

ARANDA

a state-of-the-art research vessel equipped for icy seas



Most of Aranda's research expeditions cover the Baltic Sea, but voyages have also explored the Arctic Ocean and the seas around Antarctica. Aranda's expeditions contribute to national and international marine research and the monitoring of the state of the Baltic Sea, helping Finland to meet its commitments under international treaties.



SYKE

ARANDA

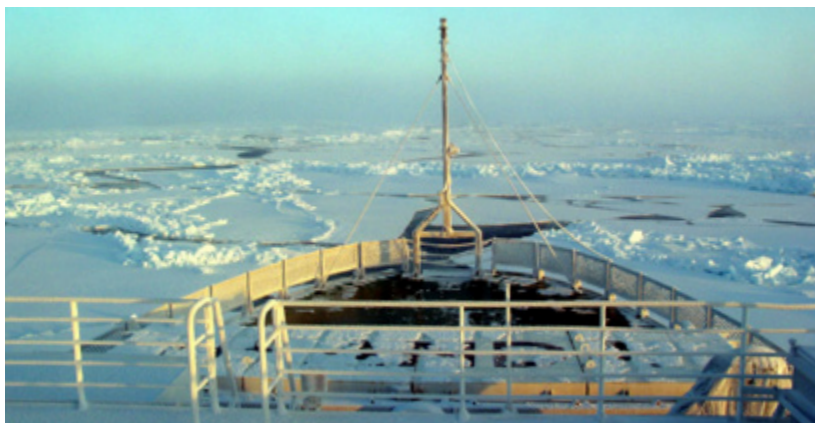
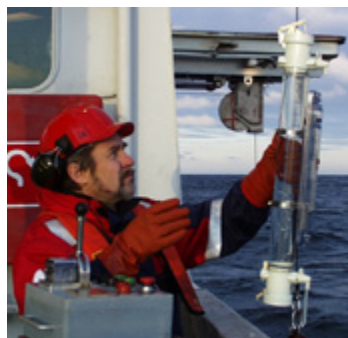
marine research in the Baltic Sea
and polar regions



Well-equipped for challenging work

Aranda can conduct a wide range of biological, physical, chemical and geological research. The vessel's well-equipped laboratories and advanced computer system enable prompt onboard sample analysis and data processing.

Research facilities are mainly located in the central and aft part of the ship. Comfortable cabins and well-equipped common rooms make working aboard a pleasant experience, even on long expeditions. A floating floor has been installed in the research area to minimise vibrations and noise. The ship has special facilities for handling and storing samples, including a clean container, thermostatically adjustable acclimated rooms, cold storage, and freezer facilities housing a super freezer. Chemical research is facilitated by permanently fixed pipes between Aranda's bottled gas store and laboratories.





Finnish marine research vessels since 1898:

1898
Coastguard vessel
Suomi

1903-1938
Research vessel
Nautilus

1939
Research and
passenger vessel Aranda

1953-1989
Research and
passenger vessel Aranda

1989
Research vessel
Aranda



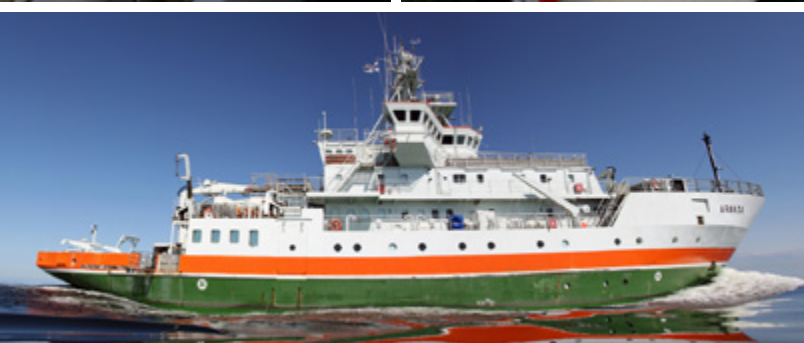
Aranda and its predecessors

The first Finnish marine research expedition was conducted in 1898 by the customs patrol vessel SS Suomi. The first purpose-built research vessel SS Nautilus was launched in 1903, and served as a fishing and marine research vessel until 1938.

In the summer of 1939, researchers were able to use the first vessel named Aranda. This ship, originally designed to take passengers, only completed one expedition before the outbreak of World War II. Finland was eventually forced to hand over the ship to the Soviet Union as part of war reparations.

In 1953, a new vessel able to sail through thin ice was completed and named Aranda after its predecessor. The ship was equipped with various equipment enabling studies of the sea, the seabed and fishery stocks. Aranda used to transport passengers to islands in the Turku archipelago during the challenging winter season when the sea is covered by thin ice, and in the summer the ship conducted marine research expeditions. This Aranda was used for research until 1989.

The current Aranda, exclusively designed for marine research, was launched in June 1989. The vessel was immediately sent on a trial expedition to the North Atlantic, and then in November set off on Finland's first Antarctic research expedition. Aranda is owned by the Finnish Environment Institute.



Maneuverability and technology

Aranda's maneuverability meets the demanding requirements of scientific research. The ship can remain in a precise location for observation purposes even in high winds. Aranda has state-of-the-art equipment for receiving satellite and meteorological images that are vital for research purposes and for safety. Aranda's engines can run on diesel-electric or diesel, and are powerful enough to drive the vessel through ice approximately half a metre thick. Aranda's ice classification is Super AI.

During long voyages drinking water can be purified from seawater using a reverse osmosis system. Biological wastewater treatment facilities also enable Aranda to spend long periods at sea.

CTD probe

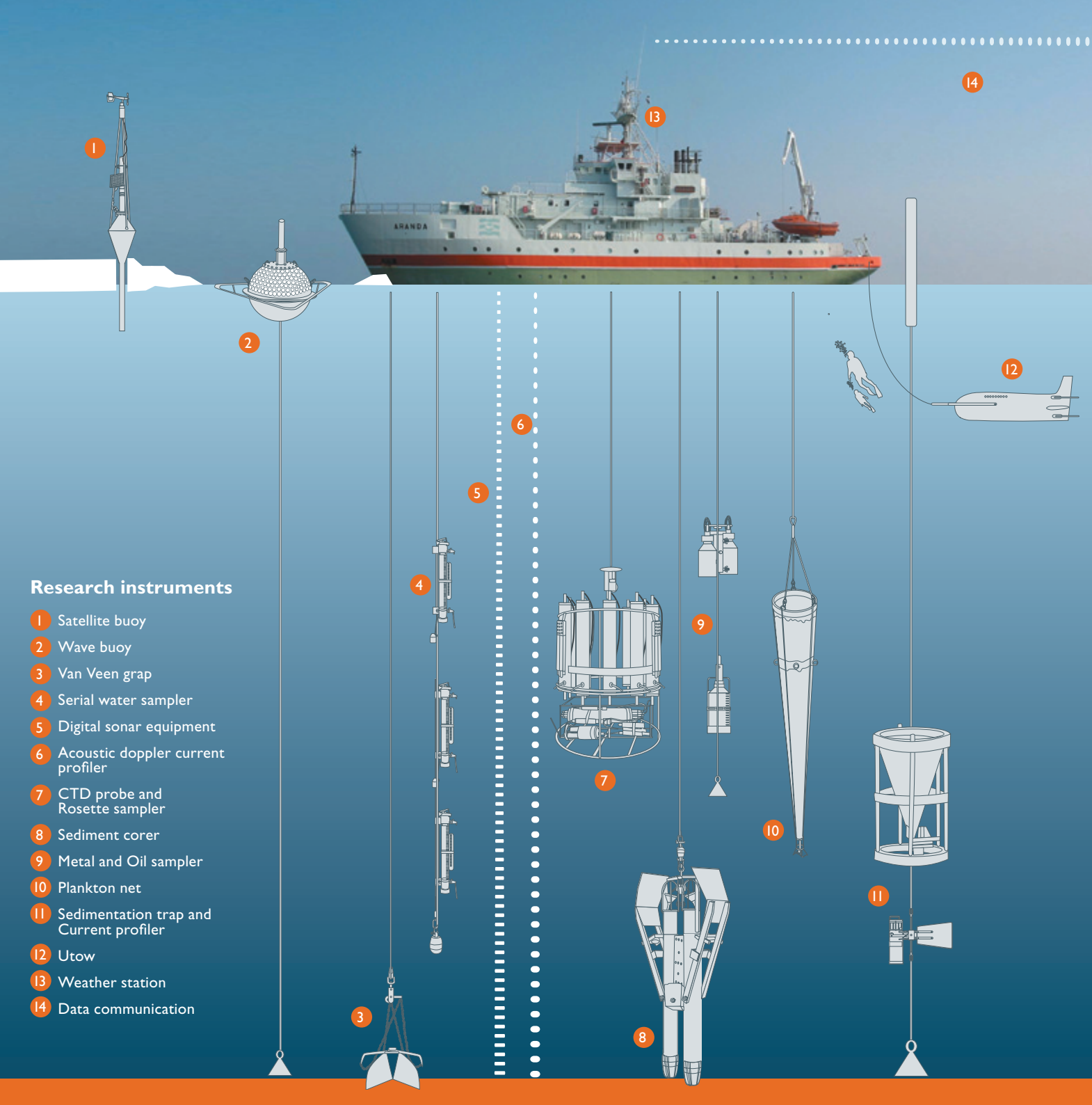
CTD probes (Conductivity Temperature Depth), used to measure seawater salinity, temperature and pressure, are among the most important observation instruments used in marine research.

The CTD probe is lowered on a cable into the sea, and its continuous highly accurate readings are transmitted through wires inside the suspension cable to an on-board computer. This type of observational data has greatly improved our understanding of water masses and the vertical structuring within the seas. Such data can also be used in many other kinds of marine research as background and supporting information.

A water sampling system connected to Aranda's CTD probe consists of 12 samplers that can be triggered at desired depths during CTD observations. The operation of Aranda's CTD probe is supervised by the Finnish Meteorological Institute.

Research instruments

- 1 Satellite buoy
- 2 Wave buoy
- 3 Van Veen grab
- 4 Serial water sampler
- 5 Digital sonar equipment
- 6 Acoustic doppler current profiler
- 7 CTD probe and Rosette sampler
- 8 Sediment corer
- 9 Metal and Oil sampler
- 10 Plankton net
- 11 Sedimentation trap and Current profiler
- 12 Utow
- 13 Weather station
- 14 Data communication



Technical details

Name	Aranda
Built	1989, Wärtsilä shipyard, Helsinki
Owner	Finnish Environment Institute
Home port	Helsinki
Call sign	OIRY
Classification	Research vessel
Length	59.20 m
Width	13.80 m
Draft	5.00 m
Gross tonnage	1,734 GT
Power	3,000 kW
Cruising speed	10.5 knots
Endurance (max)	60 days
Berths for researchers	25
Crew	12-13
Laboratory space	124 m ²
Wet lab	9 m ²
Acclimated rooms	16 m ²
Computer lab and offices	32 m ²
Workshop	7 m ²
Sampling facility	132 m ²
Helicopter deck	
Research and storage container facilities	
Sauna, gym and laundry	

Weather station:

Readings every minute for wind speed and direction; air pressure, humidity and temperature; solar radiation; seawater temperature and conductivity.

Navigational instruments: DGPS (2) and ECDIS.

Communications equipment:

Inmarsat Fleet 77, Inmarsat C, VHF/MF/HF, MF/HF telex, DSC VHF/MF, aviation VHF GSM connections.

ICT facilities:

Lab computers connected to local network. Networked servers give access to new lab, observational and meteorological data systems. Internal onboard communications via intranet and info-channel system.



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