

## Project information

### Project title

Systematic and automatic collection and presentation of data on Arctic shipping

### Year

2013/2014

### Project leader

Eirik Mikkelsen, Norut

### Participants

- Eirik Mikkelsen, Norut, project leader
- Jon-Arve Røyset, Stian Aamot, Norwegian Coastal Administration
- Richard Hansen, Frode Skævestad, Avinet
- Øyvind Rinaldo, Norwegian Coastal Administration
- Gunnar Sander, Norwegian Polar Institute

### Flagship

Arctic ocean, Theme: Driving forces and development of new industry

### Funding Source

Fram Centre, BarentsWatch

### Summary of Results

The project has set up a system to collect, systematize and present data on actual Arctic shipping activities, based on AIS-data (*Automatic Identification System*).

AIS-data are mandatorily transmitted from most ships and picked up by landbased stations or satellites. The landbased stations have a limited geographical range (30-40 nm). Utilising the Norwegian AIS-sat1 satellite it is now possible to gather AIS-data also for areas outside the range of the landbased stations.

In this project an automated system is set up to gather the AIS-data, use the identification data there to link to databases with additional data on the ship, and create a comprehensive database on ship traffic.

The positional data from the ships' AIS signals makes it possible to calculate ships' travels in specifically defined regions of the Arctic, across defined passing lines, and into defined ports.

Ships are divided into 13 ship types each of 7 size classes.

The regions that are defined, and which ships' sailed distance in for different period can be automatically delivered are the Arctic nation states' EEZ, the Large Marine Ecosystems (LMEs), as well as a grid of each 20 degrees longitude. There are 45 strategically defined passing lines where ships' sailings can be counted (in each direction), and arrivals to more than 46 Arctic ports are also counted automatically.

2012 is the base year for the data. The standard report is data by month.

### For the Management

#### **Ship traffic in the Arctic**

- Passing lines
- Ports
- Ship types
- Calculated emissions based on ship type and sailed distance
- When the presentation in BarentsWatch is finished, combinations with other geographically based data can be show with different map layers

### Published Results/Planned Publications

Abstract and presentation at Arctic Frontiers 2014.

### Communicated Results

The database will be available through [www.havbase.no](http://www.havbase.no) and also [www.barenswatch.no](http://www.barenswatch.no) . In addition a short report with presentation of the database and reference material will be produced.

## Interdisciplinary Cooperation

This project benefitted from cooperation between technologists, social scientists, and persons from the authorities (Coastal administration).

## Budget in accordance to results

This project would not have been possible without the funding from the Fram Centre.

## If Yes

The database could maybe be subject to commercialization, but the rationale for the project was to make data on shipping activities easily available for research, authorities and other users. Trying to commercialize the database, and thus limit the access to the database unless users pay, would go against this rationale.

## Conclusions

The data that has been made available through this project will be utilized in research projects in the Fram centre in 2014. It is central for mapping, understanding and making projections of Arctic shipping, and thus also analyzing potential and actual environmental effects and risks related to it.