

# Argo National Report 2016 – Finland

## 1. Status of implementation

The Finnish Argo program is run by the Finnish Meteorological Institute (FMI). Since 2010 FMI has deployed altogether ten floats in the Nordic Seas. In addition of oceanic operations, eleven floats (starting 2012) have also been deployed into the shallow and low salinity Baltic Sea. Four of the Baltic floats have bio-optical sensor suite.

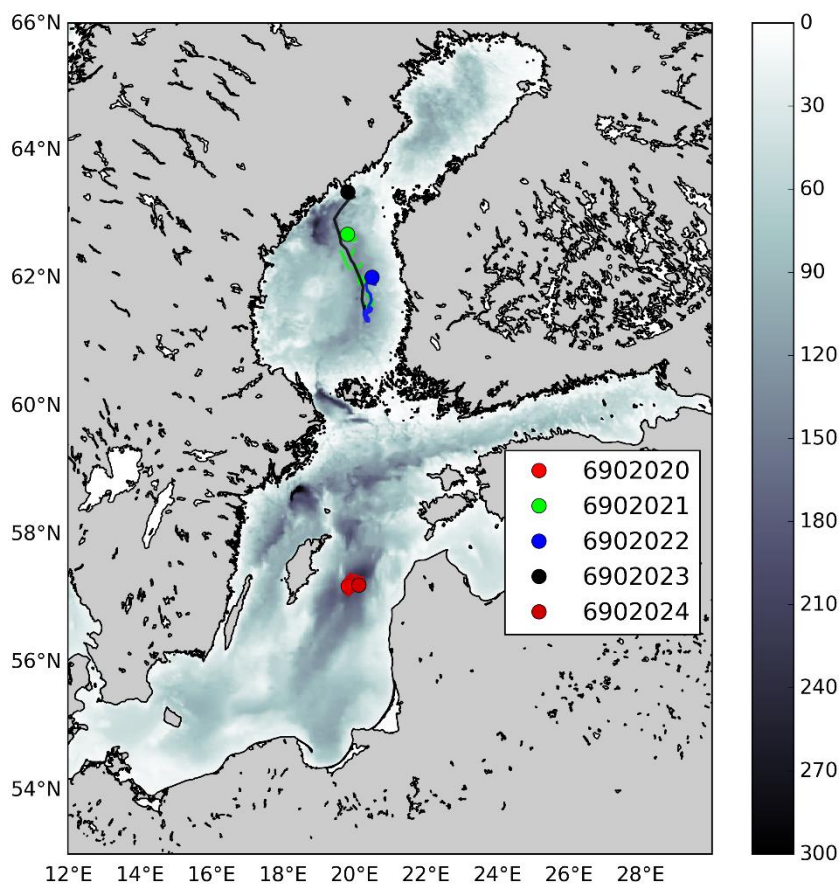


Figure 1, Routes of Argo floats which operated in the Baltic Sea in 2016-2017. Large dots indicate the recovery point or the position of the last profile.

## 2. Present level and future prospects for national funding for Argo including summary of human resources devoted to Argo

FMI has committed to purchase and deploy three floats in a year, at minimum. Our main geographical areas to operate are the Greenland Sea and the Baltic Sea. During the next years, we are looking for possibilities to further develop the Argo floats to be used in shallow ice-covered

seas. First experiments with ice-avoidance on the Baltic Sea have been performed during winter 2015-2016.

### **3. Summary of deployment plans**

This year three floats were deployed in the Baltic Sea.

### **4. Summary of national research and operational uses of Argo data**

Argo data sets gathered from Baltic Sea are used for validating the operational and research circulation models. Operational circulation models are also constantly compared on current Argo data, one of these comparisons was published this year (Westerlund, Tuomi 2015). Operating Argo floats in the Baltic Sea has itself been a research on the limits of usability of Argos in shallow seas. Ongoing research is done on assimilating Argo data in the operational Baltic Sea circulation models for enhancing their forecasting skills.

### **5. Issues that your country wishes to be considered and resolved by the Argo Steering Team regarding the international operation of Argo**

Finland considers that more resources should be allocated for the environmental monitoring of the Arctic Ocean. The Euro-Argo could coordinate developments and deployments of ice-tethered Argos.

### **6. CTD data uploaded to CCHDO**

No data uploaded.

### **7. Bibliography**

Westerlund A., Tuomi, L. Vertical temperature dynamics in the Northern Baltic Sea based on 3D modelling and data from shallow-water Argo floats. *Journal of Marine Systems* (2016).  
<http://dx.doi.org/10.1016/j.jmarsys.2016.01.006>

Siiriä S., Tuomi L., Roiha P. and Purokoski T. Monitoring the Baltic Sea: Using Bathymetry to Guide Argo Floats, American Geophysical Union Meeting, Poster presentation. 2016

Siiriä, S., Roiha, P., Nummelin, A., Aro, E., Purokoski, T., 2015: Argo activities in the Baltic Sea, EuroArgo user meeting, oral presentation, France, Brest.

Unesco OceanApp competition information: <http://www.unesco.org/new/en/communication-and-information/resources/news-and-in-focus-articles/in-focus-articles/2015/mobile-apps-for-sustainable-development>