Maritime Policy and Argo

Matthew King,
Directorate General for Maritime Affairs and Fisheries
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there is only one planet Earth

photograph by
astronaut William
Anders in 1968 during
the Apollo 8 mission

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www.nature.com/nature

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Patching together a world view

Data sets encapsulating the behaviour of the Earth system are one of the greatest technological achievements of our age — and one of the most deserving of future investment.

Technology can change the way we see the world. If the artist David Hockney is to be believed, the camera obscura changed the way artists drew things, and thus how their audiences saw them. Centuries later, photographic film changed the visual arts again, as painters sought to recapture subjectivity in fresh impressionisms and expressionisms in response to the new technology. Then cinematography brought with it a new mastery over time. Compressed, it turned buds to blooms in seconds — reversed, it re-erected falling chimneys with pleasing symbolic power. These tricks became embedded in our minds, letting us think of time moving backwards and forwards, faster and slower with an educated ease previously absent from the imagination.

In the past two decades, the computer has changed things yet again, introducing an almost infinite capacity to bring what was previously non-visual to the eye, and an almost infinite range of points of view impossible to reach in any other way. The ability to change point-of-view and depth-of-field massively and arbitrarily has created a peculiarly contemporary way of seeing, which American technology writer Steven Johnson has called "the long zoom". This is when a camera focused on, say, a human eye appears to hurtle pell-mell through the pupil to the nucleus of a cell — or pulls back from the orbit of the eye to an orbit round the planet.

In the world of the long zoom, the planetary scale has a particular significance. It links every image of the world to the great image of Earth that contains them all. It builds on and subverts the change first introduced by space flight almost 50 years ago — the ability to

One of the most profound contributions to this approach came from the late David Keeling, a pioneer of climate research who was the first person reliably to measure carbon dioxide levels at remote locations such as Mauna Kea in Hawaii or the South Pole, in what his friend and boss Roger Revelle famously called mankind's "great experiment" with the planet's climate. Keeling's simple instruments became the basis of a network around the world for monitoring trace gases. At various times it was suggested to Keeling that he should perhaps desist from taking such endless care over a single data stream — that this wasn't the basis of great science. It took courage and conviction to keep going — and even now, his heirs struggle to continue the work in the face of unwilling funders and apathetic peers (see page 789).

> "Ideas not followed through can be taken up again later. A record not made is gone for good."

Now or never

Monitoring the Earth system requires great expertise, not just to build the instruments but to use them properly and interpret their output. Many scientists are, however, far from enthused by projects that do not involve the forming and testing of hypotheses. At worst, monitoring is traduced as stamp collecting and looked down on as drudgery.

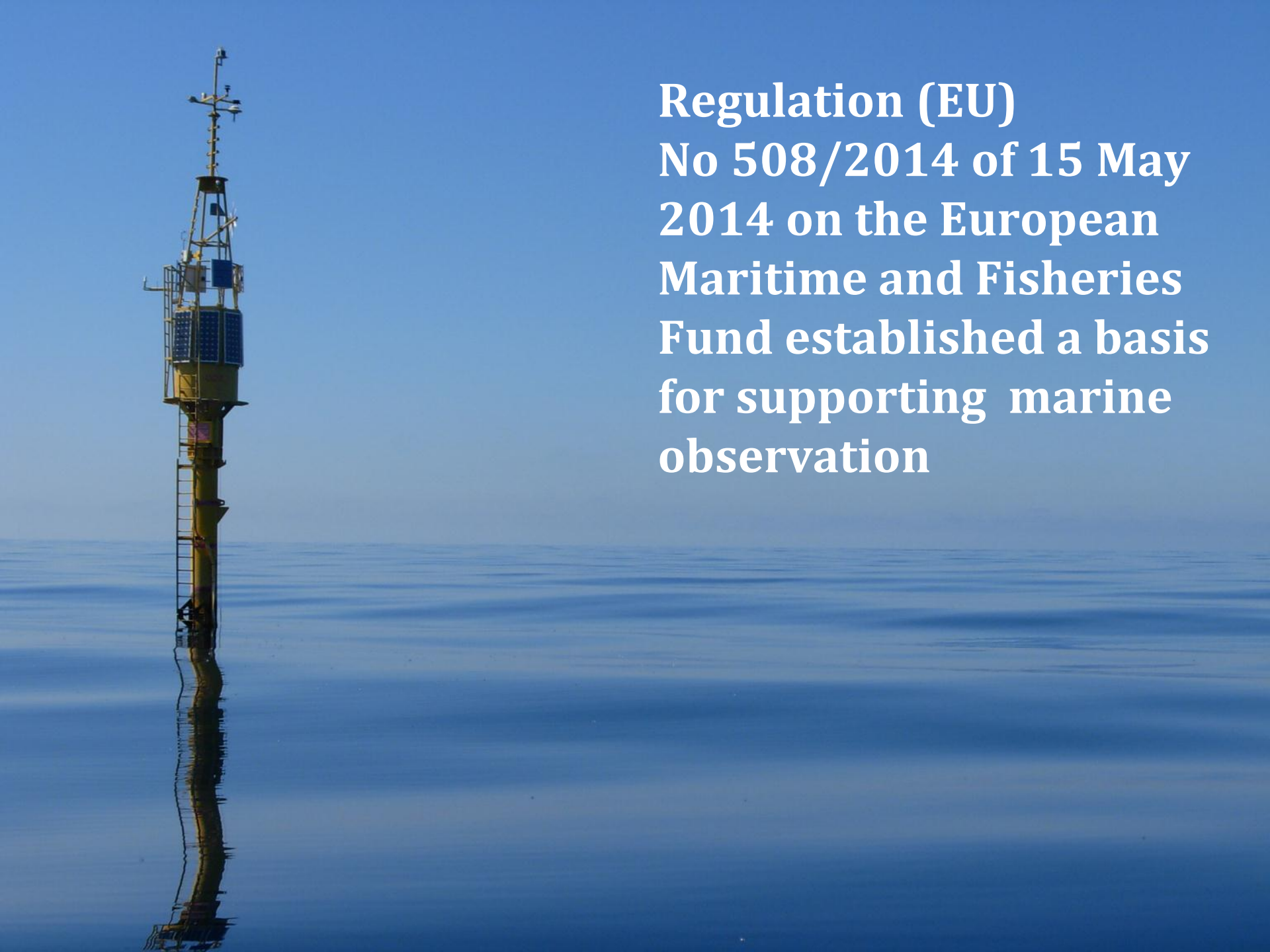
Such attitudes must not be allowed to prevail. Testing hypotheses

knowledge needed for blue economy

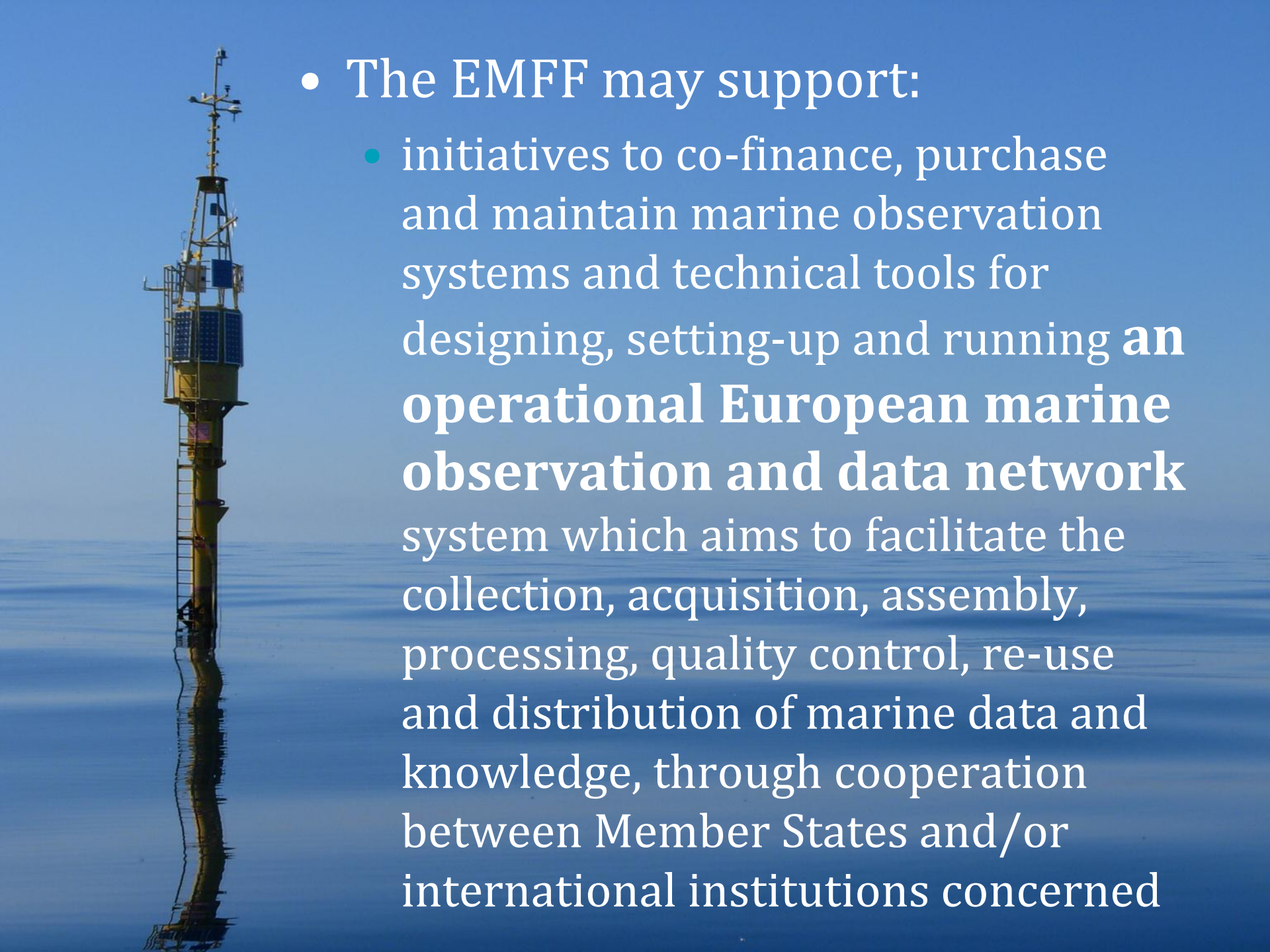
- fishing
- shipping
- offshore oil and gas
- coastal protection
- tourism
- aquaculture
- renewable energy
- seabed mining
- marine biotechnology
- water sports

Regulation (EC) No. 1543/2000 established a framework for the collection and management of the data needed to conduct the common fisheries policy

Regulation (EU) No 377/2014 of 3 April 2014 established the Copernicus Programme

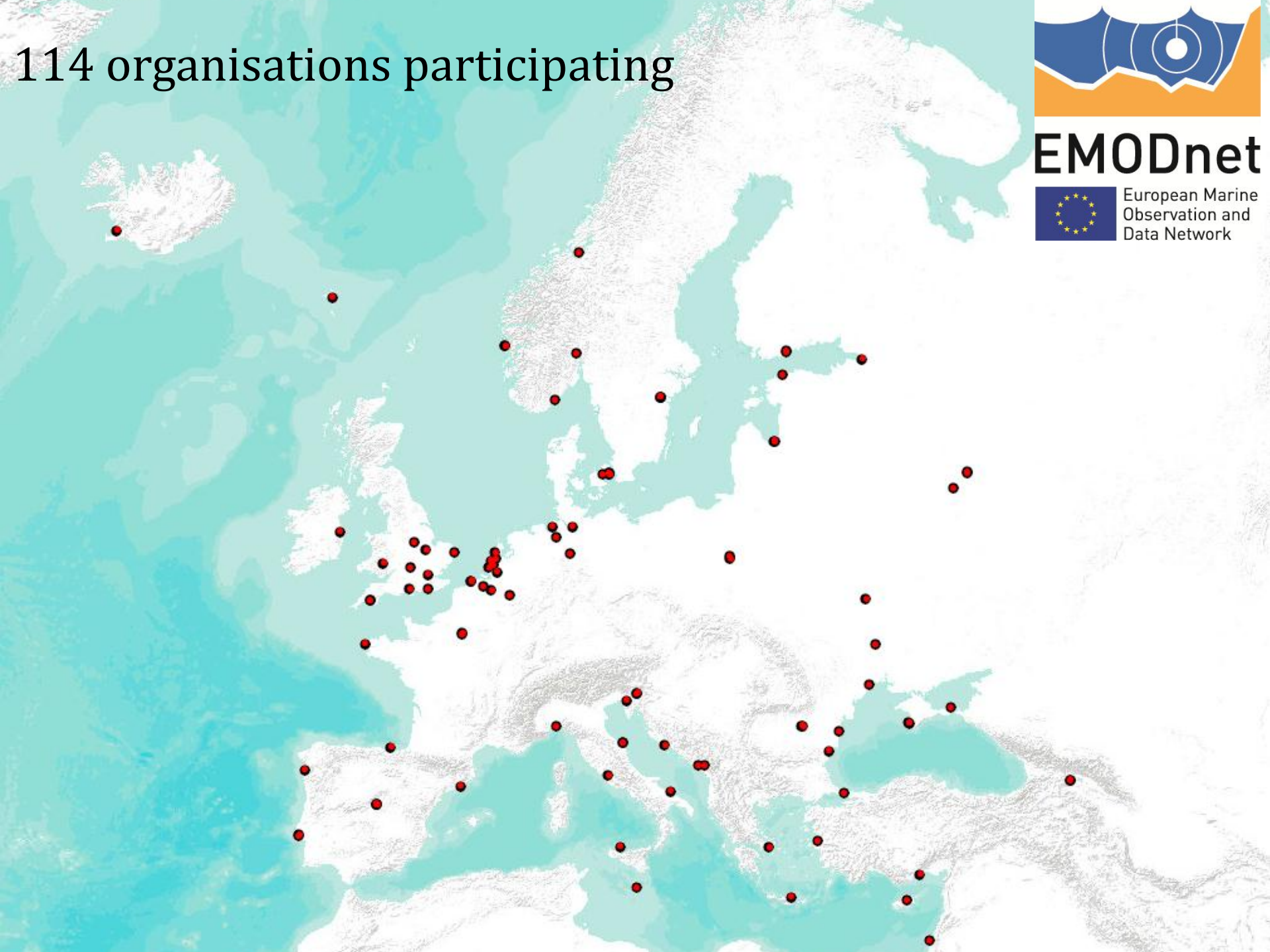


Regulation (EU) No 508/2014 of 15 May 2014 on the European Maritime and Fisheries Fund established a basis for supporting marine observation



- The EMFF may support:
  - initiatives to co-finance, purchase and maintain marine observation systems and technical tools for designing, setting-up and running **an operational European marine observation and data network** system which aims to facilitate the collection, acquisition, assembly, processing, quality control, re-use and distribution of marine data and knowledge, through cooperation between Member States and/or international institutions concerned

114 organisations participating



EMODnet

European Marine Observation and Data Network

EMODnet Central Portal

European Marine Observation and Data Network

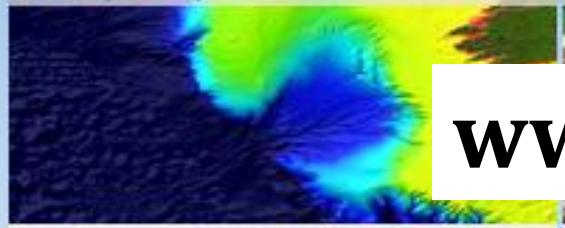
Data Portals | Data Products | Web Services | Sea Basin Checkpoints | Partners | About | Secretariat

The European Marine Observation and Data Network (EMODnet) is a consortium of organisations within Europe that assembles marine data, data products and metadata from diverse sources in a uniform way. The main purpose of EMODnet is to unlock fragmented and hidden marine data resources and to make these available to individuals and organisations (public and private), and to facilitate investment in sustainable coastal and offshore activities through improved access to quality-assured, standardised and harmonised marine data. EMODnet is an initiative from the European Commission Directorate-General for Maritime Affairs and Fisheries (DG MARE) as part of its Marine Knowledge 2020 strategy.

Presently, there are six sub-portals in operation that provide access to marine data from the following themes: bathymetry, geology, physics, chemistry, biology, and seabed habitats . One further portal covering human activities is currently under construction.

www.emodnet.eu

Bathymetry



Data on bathymetry (water depth), coastlines, and geographical location of underwater features: wrecks.

Read more

Geology

Data on seabed substrate, sea-floor geology, coastal behaviour, geological events and probabilities, and minerals.

Read more

Seabed Habitats

Data on modelled seabed habitats based on seabed substrate, energy , biological zone, and salinity.

Read more

Chemistry

Data on the concentrations of chemicals (pesticides, heavy metals, antifoulants) in water, sediments and biota.

Biology

Data on temporal and spatial distribution of species abundance and biomass from several taxa.

Physics

Data on salinity, temperature, waves, currents, sea-level, light attenuation, and FerryBoxes.

And,

- whilst the main objective of the marine knowledge component of the European Maritime and Fisheries Fund will be to improve the interoperability and availability of existing observations,
- the Commission aims to provide limited support to certain in-sea observations.

latest status

- latest status
  - preparing 2015 work programme
  - aim to include grant to EuroArgo

thank you for your attention

European Commission