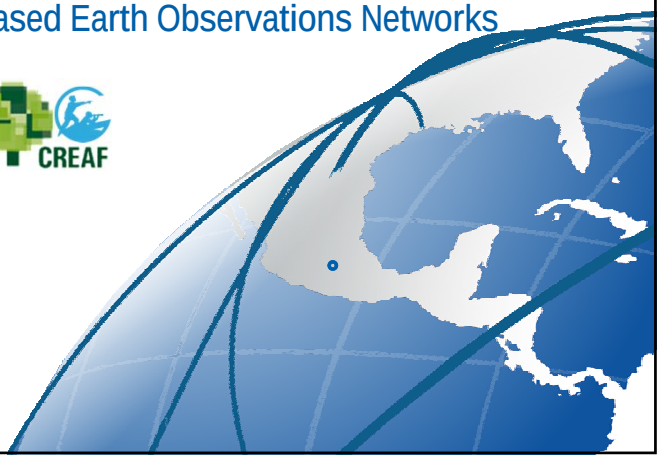
Towards an European Network of Earth Observation Networks (ENEON):

Addressing Challenges and Facilitating Collaboration for non-space based Earth Observations Networks

Joan Masó
Researcher at CREAF

November 10th
GEO-XII Plenary
Mexico



Earth Observation Networks

ACTRIS, IAGOS, SeaDataNet, Euro-Argo, EISCAT, INTER-ACT, LTER, is-enes, AnaEE, eLIXIR, LifeWatch, SIOS, EPOS, Eurofleets2, ESONET NOE, ICOS, EMSO, EMBRC, EuroGOOS

GROUP ON EARTH OBSERVATIONS

SC5-18-2014: Coordinating and supporting Earth Observation research and innovation in the EU

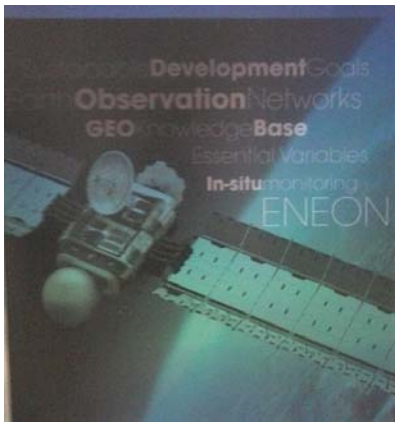
- The EU's contribution to the monitoring of our planet by land, sea, air and space-based Earth Observation systems **remains too fragmented**. An improvement is therefore urgently needed to enable effective, sustainable planning and management of measures to cope with regional and global challenges.

- Bringing together Earth Observation-related research and innovation networks and activities (space-based, airborne and **particularly in-situ**) within the EU to provide coherent, continuous, timely and accurate information, forecasts and projections in support of GEOSS and Copernicus

ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

ConnectinGEO in brief



- H2020 funded project that will last 2 years (641538)
- Coordinate and Support Action (CSA)
- Formed by 15 partners
- A contribution of the EU to GEOSS
- A gap analysis of GEOSS
- Will propose priorities
- Proposes a European Network of Earth Observation (ENEON).

ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

Partnership

Good balance:
- Some technical people
- Some thematic experts
- Some networking experts

ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

Summary

ConnectinGEO

- ConnectinGEO links existing coordinated Earth observation networks with science and technology (S&T) communities, the industry sector and the GEOSS and Copernicus stakeholders.
- The emerging UN Sustainable Development Goals (SDGs) are a motivation.
- Outcome:
  1. Prioritized list of critical gaps within the European Union in observations and the models that translate observations into practice-relevant knowledge. It will include the research activities required to remedy these gaps.
  2. **Increase coherency of European observation networks, increase the use of Earth observations and inform the planning for future observation systems.**

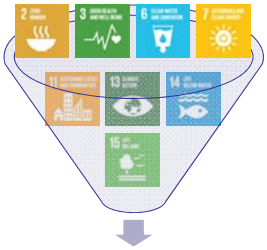
ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

1 ConnectinGEO response: Gap Methodology

- First translate knowledge needs (e.g. SDG) into indicators and
- Indicators as mapped into essential variables (EV) required for the quantification;
- Ultimately, these EV are used to refine observations.

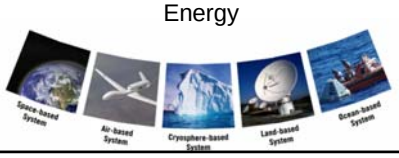
- Detect gaps in the chain
- *Other threads are applied*



EVs

ECV (contains: At. Composition, land use, FAPAR, LAI…)

EBV, EOV, Water Agriculture, Ecosystems, Energy



ENEON

GROUP ON EARTH OBSERVATIONS

2 ConnectinGEO response: ENEON

In ConnectinGEO, a study is aiming to review all existing EO networks in Europe and to map their interactions.

Establish a European Network of Earth Observation Networks (**ENEON**)

ENEON is a common network of Earth observation networks to provide integrated and harmonized perspective of observations, helping to reduce redundancies and detect gaps in the European EO arena.

ENEON considers all thematic areas and is open to contributions from GEOSS as well as Copernicus stakeholders, SMEs and industry, funding agencies, and most importantly European networks for space-based, airborne, ship-borne and in-situ observations.

ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

Vision

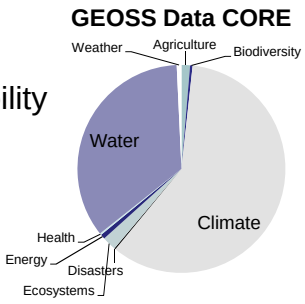
All European Earth observation networks are **interoperable** and **coordinated** across disciplines and sectors with respect to observations of **essential variables** with no **gaps**, no **redundancies**, resulting in saving costs and fully operational **continuity** of observations, and they are **collaborating** in providing integrated **knowledge** serving user needs.

ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

Goals

- Generate a self-sustained organization that represents and coordinates European EO networks with the goals:
  - to increase interoperability between existing networks,
  - reduce gaps,
  - ensure availability and accessibility of observations required to generate products and information on the state and trends in the environment.



ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

Mission

- be part of the GEO **European hub** and provide a representation to GEO;
- generate **inventories of existing** EO **networks** in Europe, with emphasis on non-space based networks;
- participate in the development of sets of **essential variables** for different themes and areas;
- work with GEO, and Copernicus to ensure **observations are available** and contribute to publishing knowledge;
- identify knowledge, capacity, infrastructure, and data **gaps**;
- develop roadmaps setting priorities and suggesting **remedies**;
- engage with the European EO networks to facilitate **multiple network integrated products**;
- provide a convening platform to bring networks from different domains to the same level of maturity (**capacity building)**.
- connect with **citizen science** projects and engage with EO **companies**.

ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

Composition

- Thematic partners in ConnectinGEO (that represent thematic observation networks)
- GEOSS S&T Stakeholder Network and GEOSS CoPs

ENVRIplus composition

- Copernicus services, Sentinel missions and other European programs
- European networks representatives for
  - space-based
  - airborne
  - in-situ observations (e.g. EPOS, EMSO, GROOM, etc)
- Representatives of the SMEs and industry sector.
- European and national funding agencies.

ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

Organization of ENEON

Committees

- Small number
- Permanent basis,
- Engage core activities of ENEON.
- Act as the point of contact to other organizations and networks (EC, GEOSS Copernicus)
- Continuous improvement of the network of networks.

Coordination Committee

Inventories, Products and Services Committee

Working Groups

- Limited time
- Looking for a common understanding.

- Internal activities
- Result focus
  - best practices
  - cross-domain problem assessment

Working Group 1
ENEON and European Directives

Working Group 2
SDG Monitoring

Working Group 3
Food, Water and Energy Nexus

GROUP ON EARTH OBSERVATIONS

Centers

- In case the *Inventory, Products and Services Committee* identifies the need and opportunity…
- ENEON will engage in facilitating designated centers for providing products or services that are cross-domain/cross-sector and can not be produced by a single theme.

Product Center

. . . . . .

Service Center

GROUP ON EARTH OBSERVATIONS

ENEON Management

Steering Assembly

- Representation of Network
- Annual Plenaries
- Decisions based on consensus
- Decides on policies, strategies, goals
- Establishes Committees and Working Groups
- Review and endorse Working Group reports
- Assess progress

Executive Board

- 5 members, one chair, two vice-chairs, 2 members at large
- Handles day-to-day business
- Prepares plenaries
- Reports to Steering Assembly
- Supports committees and working groups

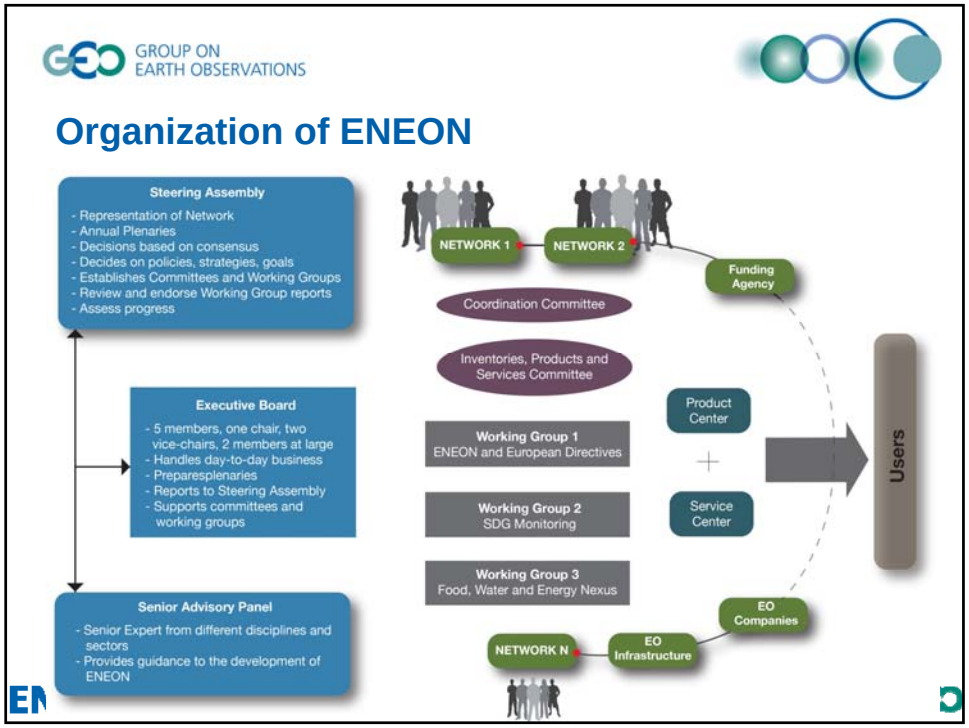
Senior Advisory Panel

- Senior Expert from different disciplines and sectors
- Provides guidance to the development of ENEON

ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

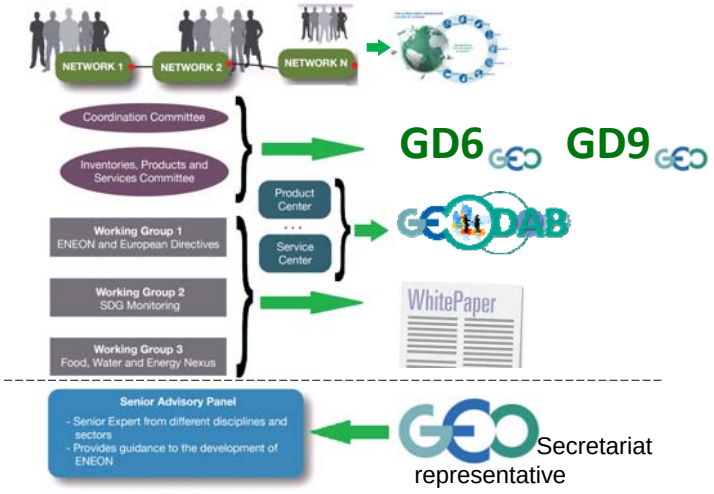
Organization of ENEON



Relation to the GEOSS work program and wrap-up

open discussion

ENEON in the GEO work program



GROUP ON EARTH OBSERVATIONS

Agenda

Time	Activity
16:30-16:40	Welcome, ConnectinGEO introduction and event overview (Joan Masó, CREAF)
16:40-16:50	ENEON Network and needs (Joan Masó, CREAF)
17:35-17:45	ENEON proposed structure and contribution to GEOSS (Hans-Peter Plag, Tiwah)
17:05-17:20	Energy-Water-Agriculture Nexus in ENEON (Hans-Peter Plag, Tiwah)
17:20-17:35	Links with private sector (Geoff Sawyer, EARSC)
17:45-18:00	Relation to the GEOSS work program and wrap-up (open discussion)

ENEON ConnectinGEO

GROUP ON EARTH OBSERVATIONS

www.eneon.net

Thank you!

joan.maso@uab.cat

ENEON