



R/v Aranda - Comeback to the Polar Seas

Looking for International Co-operation



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Juha Flinkman, Finnish Environment Institute, Marine Research Center

R/v Aranda, brief history



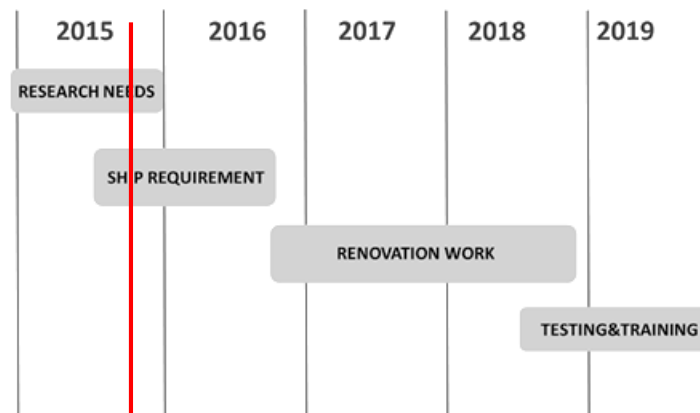
- Designed and built in late 1980es
 - Completed & commissioned 1989
 - Designed & built to meet A1 Super ice class
 - Designed to function also as a "Shopwindow" for Finnish ship building know-how & capacity
 - Diesel-electric icebreaker propulsion, good for DP
 - Design very good, has withstood well for quarter of a century, copied on many occasions
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- Polar cruises in early career: 2 cruises to Antarctic waters, several cruises to Arctic
 - Continuous year – round operations in the entire Baltic Sea
 - Multi-disciplinary capacity and modularity as an original design features

- Major refit now underway, finished in 2018-2019
- More detailed info: Theme 2, Day 2, Jukka Pajala

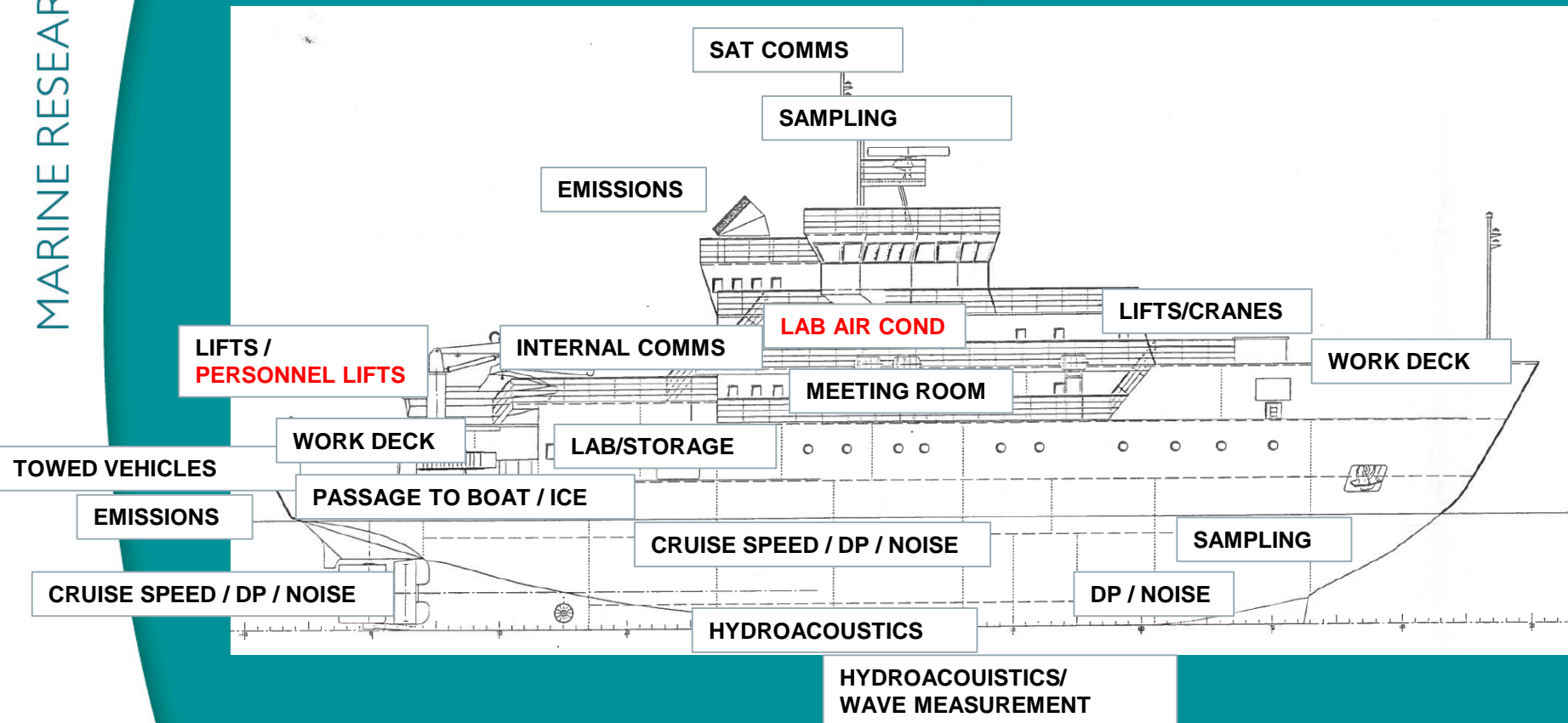
ARANDA2020



Modernization schedule

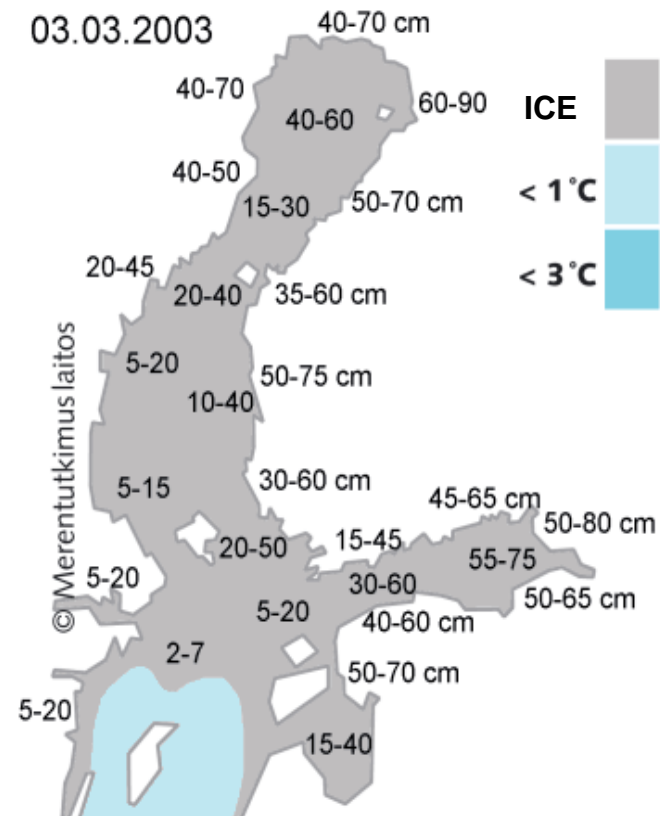


REFIT, "BARREL OF WISHES"



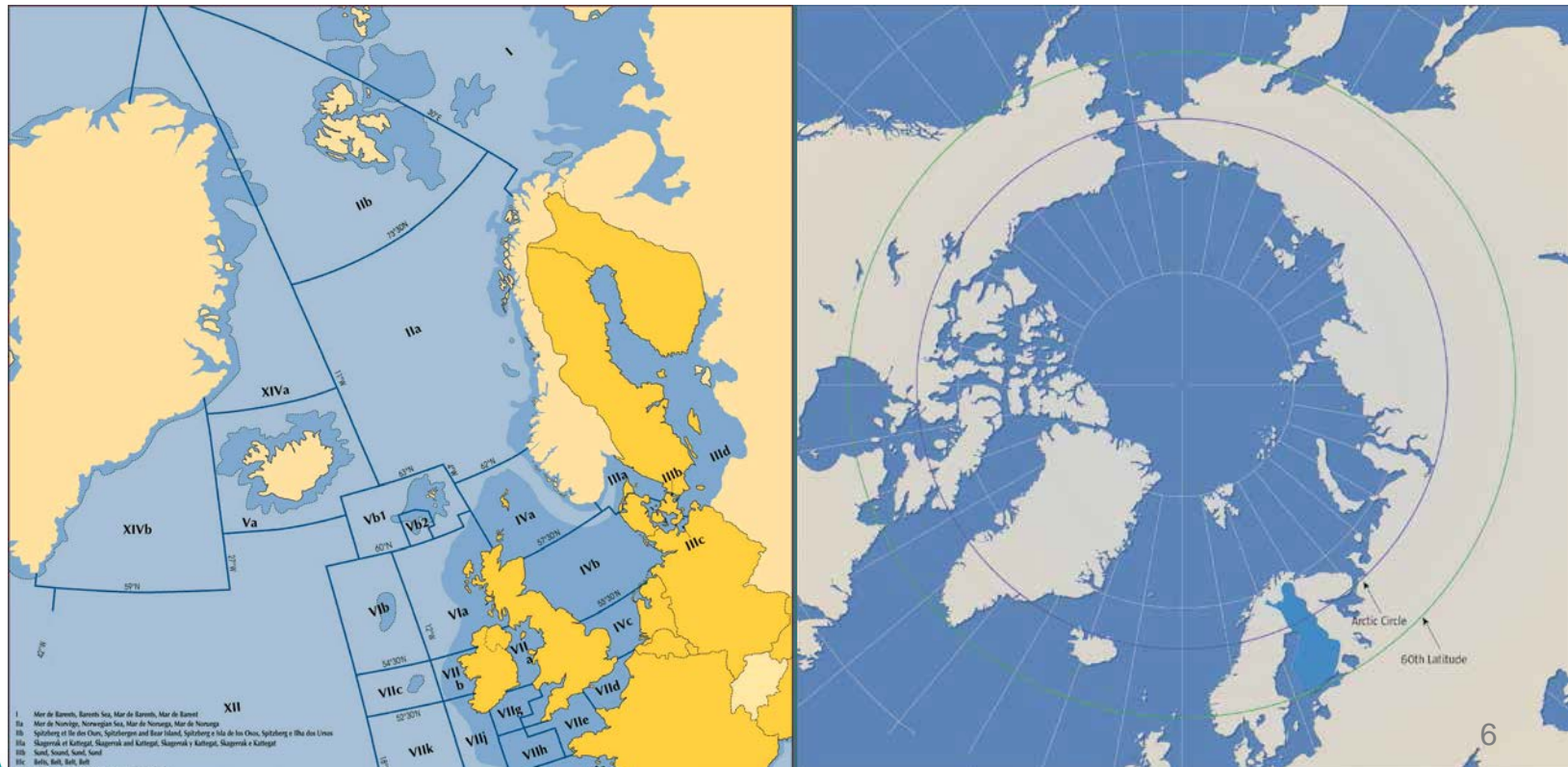
Aranda's new life as multi-disciplinary r/v with Arctic capacity

- ARANDA has proven herself many times in Polar Seas
- Annually operating in Northern Baltic winter Subarctic conditions
- Polar Seas capacity will be maintained and enhanced in coming big refit
- Both the operating Institute and shipping company have plenty of experience and expertise in operating in ice/cold environment
- Aranda sails approx. 200 days annually in the Baltic, so there is still free capacity to offer for Arctic projects



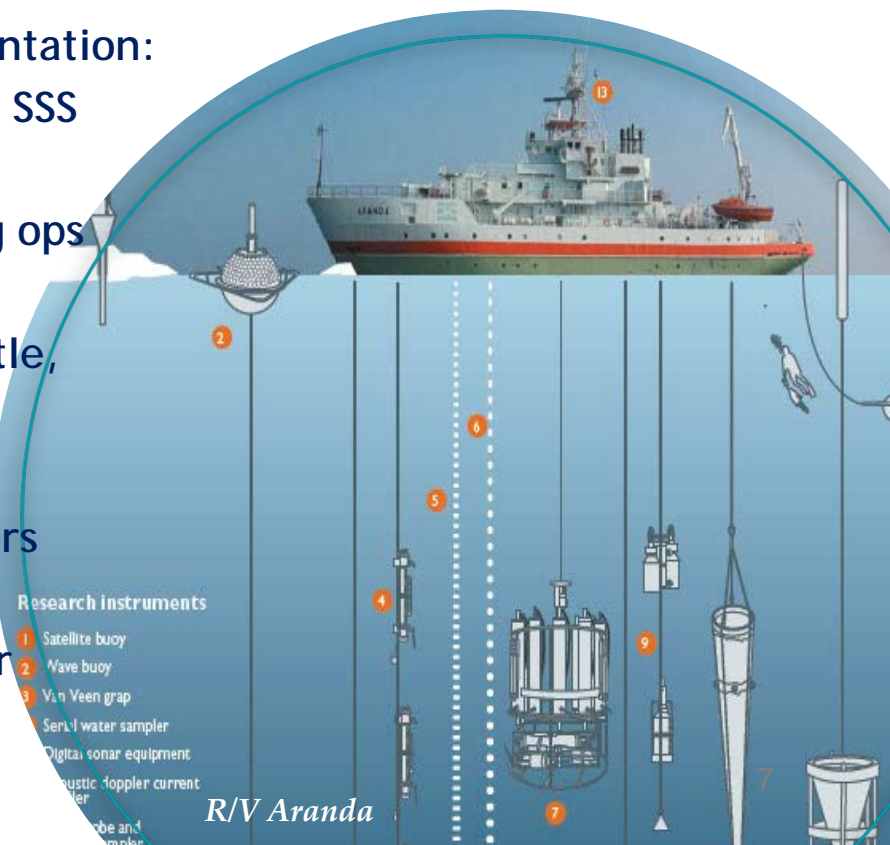
Aranda's new life as multi-disciplinary r/v with Arctic capacity cont'd..

- Arctic Strategy adopted by Finnish Government in 2013 - emphasis on technical expertise and polar science
- Antarctic ops not cost effective for Aranda, but...
- ..quite suitable for operations in e. g. Arctic part of ICES area



What could Aranda do in the Arctic waters?

- It's not a good idea to try to take her to the North Pole in winter, but...
- Multi-disciplinary ops at ice edge in spring/summer/fall, such as food web studies would be ideal
- In the coming refit, Polar ops are taken into consideration with high priority
- It is yet possible to add to the "wish list" of renovation objects for co-operation partners
- Additional areas of enhanced instrumentation:
 - Hydroacoustics: biological, multibeam, SSS
 - Robotics: Glider, AUV, aerial drones
 - Capacity for cold water ROV and diving ops
 - Moon pool for water column sampling
 - Multitasking towed vehicles; AquaShuttle, MultiNet, Utow, CPR
- Due to available capacity of sea days, we are searching for new users/partners for projects in Polar regions
- Also availability for commercial charter

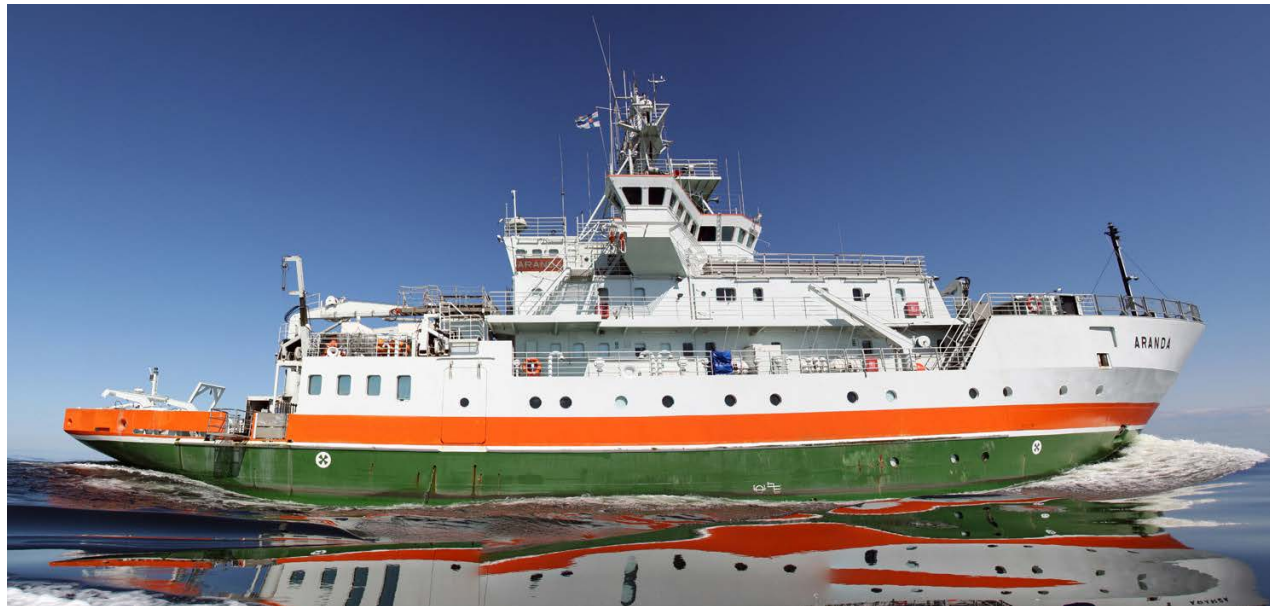


Aranda's present status

- World's first r/v operationally using domestically produced bio-oil and biodiesel - no/low CO2 loading into atmosphere!
- Long term national and international co-operation such as LUKE (Finnish fish surveys) and SMHI (Swedish Baltic monitoring)
- New contract for crewing and maintenance for 5 years - Shipping company possesses additional capacity for Polar Seas
- Ship in need of a "remaining life span refit"
- Resource, 11.5M€, now available which will extend its' useful life span for 15 years.
- Planning in 2015, actual refit 2016-2019
- Replacement vessel & equipment for periods when Aranda is u/s

Aranda's comeback to the Arctic, summary

- With the refit now underway, plenty of life span and capacity for polar ops to 2030^{es}
- Polar capacity maintained/enhanced in the refit
- Equipment & instrumentation after refit appealing to Polar multi-disciplinary users
- Agile, capable, cost-efficient, multi-capacity r/v for Arctic ops
- Co-operation, projects, charter: all welcome!



Thank You!

