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## Cruise Ship as Data Collector

### Helmholtz Innovation Platform and HX Hurtigruten Expeditions Try New Approaches in Ocean Observation

**Scientific research - not only confined to dedicated research vessels but also from non-scientific vessels and marine infrastructures. This is one of the ideas promoted by the Helmholtz Innovation Platform “Shaping an Ocean Of Possibilities” (SOOP). SOOP aims to develop new technologies and structures for ocean observation and has recently initiated a cooperation with HX Hurtigruten Expeditions. During cruise voyages to remote regions, ocean data will be collected for scientific purposes. The first expedition with SOOP technology on board now started in Hamburg, with Reykjavik as the destination port.**

The goal of the Innovation Platform “Shaping an Ocean Of Possibilities for science-industry collaboration” (SOOP) is to establish sustainable structures and technologies for ocean observation, to improve access to measurement data and to expand knowledge about our oceans. To achieve this, the GEOMAR Helmholtz Centre for Ocean Research Kiel, the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI), and the Helmholtz Centre Hereon are promoting a joint effort of participants from industry, civil society, and science. One idea is to conduct scientific research not only from research vessels but also from cruise ships or merchant ships, to increase the available amount of research data.

#### Cooperation with Expedition Cruise Company

SOOP has recently initiated a cooperation with HX (Hurtigruten Expeditions). Within a joint effort, scientific data will be collected from a commercial cruise ship. The collaboration started in the port of Hamburg, where measuring instruments were installed on board of MS FRIDTJOF NANSEN. From there, on Saturday, the ship set sail for Reykjavik. During its journey, which passes Norway as well as the Shetland and the Faroe Islands, data for research purposes will be collected. The cruise has been joined by Melf Paulsen, a research engineer from the Chemical Oceanography research unit at GEOMAR. He will not only install and monitor the measuring instruments but also introduce guests of the cruise to his work through lectures.

On the following eight expeditions of the MS FRIDTJOF NANSEN, scientists from the three research institutes GEOMAR, AWI, and Hereon will take turns collecting data on board and sharing their knowledge with guests. Measurements will cover temperature and oxygen content of the water, as well as salinity, microplastics and CO<sub>2</sub> content. In addition, experiments will be conducted to investigate the biological diversity in the waters using measurements of phytoplankton and of traces of genetic material in the water (eDNA).

#### New Strategies for Broad Data Collection

“We are developing easy-