

# EURO-ARGO

EUROPEAN RESEARCH  
INFRASTRUCTURE CONSORTIUM  
FOR OBSERVING THE OCEANS



SCIENTISTS

150



SHIPS

100



INSTITUTES

30





**4,000**  
ACTIVE FLOATS  
AT ANY TIME



**10 DAYS**  
CYCLING PERIOD  
MEASURING  
ENVIRONMENTAL  
PARAMETERS:  
TEMPERATURE,  
SALINITY,  
CHLOROPHYLL,  
OXYGEN,  
NUTRIENTS,  
TRAJECTORY...



DOWN TO  
**2,000 M**



# ARGO INTERNATIONAL

## Program

Argo is an international global network with a target of nearly 4,000 autonomous profiling floats drifting at set depths all over the world ocean and taking measurements of temperature and salinity from the sea surface down to 2,000 m depth. Observations are delivered via satellites within a few hours from acquisition to data centers where the data are processed and provided to users through a **free and open-data access**.

## Main challenges

The international Argo program has defined, as a first priority, the maintenance of the global array of temperature and salinity measurements, with a need of about 1,000 new floats deployed each year by national programs.

## Why Argo?

Climate change is one of the most pressing issues of the century. The oceans have a fundamental influence on our **climate and weather**. They store, transport and exchange with the atmosphere large amounts of **heat, water and gases**. These exchanges dramatically affect global and regional climates in time scales ranging from days to centuries.

Long term high quality global ocean observations are needed to understand the **role of the ocean** on the earth's climate and to predict the evolution of our weather and climate.



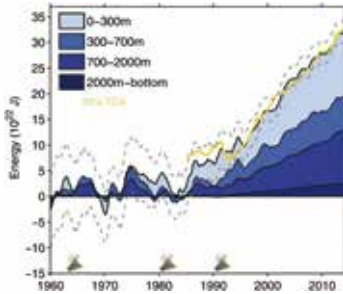
# USERS & APPLICATIONS

## Operational oceanography

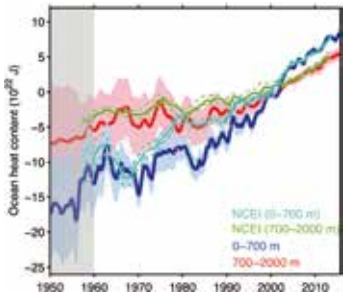
Argo is the single most important in situ observing system required for the Copernicus Marine Core Service (CMEMS). Argo and satellite data are assimilated into CMEMS models used to deliver regular and systematic reference information on the state of the ocean for the global ocean and the main European seas.

## Research

Argo provides an unprecedented dataset for researchers to study water mass characteristics and ocean variability ranging from seasonal cycle to interannual variability and climate variations at decadal time scales. **1**

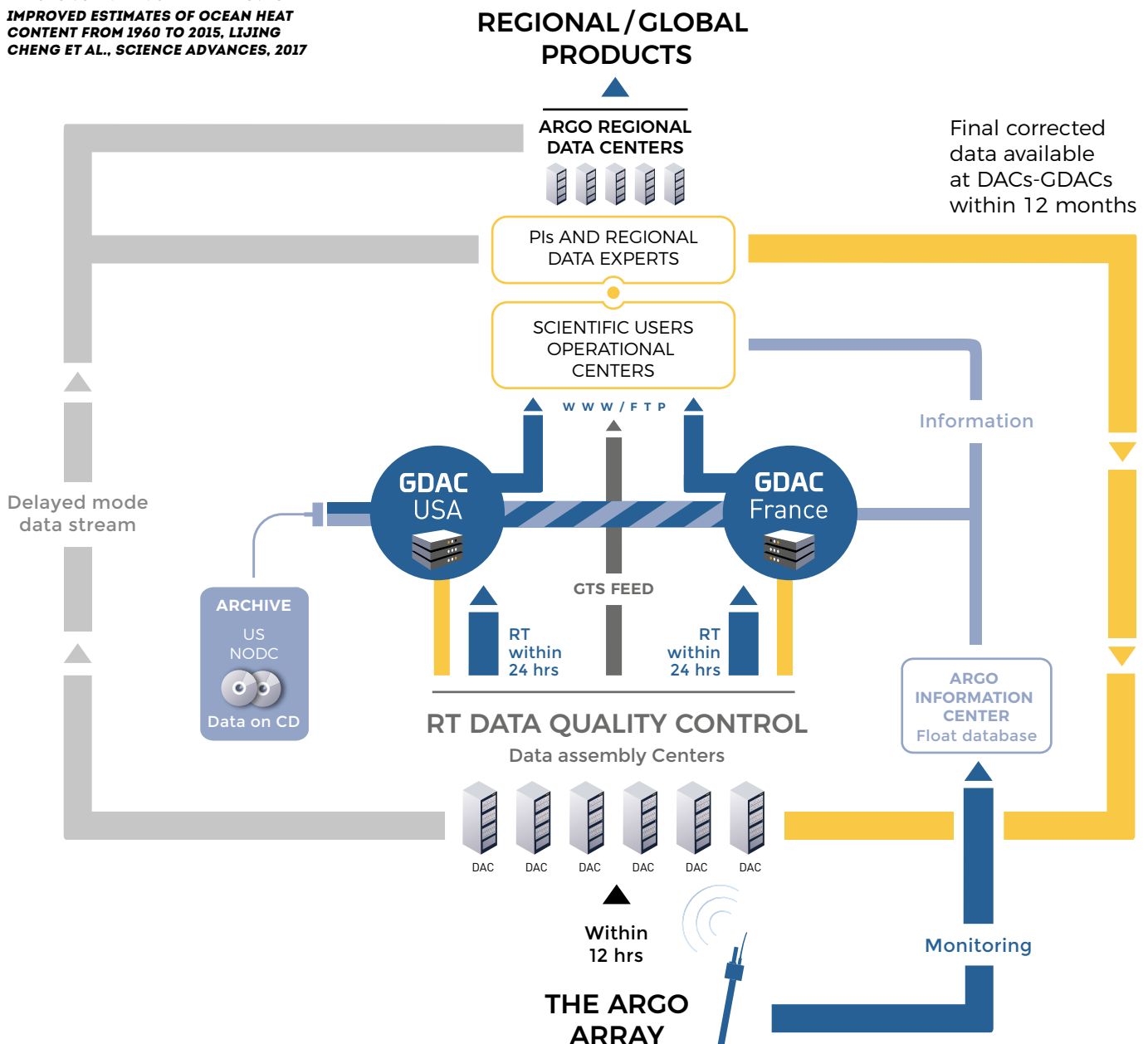


Estimate of the ocean energy budget relative to the 1958-1962 base period



Global OHC change time series

**1** REDUCING OCEAN HEAT CONTENT STUDY ERRORS USING ARGO ERA DATA SUBSET  
IMPROVED ESTIMATES OF OCEAN HEAT CONTENT FROM 1960 TO 2015, LIJING CHENG ET AL., SCIENCE ADVANCES, 2017



EURO-ARGO DATA USE:



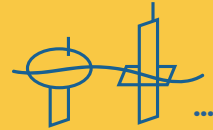
**10**  
PHD THESIS/YEAR



**2**  
PEER REVIEWED  
PAPERS PER WEEK



**35,000**  
PROFILES/YEAR

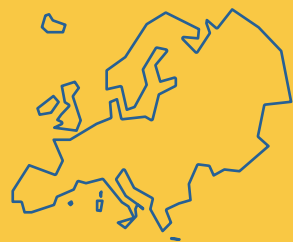


**7**  
FLOAT  
TYPES

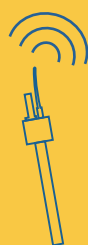
ACCEPTANCE TESTS OF EURO-ARGO  
PROFILING FLOATS IN SEAWATER TANK.



# EURO-ARGO RESEARCH INFRASTRUCTURE



**250 FLOATS**  
DEPLOYED PER YEAR  
BY EUROPE



**1,000 FLOATS**  
IN OPERATION  
AT ANY TIME

## Role

Euro-Argo sustains and optimises the **European contribution** to the international Argo program. The objective is to provide a **world-class service** to research and operational communities. Euro-Argo aims to develop the capacity to ensure one fourth of the global network and ensure that all data are processed and delivered to users in real time.

definition for monitoring marginal seas, high latitudes, the abyssal oceans and ecosystem parameters.

## Organisation

In 2017, Euro-Argo involves 11 countries: 9 members and 2 observers.

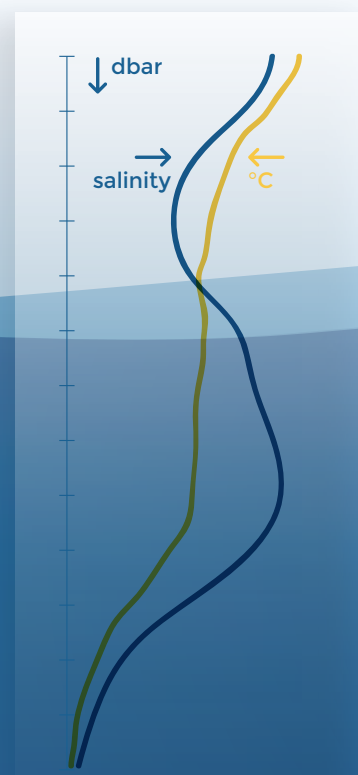
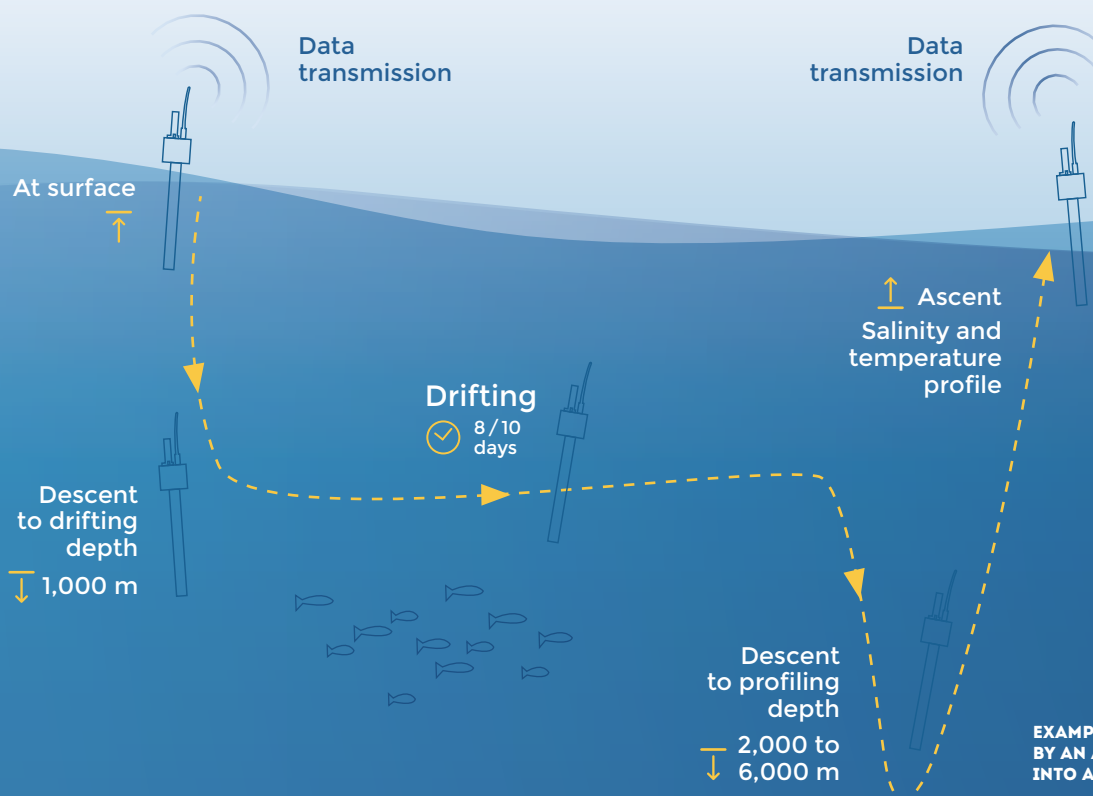
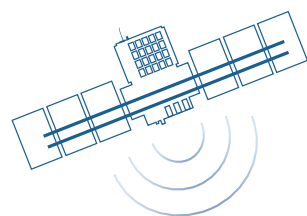
In 2014, Euro-Argo became an ERIC (European Research Infrastructure Consortium), a legal entity that ensures its funding in the medium term through commitments of its members and observers at state level.

The Euro-Argo ERIC office is located in Brest, France. The office team, expert in all aspects of the program, is responsible for the overall coordination of the ERIC. It also participates in the procurement and deployment of floats.

## Strategy

To fulfill the future scientific needs, Euro-Argo is also developing the **extension of the network** towards **high latitudes, biogeochemistry measurements** and **greater depth** (6,000 m).

Several Euro-Argo pilot programs are ongoing and specific goals are under



EXAMPLE OF A STANDARD PROFILE MEASURED BY AN ARGO FLOAT: MEDITERRANEAN OUTFLOW INTO ATLANTIC OCEAN.

**11**  
COUNTRIES



**3**  
SUPPORTS



**1** LABEL



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