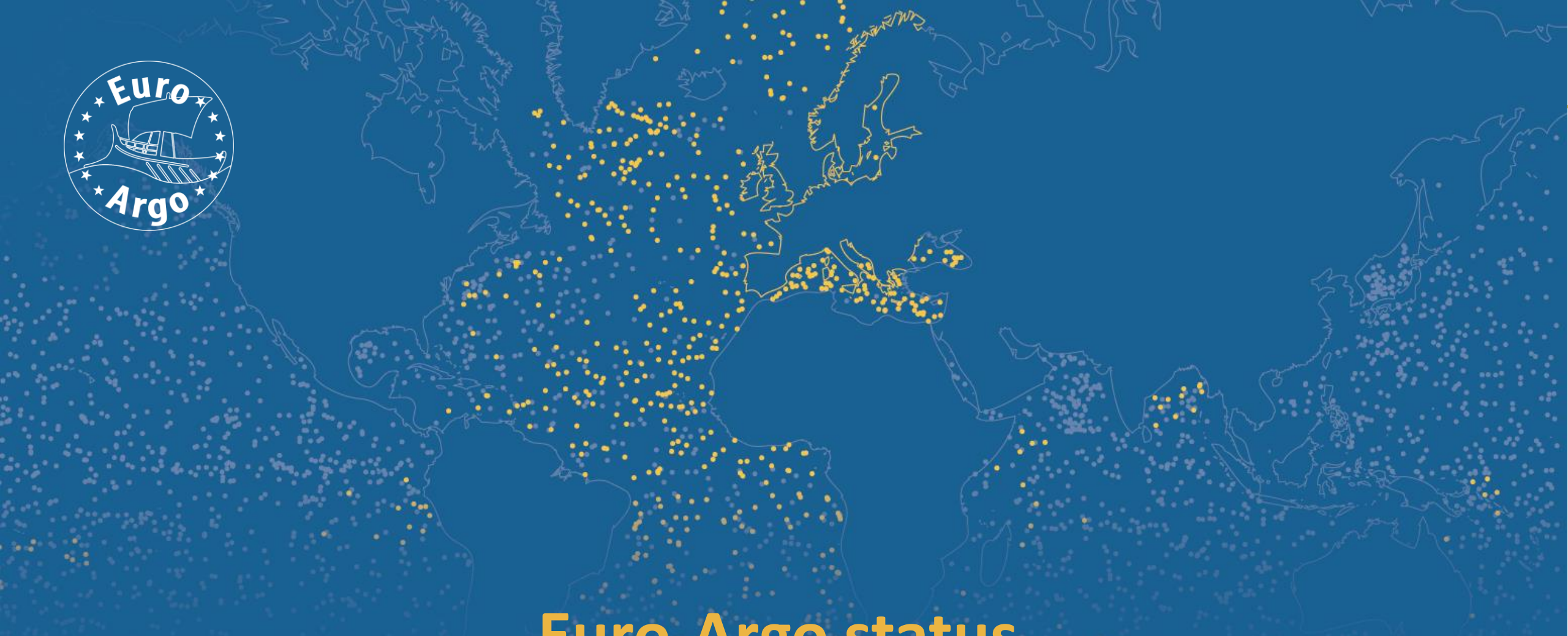


Euro-Argo status

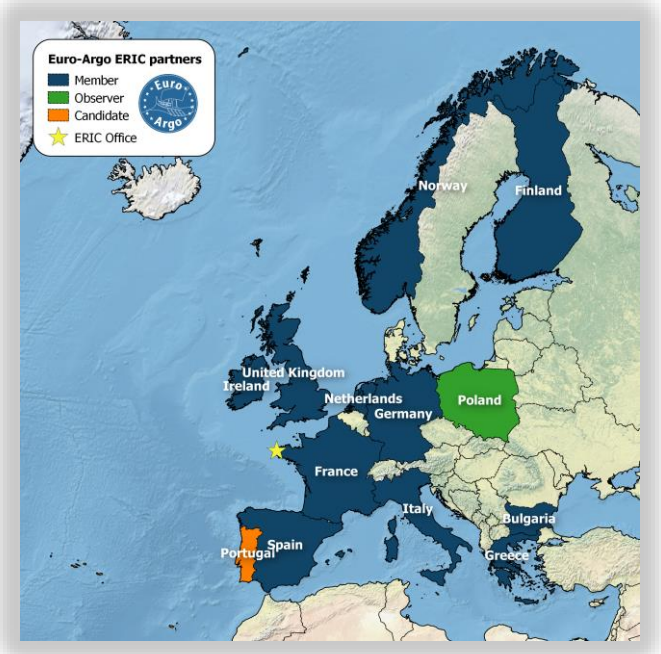
Claire Gourcuff, Euro-Argo ERIC Office

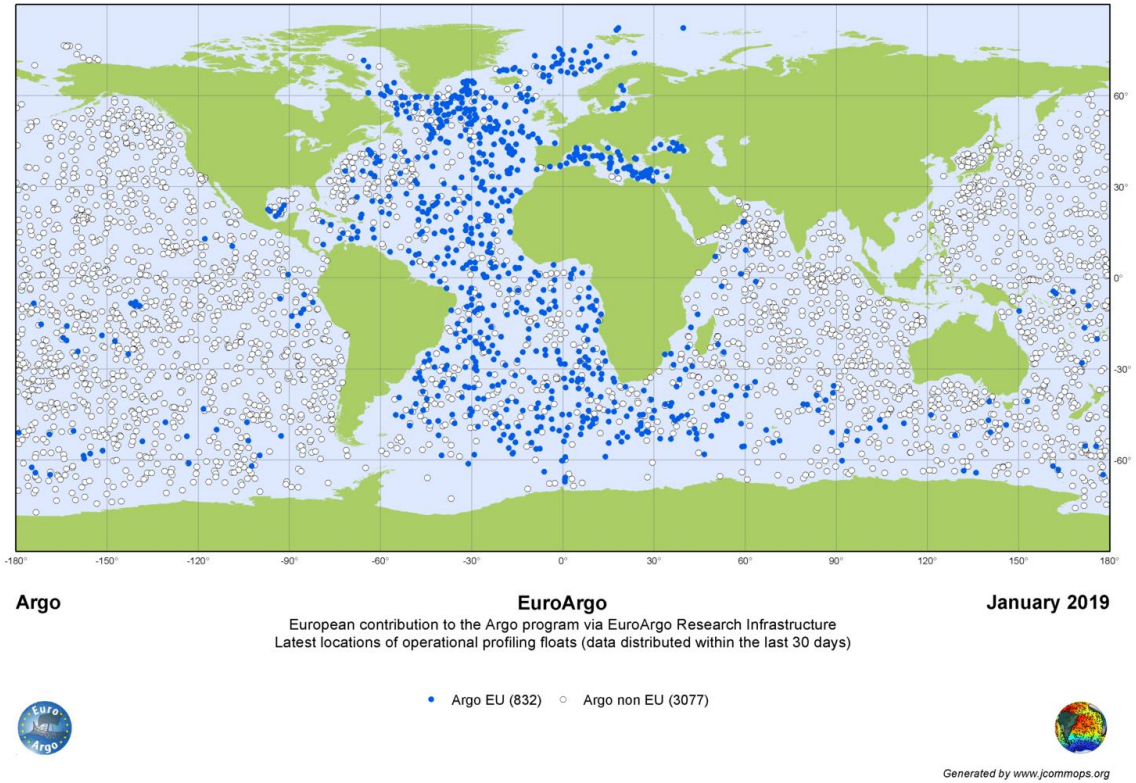
AST20 - Hangzhou, China - 13 March 2019

The Euro-Argo Research Infrastructure

<u>Objective</u> : To coordinate and sustain the European contribution to the global Argo network (1/4 of the network)

- The **Euro-Argo ERIC** (European Research Infrastructure Consortium) **was created in May 2014**
- In 2019, the ERIC involves 13 countries: **11 members, 1 observer and 1 candidate**





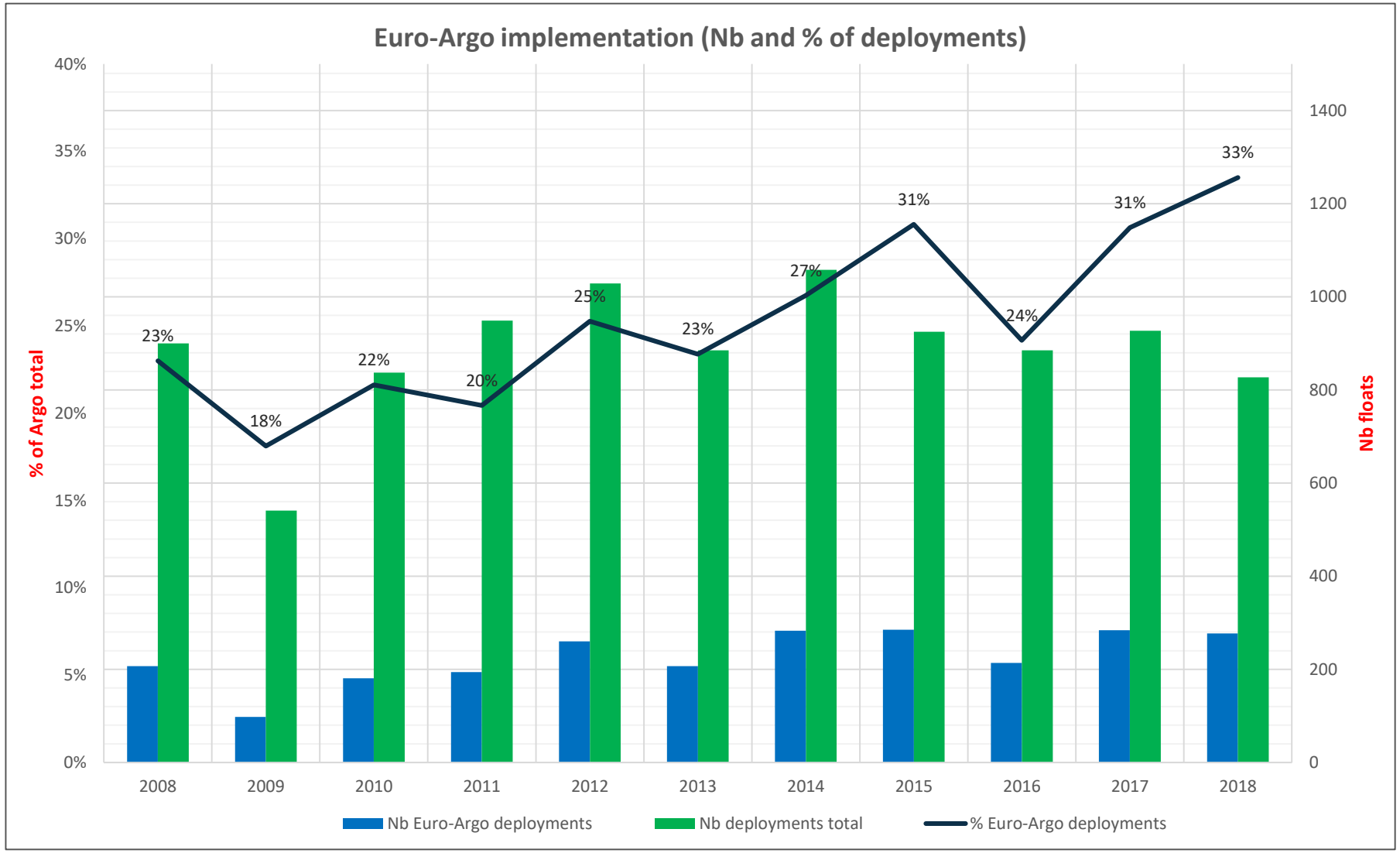
January 2019: 21% of the global network

Organisation of the Euro-Argo ERIC

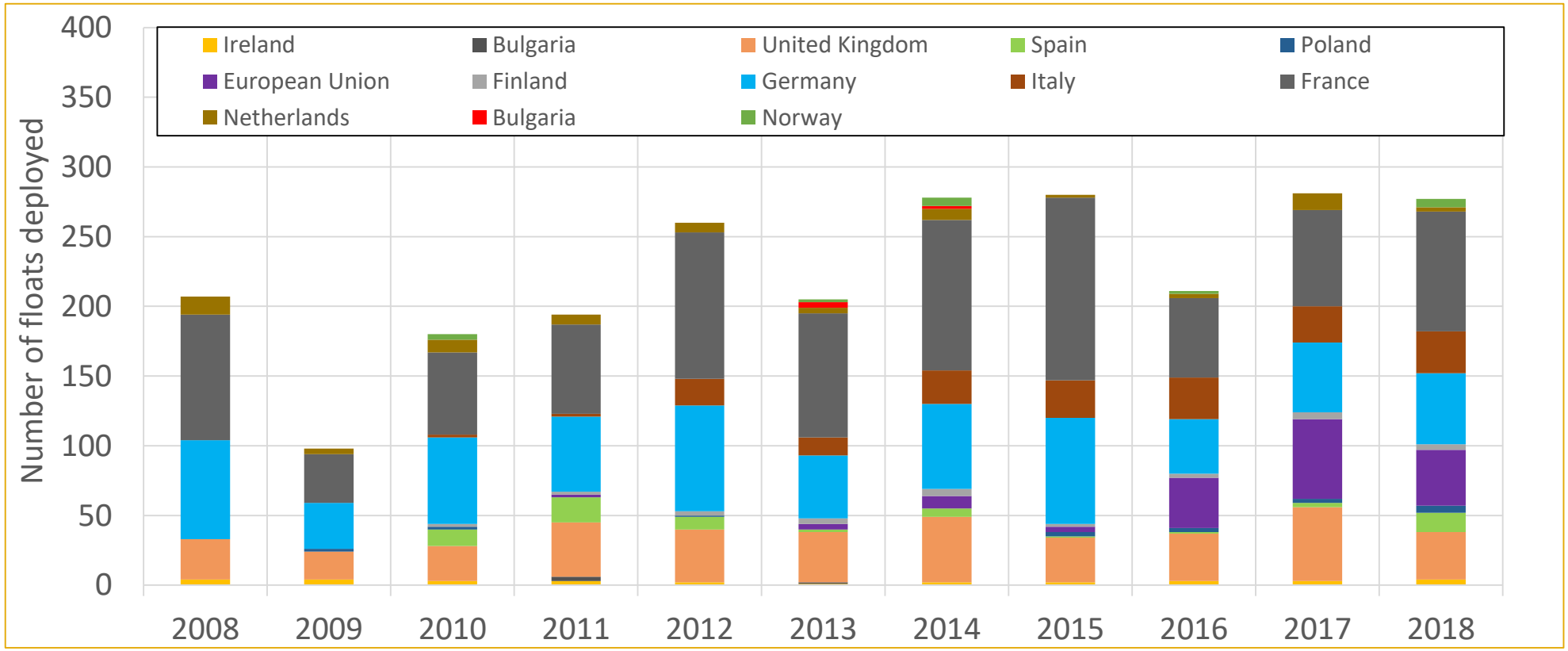
- Distributed national facilities & a central ERIC office
  - ERIC office (Brest, France): 6 persons with different backgrounds (technical, administrative, scientific)

- Governance bodies
  - Council (decision – ministry level)
  - Management Board (operations – scientific level)
  - Scientific and Technical Advisory Group

Euro-Argo deployments versus global deployments

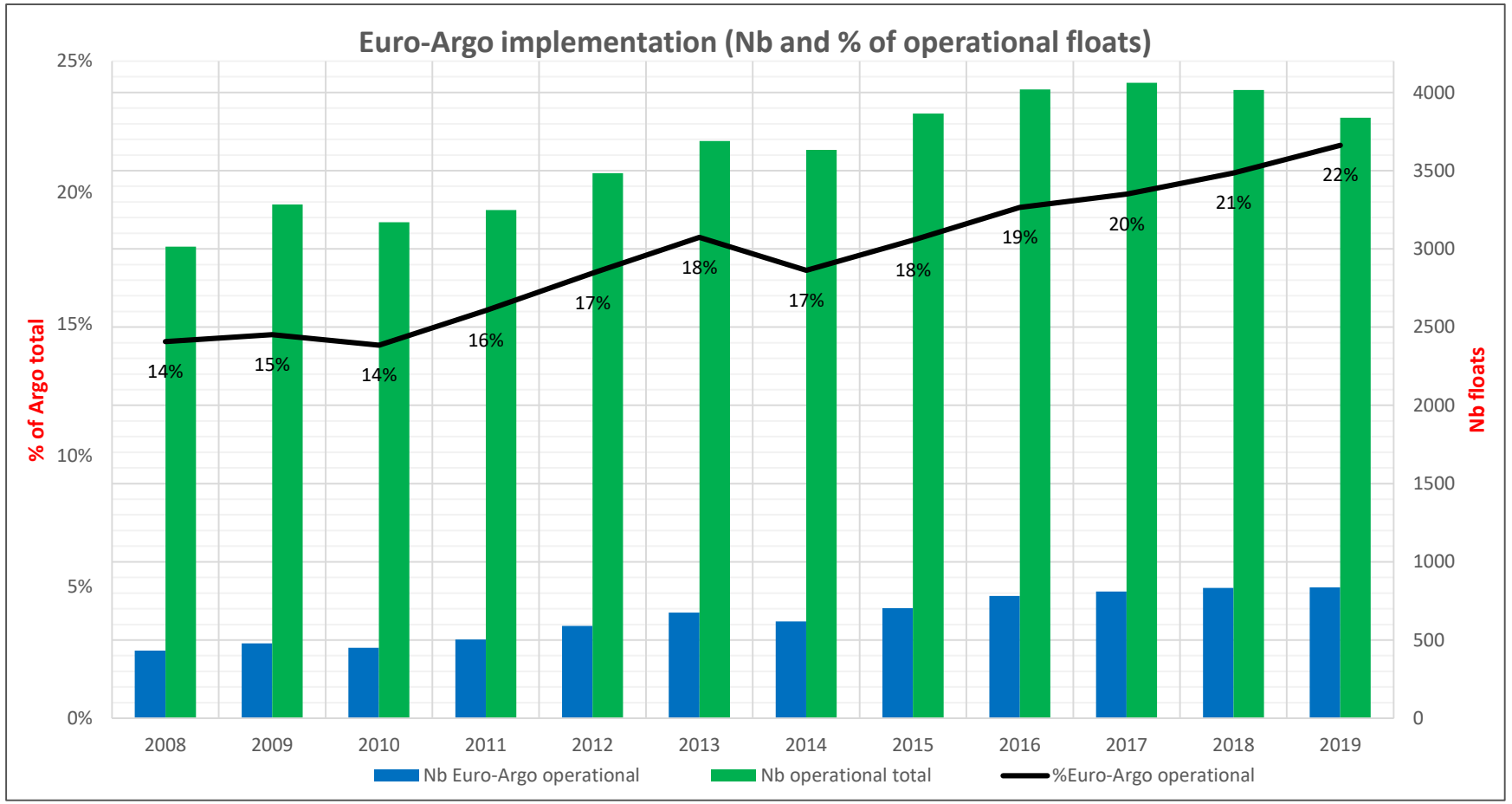


Euro-Argo deployments per country



- Importance of EU contribution in the recent years
- Contributions from new countries (Norway, Bulgaria, Ireland, Poland, etc.)

European contribution to the Argo network: operational floats

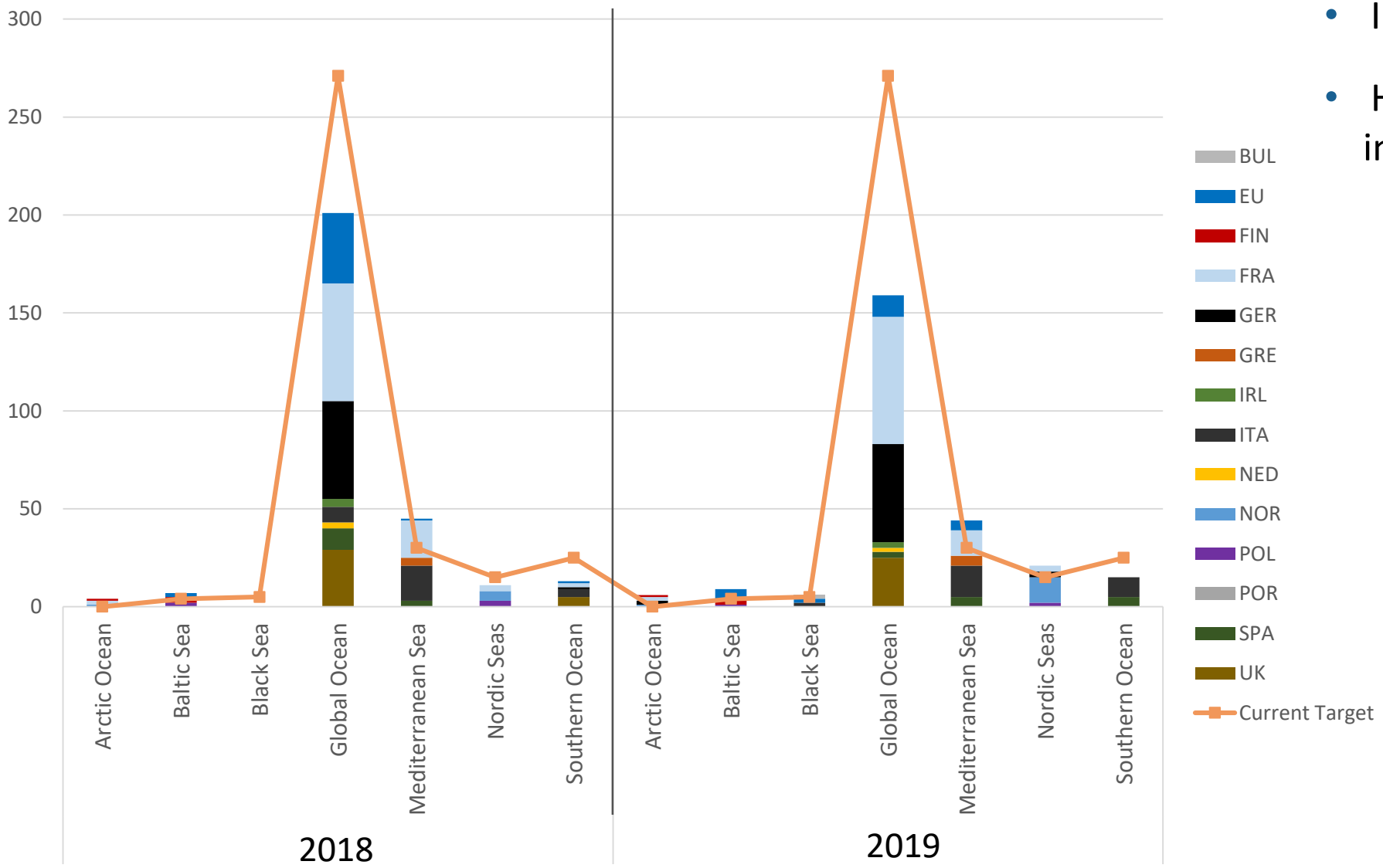


- European contribution slowly but constantly increasing

Current strategy for Argo in Europe

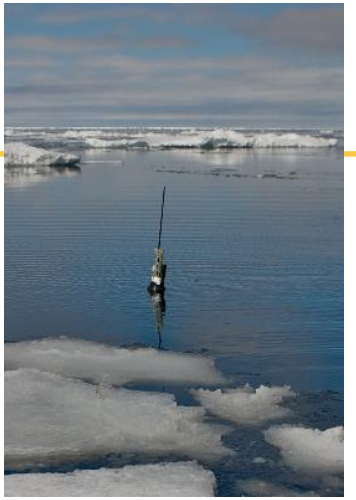
- Main Challenges:
  - **Maintain** the Research Infrastructure
  - Implement the network extension towards **abyssal ocean** (4000 to 6000m), **biogeochemistry**, partially **ice covered** areas and **shallow** waters regions
- Euro-Argo is developing its strategy in coherence with Argo international:
  - Sustain the core T&S mission, with an emphasis in Western Boundary regions
  - Monitor European marginal seas (Baltic, Mediterranean & Black seas)
  - Monitor high latitudes
  - Monitor the abyssal oceans: 1/5 of the global Argo-BGC network
  - Monitor ecosystem parameters: 1/5 of the global Deep-Argo network
- Reference document: ***"Strategy for evolution of Argo in Europe"*** **(Euro-Argo ERIC, 2017)**
  DOI: 10.13155/48526

Analysis of 2018 deployments & plans for 2019 by region



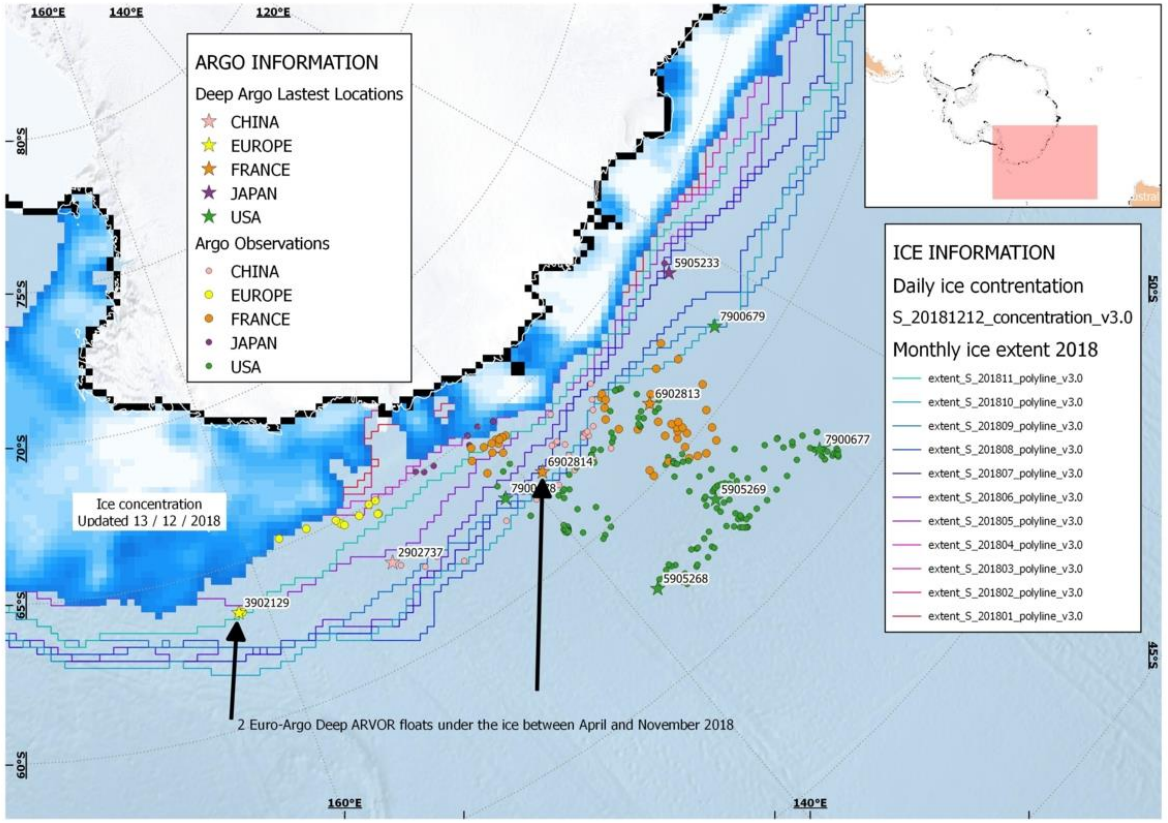
- Importance of marginal Seas
- High latitudes implementation increasing

High Latitudes



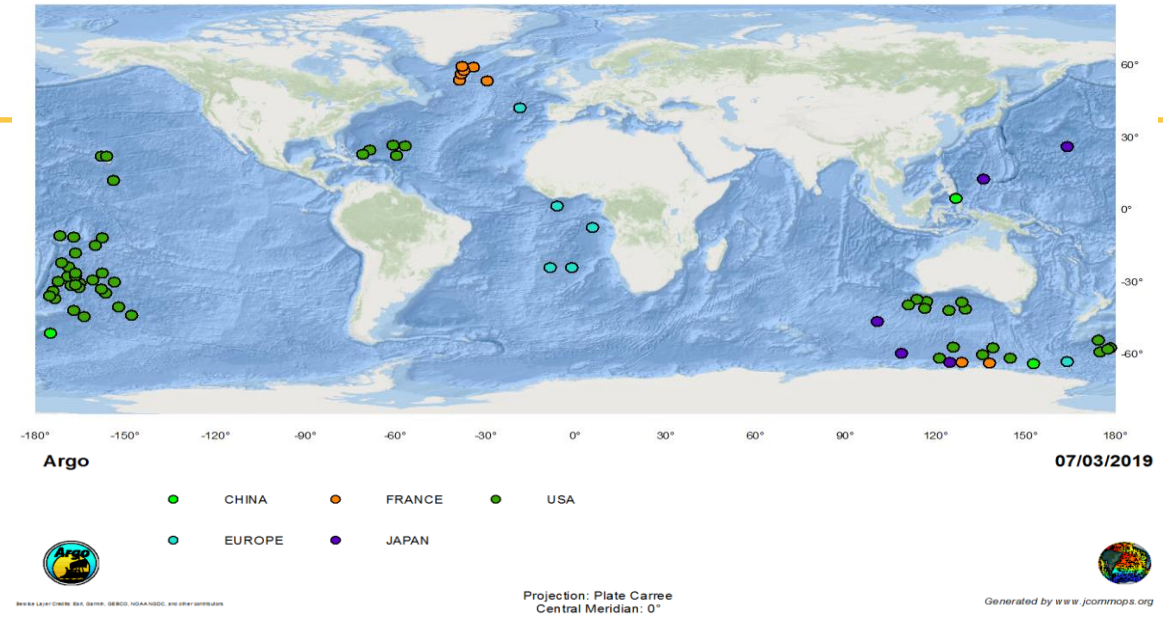
- Technology has been proven in Weddell Sea with floats able to stay for a long period under ice located with acoustic sources
- Recent promising results with **Ice Avoidance Algorithm in the northern hemisphere:**
  - Tests occurring in **Baffin Bay** (NAOS project) and in the **Baltic Sea**
  - Successful Ice Sensing Algorithm definition for the **Barents Sea**
  - Collaboration opportunities within INTAROS project for underwater positioning (acoustic sources) in the Arctic region
- Successful Deep Arvor deployment in the **Southern Ocean**

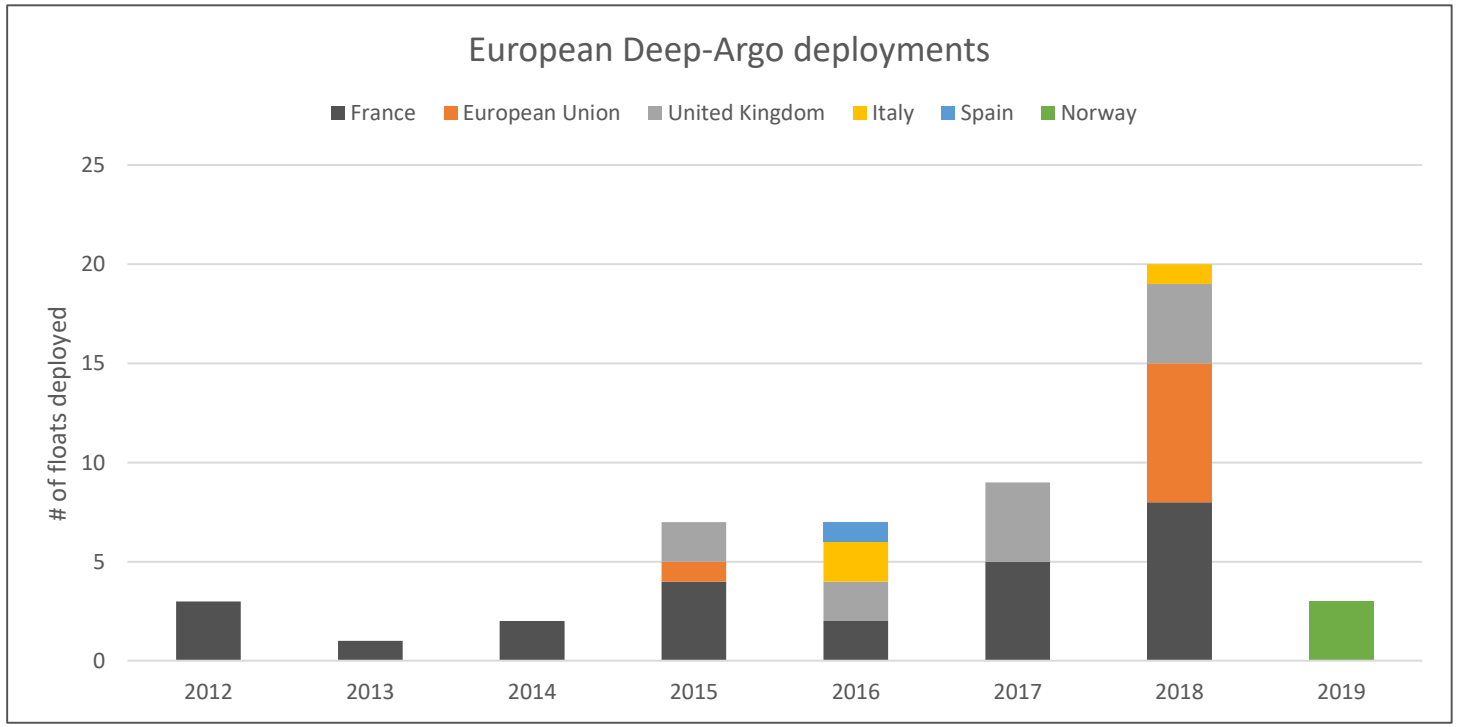
2 Deep Arvor floats under-ice between April & November 2018



European contribution to Deep-Argo

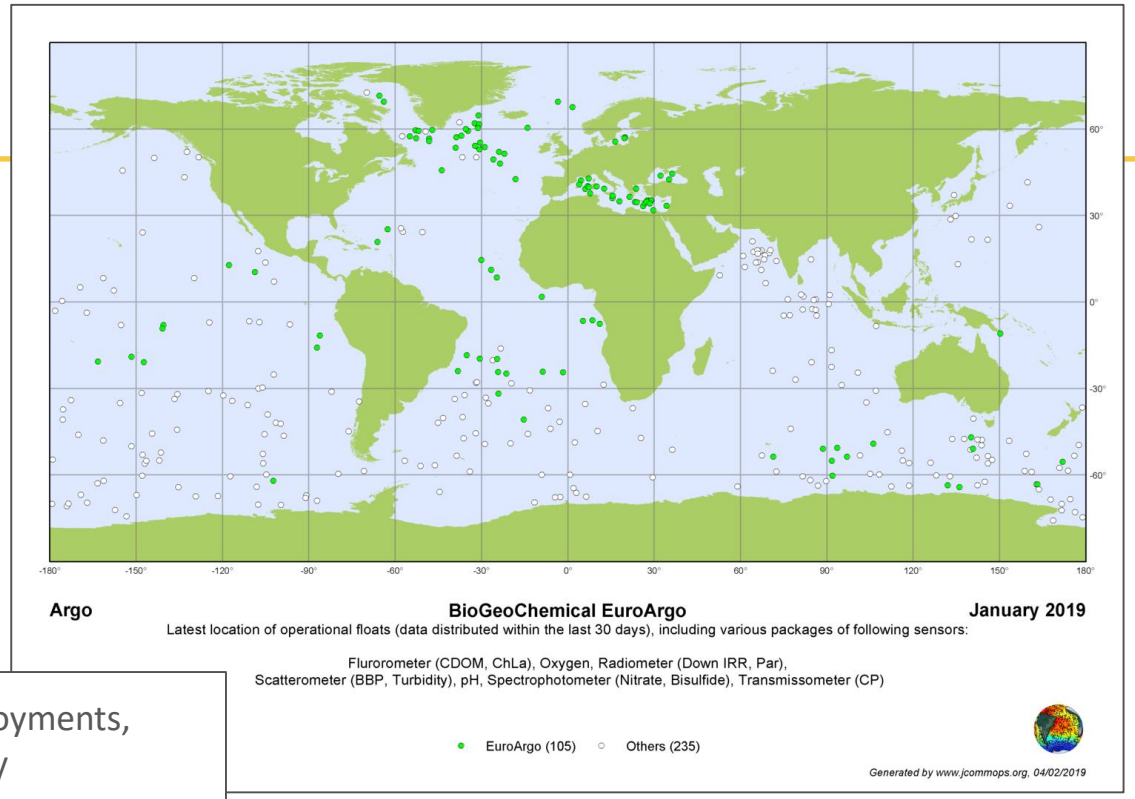
- Current target: 1/5 of the global network
  - 09-Mar-2019: 19% of the global network
- Mainly France, UK, EU

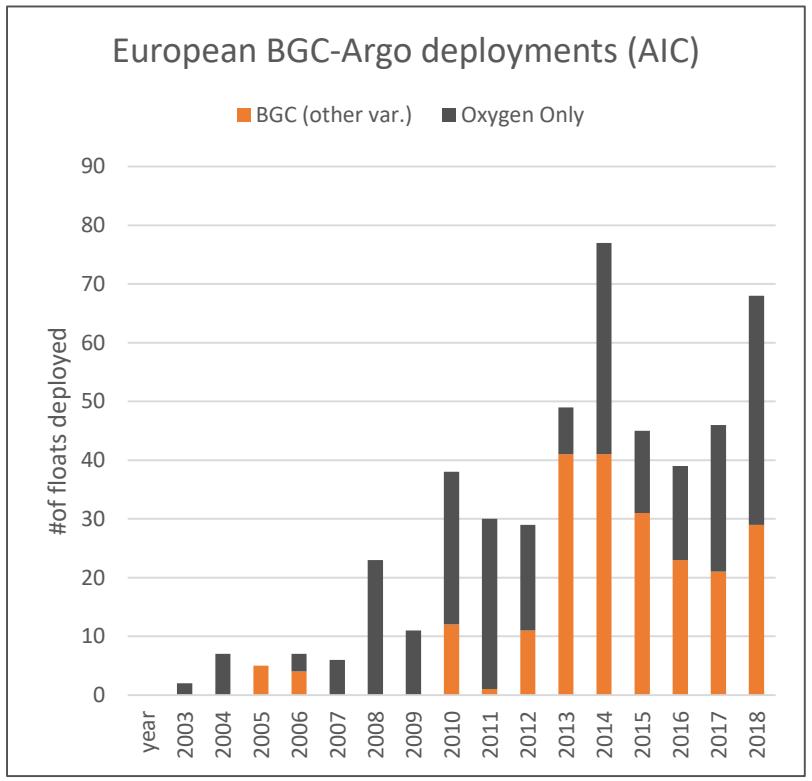


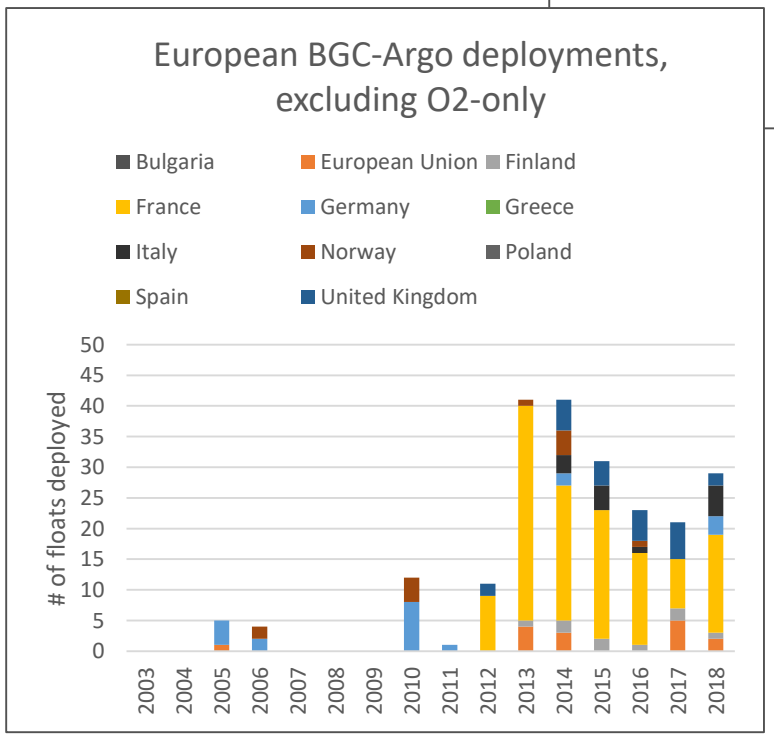


European contribution to BGC-Argo

- Euro-Argo aims to contribute to 1/5 of the global BGC-Argo network
  - Current target: deployment of **50 BGC floats per year** (200 active floats)
  - January 2019: 30%

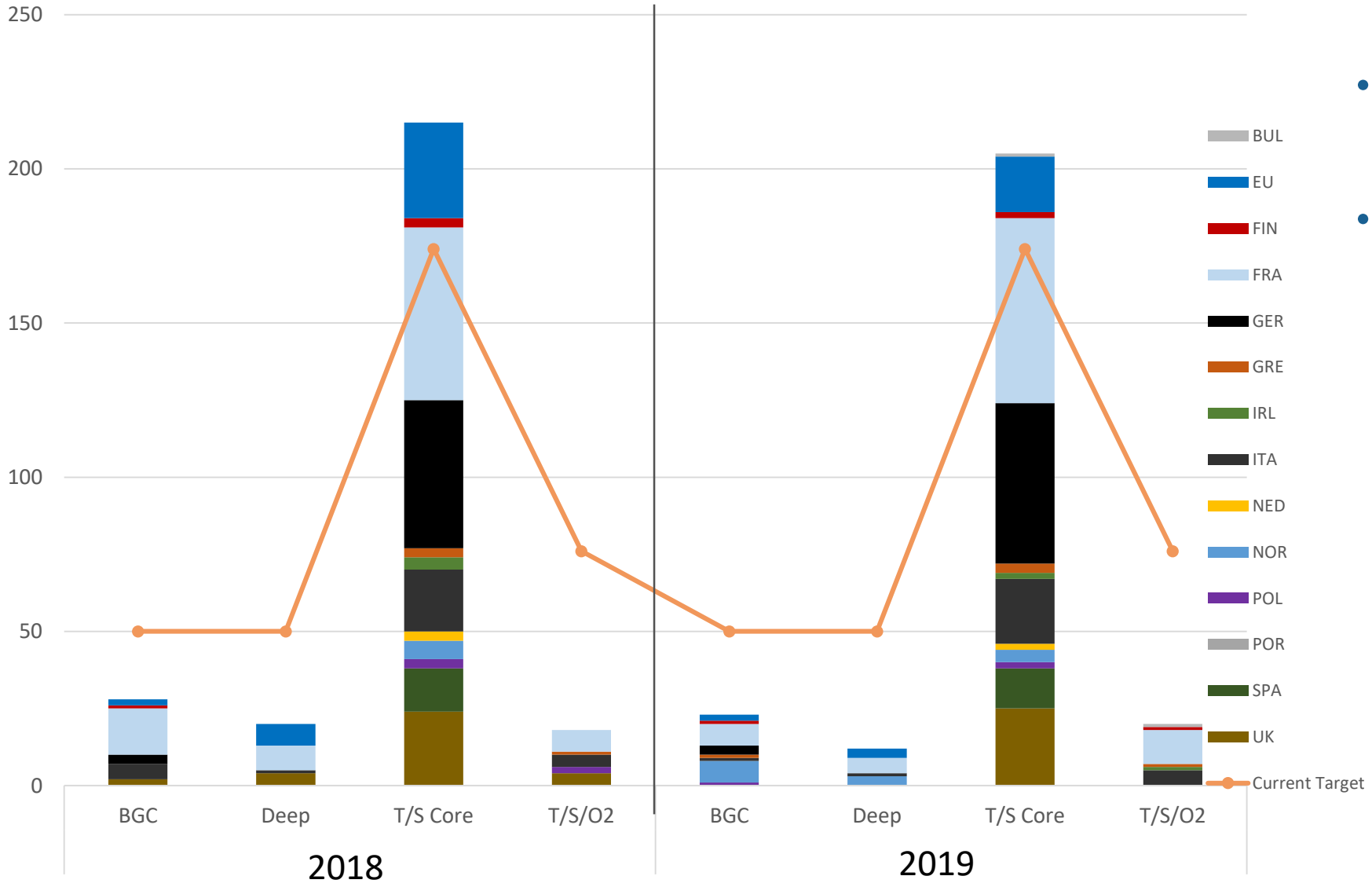






- Increase last years
- Mainly France but new partners entering the game (Finland, Norway, Ireland)

Analysis of 2018 deployments & plans for 2019, by type of measurements



- T/S core target reached without EU projects
- BGC and Deep increasing

Euro-Argo RISE EU H2020 project

- 19 partners, 2019-2022, 4M€, 411 person months
- Main Objectives :
  - Develop the maturity of the different elements of Argo network in Europe
    - ✓ Improving the technology & the data system
    - ✓ Engage with the private sector upstream fostering the development of instruments and sensors required by the Argo programme
  - Strengthen the Euro-Argo ERIC by increasing the membership
  - Enhance services to users by enhancing the products to better fit their requirements
    - ✓ Engage with downstream users, in partnership with Copernicus and EMODnet (MoUs), to facilitate access to Argo data and products for research and application development
  - Integrate Argo in a multi-platform observing system in link with the EOOS initiative
    - ✓ Foster the links with other Marine and Environment RIs
    - ✓ Update our deployment strategy

Euro-Argo RISE KO meeting, January 2019, Brest

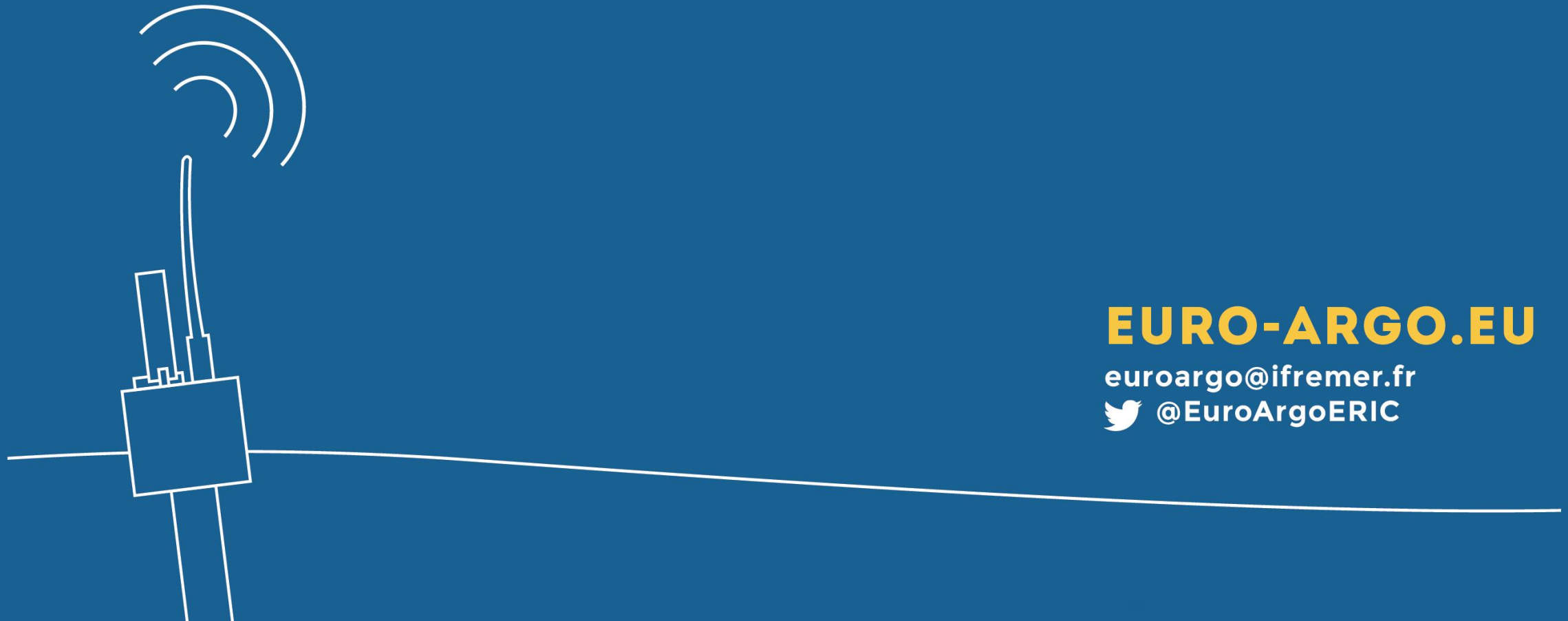
Expected results

- Network
  - Recommendations to operate Argo floats in all the Euro-Argo RISE targeted areas
  - Recommendations for use of alternative sensors for both physical and BGC parameters and engagement with manufacturers for their implementation on existing float types
  - Enhancement of Euro-Argo fleet behavior through monitoring facilities
  - Total of 17 floats funded under the Euro-Argo RISE project
- Data Management
  - Organization of BGC data processing (NRT and DMQC) in Europe
  - Contribution to improvement of the Argo data management system (ENVRI-FAIR project)
- Strategy
  - Plan for the Euro-Argo strategy implementation as well as revised Strategy for next decade

Main achievements over the last 5 years

- ERIC membership extended from 9 (FI, FR, DE, GR, IT, NE, NO, PO, UK) to 12 countries (IR, SP, BU)
- European contribution increased from 17% to 22% of the global network
  - Next challenge is sustainability of network and extension to new missions
- Capacity to extend the network to biogeochemistry, greater depths and specific regions through technological developments (higher latitudes, marginal seas) [E-AIMS - FP7, AtlantOS – H2020]
- Development of a European community in Argo
  - Better visibility through communication activities
  - Organization of events (biennial Users Workshops, DMQC training workshop in 2018, etc.)
- New services for the members:
  - Centralised float procurement/testing
  - Tools for at-sea monitoring of the Argo fleet
- Fostered links with other environmental Research Infrastructures [ENVRIplus – H2020]
- Success in setting-up proposals for EU funded projects:
  - MOCCA – EASME/EMFF [2015-2020]
  - Euro-Argo RISE – H2020 [2019-2022]

Thank you for your attention



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