A strategy for meeting the needs for marine research in the Arctic

21 partners from Europe, USA and Canada,
„Letters of support“ from IASC, ISAC and SAON

Initiated & coordinated by:

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Reasons for establishing ARICE

- Urgent requirement to capture **new data and fill gaps** in scientific understanding and knowledge about rapid change in the Arctic Ocean
- Science operations in the High Arctic are **costly, and technologically and logistically demanding**
- Many of the vessels have to **split their efforts** between the Arctic and the Southern Ocean and are only available in the Arctic during the **summer months**,
- Plans are emerging to build a new German polar research vessel **R/V POLARSTERN 2**, whilst continuing to operate R/V POLARSTERN in the Arctic for an additional 5 years
- The Swedish polar research vessel R/V ODEN is under **a new 10-year agreement** to make the ship available to researchers from May to December each year

Heavy icebreakers for research in the Arctic

The objectives of ARICE

. **The primary objectives are to:**

- Achieve a year-round availability of heavy icebreakers in the Arctic by operating Oden and Polarstern in an European/International consortium,
- Increase the coordination of available heavy icebreakers with ice-margin vessels in order to relieve the heavy icebreakers,
- Create a mechanism for a more cost-effective usage through transnational harmonisation, especially in the High Arctic,
- to concentrate today's heterogeneous national polar research strategies into a coherent science planning based on an open, transparent international consensus.

Take away messages

The international polar science community must have **access to world-class marine research infrastructures in the Arctic to solve all the pressing questions of climate change** but the availability of heavy icebreakers for work in the ice-covered Arctic Ocean is limited to very few capable vessels.

Since Science operations especially in the central Arctic Ocean are technologically and logistically highly demanding and cost-intensive and therefore beyond the financial capabilities of most Nations, a mechanism for a more **cost-effective usage of existing polar research vessels** through **transnational harmonisation of scientific and ship operational planning,** especially in the High Arctic, is needed.

Sharing of berths and related costs on the heavy research icebreakers and increasing the **coordination with the ice-strengthened vessels** would relieve the heavy icebreakers from expeditions to the marginal ice-covered areas and would be one solution to improve their availability in the Arctic Ocean.