Drop</i>	Trench exploration	68.3	30	28,000	1985	2018	Victor Vescovo





# Summary

- REV Ocean is a not-for-profit organisation
- Currently building the world's largest superyacht / research expedition vessel
- Equipped for seabed mapping to 8,000m depth
- Science program focused on plastics, overfishing and climate change
- Seabed mapping will be part of the vessels activities



Thank you for listening!

Thanks to Martin Jakobssen and  
Seabed 2030

REV Ocean

vasco pinhol

# REV Ocean

