

Arctic news from Finland

Paula Kankaanpää

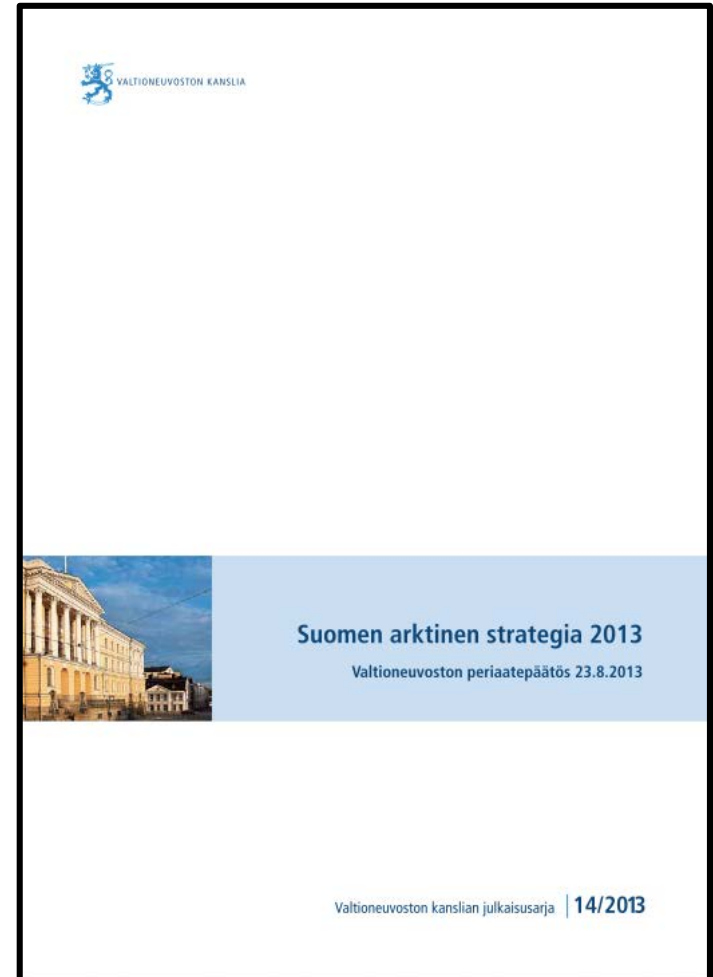
Director

Marine Research Centre

Finnish Environment Institute

Finland's Arctic Strategy 2013 is being updated in 2017

- Finland is an arctic country as the whole
- Sustainable development and environmental protection,
- Economic development
- International cooperation
 - Promotion of EU's arctic policy



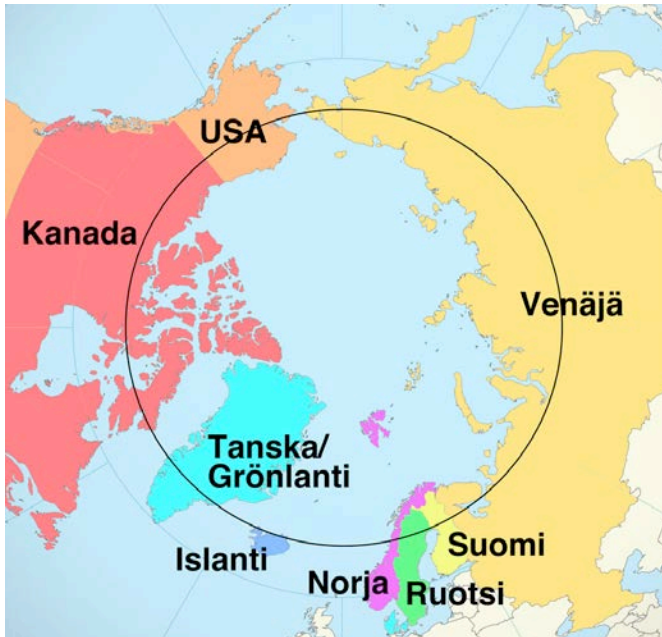
Arctic bodies in Finland

- **Arctic Committee**
 - Ministry of Foreign Affairs
 - All ministries and regional officials
- **Polar Research Committee of the Council of Research Academies**
 - Polar research institutes and universities
- **Volume of Finnish Arctic research is large**
 - Arctic expertise covers everyday life related cold climate/arctic conditions
 - Arctic research is carried out in all research institutes and universities
 - >100 m€/y
 - Arctic Program, Finnish Academy, ARKTIKO
 - Technological research and innovation, TEKES, arctic oceans program

Finland as the Chair of the Arctic Council

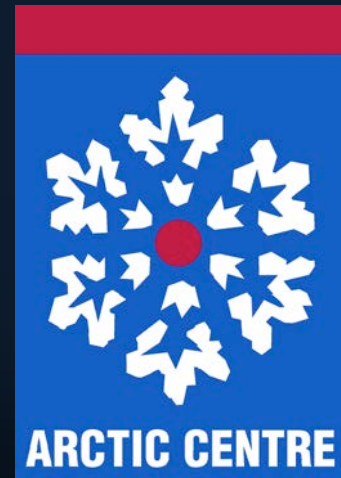


- 2017 - 2019
- Chairmanship program will be published soon:
 - Environment
 - meteorology & oceans
 - Education
 - ICT and telecommunications
 - implementation of current processes and projects



www.arcticfinland.fi

- Arktiset puhenvuorot
- Arktinen foorumi
- Suomen arktinen strategia
- Arktinen tutkimus Suomessa
- Tieodotteita ja uutisia
- Linkit
- Suomen arktiset seminaarit ja kokoukset



18



Suomen kansallisen arktisen ja pohjoisen keskustelun kohtauspaikka

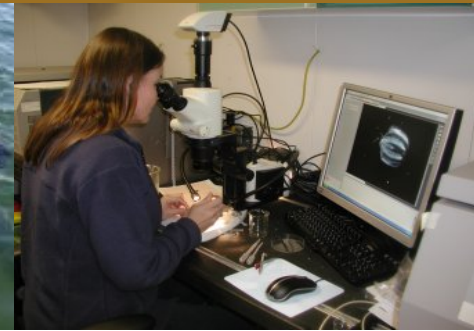
Arctic expertise of Finnish Environment Institute

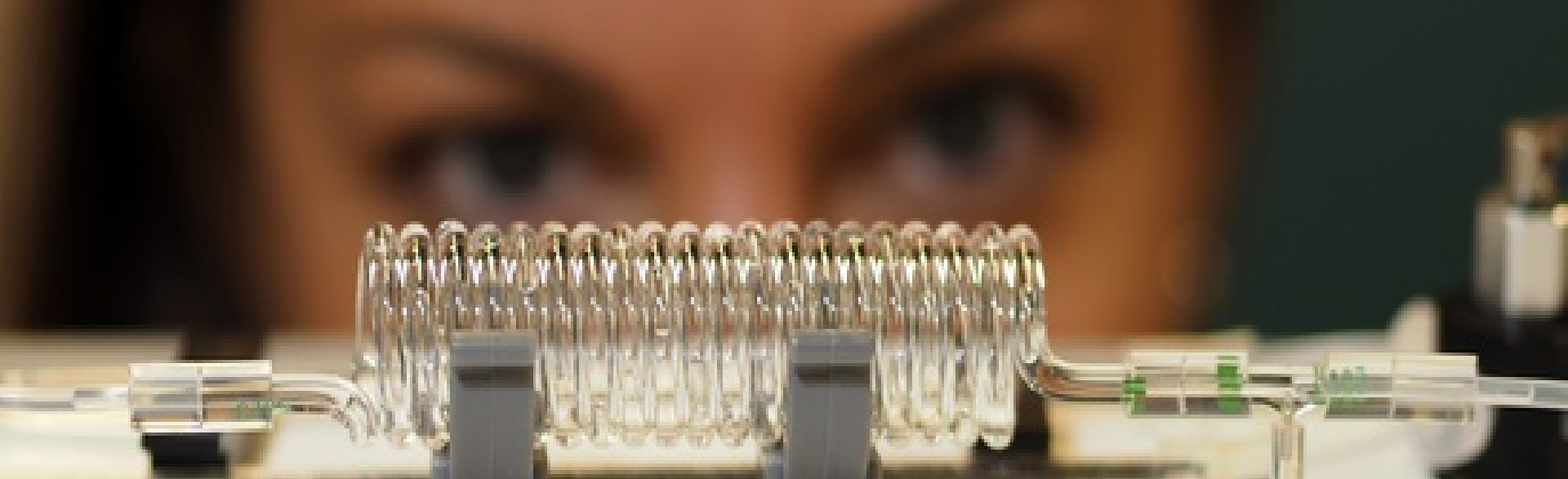
SYKE Marine Research Centre

**The Finnish expert on marine environmental
research**

Ministry of the Environment

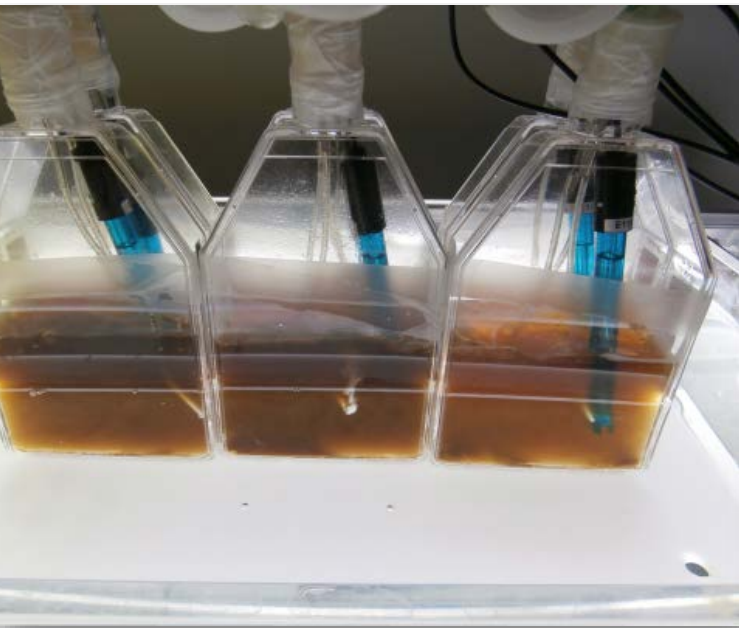
- Staff: 100 experts on marine research
- Budget: 9 m€
- External funding: 70 %





SYKE Ecological Marine Research Laboratories

* Cold seas * experimental research * method development * controllable facilities *
algae culture collection * novel instrumentation * bio-optics and imaging



**Finnish Environment Institute
Marine Research Centre
- FINMARI
Consortium for Finland's National
Marine Research Infrastructure**

**New solutions for automated sampling,
real time measurement and integration of
data production for cold seas**



Finnish Environment Institute Mechanical oil response prototype development

- Louhi: 4
öljyntorjuntaharjaa
- 2 uutta yksikköä
TURVA/UISKO/TURSAS



**Finnish
Environment
Institute
Ecological
impacts of oil
spill response
methods in
the Arctic**

Mechanical cleaning
Burning
Chemicals
Biological remediation
Predictions
Prevention strategies



R/V Aranda

Ice Class A1 Super



R/V Aranda

- Built 1989
- "Shopwindow" for Finnish ship building know-how and capacity
- Has withstood well for quarter of a century,

"Copied" on many occasions



R/V Mirabilis, Namibia, 2012



R/V Aranda is a polar research vessel

- Continuous year-round operations in the sub-arctic Baltic Sea
- Several cruises to Arctic;
- Two cruises to Antarctic
- Multi-disciplinary capacity and modularity

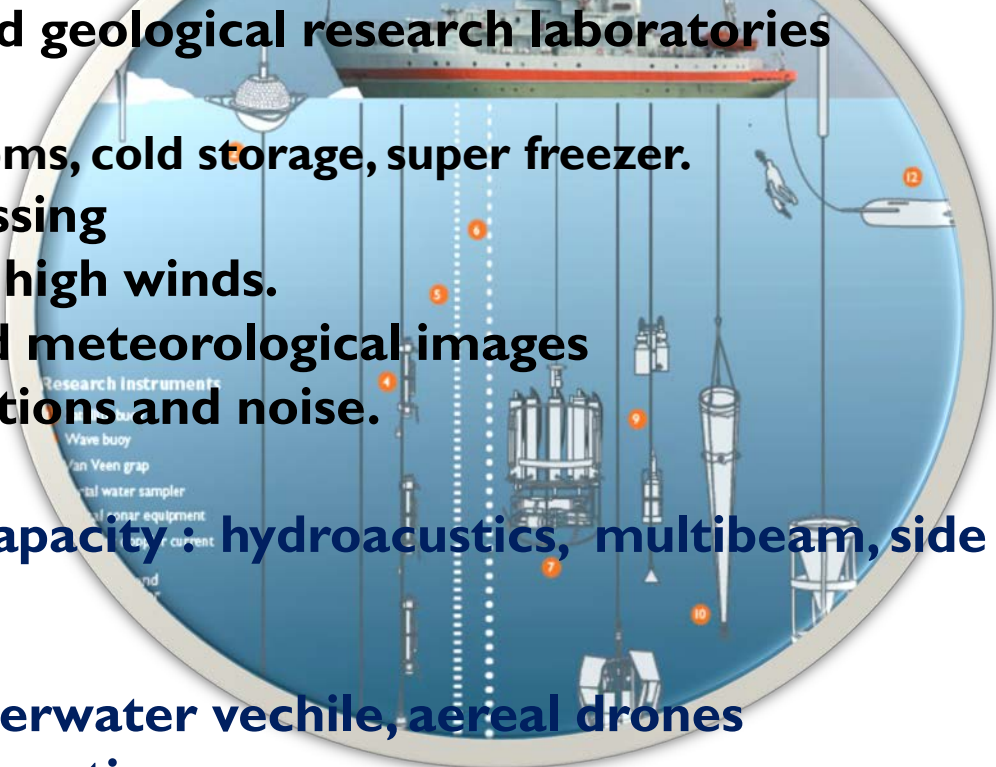


R/V Aranda

- **Comfortable double cabins with showers and bathrooms for 26-30 scientists**
- **Common meeting rooms, gym and sauna**
- **Excellent kitchen services**
- **12 crew members**

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- **Made to operate in first year ice and ice margin areas**
 - **cost-efficient, multi-capacity r/v for Arctic**
 - **But NOT for multi-year ice**

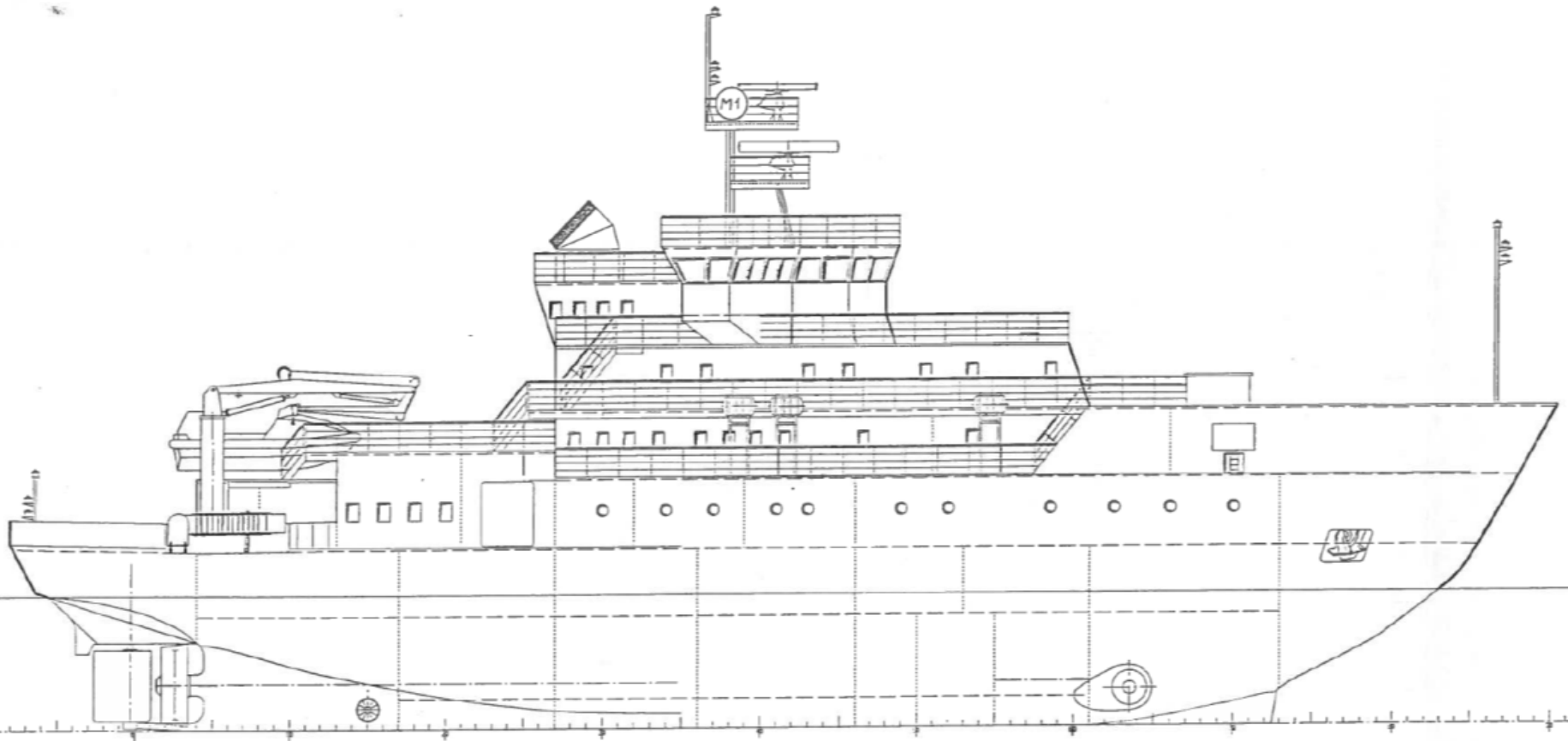
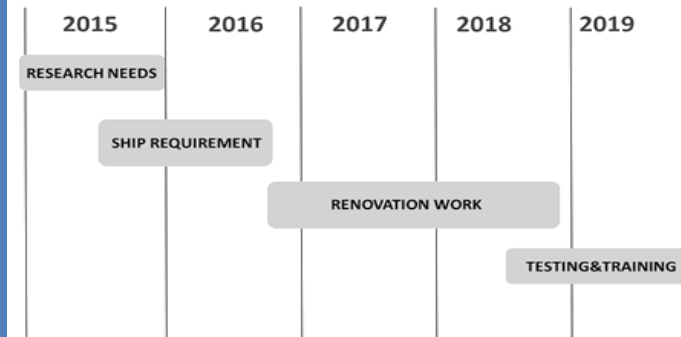
What Aranda can do ?

- biological, physical, chemical and geological research laboratories
 - handling and storing samples
 - clean container, acclimated rooms, cold storage, super freezer.
 - sample analysis and data processing
 - can stay in a precise location in high winds.
 - modern system for satellite and meteorological images
 - floating floor to minimize vibrations and noise.
- 
- Extra silent electronic engine capacity: hydroacoustics, multibeam, side scan sonar
 - Drop keel
 - Robotics: glider, automatic underwater vehicle, aerial drones
 - Capacity for ROV and diving operations
 - Moon pool for water column sampling
 - Multitasking towed vehicles: AquaShuttle, MultiNet, Utow, CPR
 - Environmentally friendly: world's first r/v operationally using domestically produced bio-oil and biodiesel – no/low CO₂

ARANDA2020

- Major refit now underway, 11 million €
- Modernized ship available in the end of 2018 -
- Ice Class AI Super & IMO Polar Code
- Available for research, commercial charter and new projects in the Baltic Sea, and in other oceans including the Arctic

Modernization schedule



Thank you!