Integrating standard nodes in the GDDS

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AD4GD

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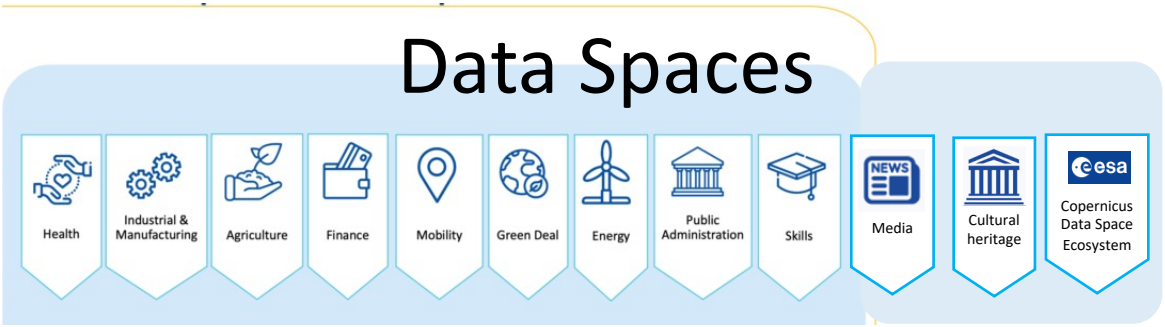
CREAF

eurac research
Institute of Atmospheric Pollution Research
National Research Council of Italy
European Commission



European Green Deal issues:

Climate change

Circular economy

Pollution

Biodiversity

Deforestation

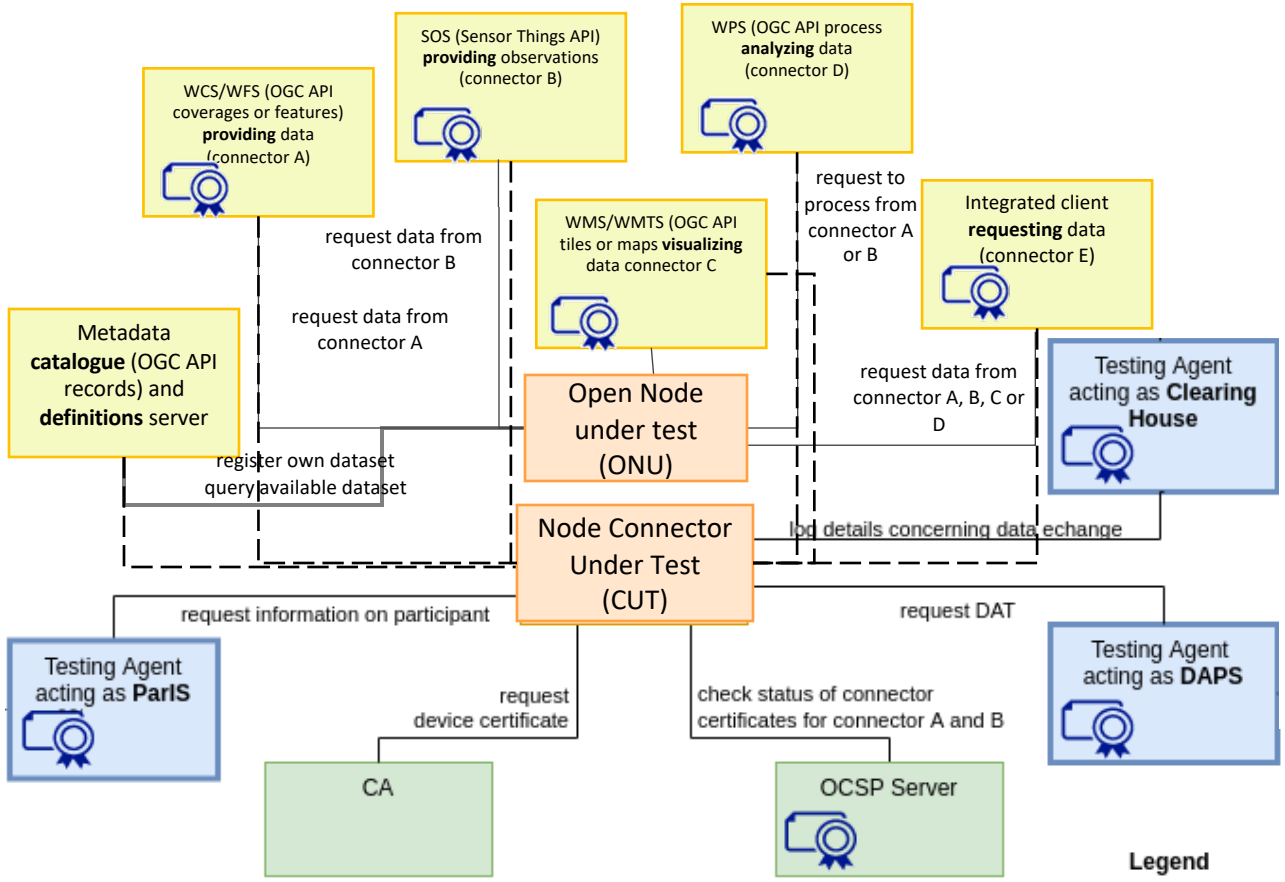
Difficulties we face:

- The **Green Deal** Data Space is the most heterogeneous and multidisciplinary of all.
- Is ***data space*** the *only* or the *right* solution for ensuring Open Data and at the same time Trust, Governance and Data Sovereignty?

Extending the industry data space definition

- In the industry definition of Data Space (IDSA), static assets are shared between two participants in a secured channel.
  - It requires that both (client and server) have connector software.
  - *Data sharing* becomes the opposite of open data!!
- Questions
  - How to combine open data (INSPIRE, etc) with secured data in a data space?
  - How to share queryble (dynamic) assets?
  - How to allow for data processing in the data space?
  - How to do *loosely coupled* and still provide enough *trust*?

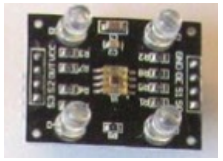
Adding: Geospatial Services, APIs Open Nodes

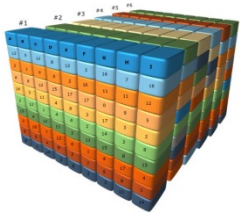


This approach is different from the one presented in: IDS as a Foundation for Open Data Ecosystems, Chapter 14, Kirstein F. and Bohlen V. Designing Data Spaces The Ecosystem Approach to Competitive Advantage, https://link.springer.com/book/10.1007/978-3-030-93975-5

Some solutions to break silos in the GDDS

- Share and combine
  - In situ data using **Sensor Things API** (and STAplus), in collaboration with **USAGE**
  - Gridded data in **datacubes**, in collaboration with **B3** and **FAIRiCUBE**.



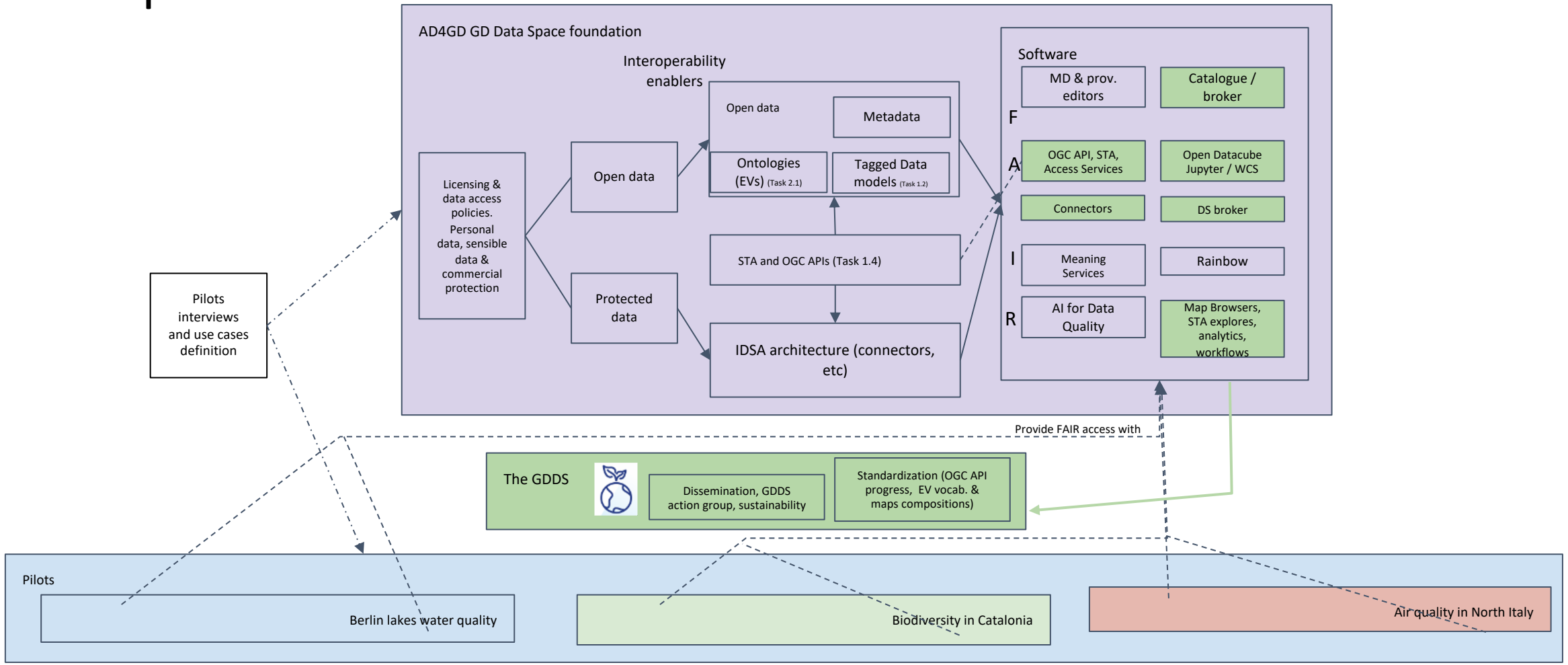


- Using semantics. Two approaches
  - The Green Deal Information Model (**GDIM**)
  - Focus on **variables**/observedProperties
    - Tag them with variable **name**, EV, **UoM**
    - Report **provenance** of the variables (methodology to obtain the data and applied post-processing)

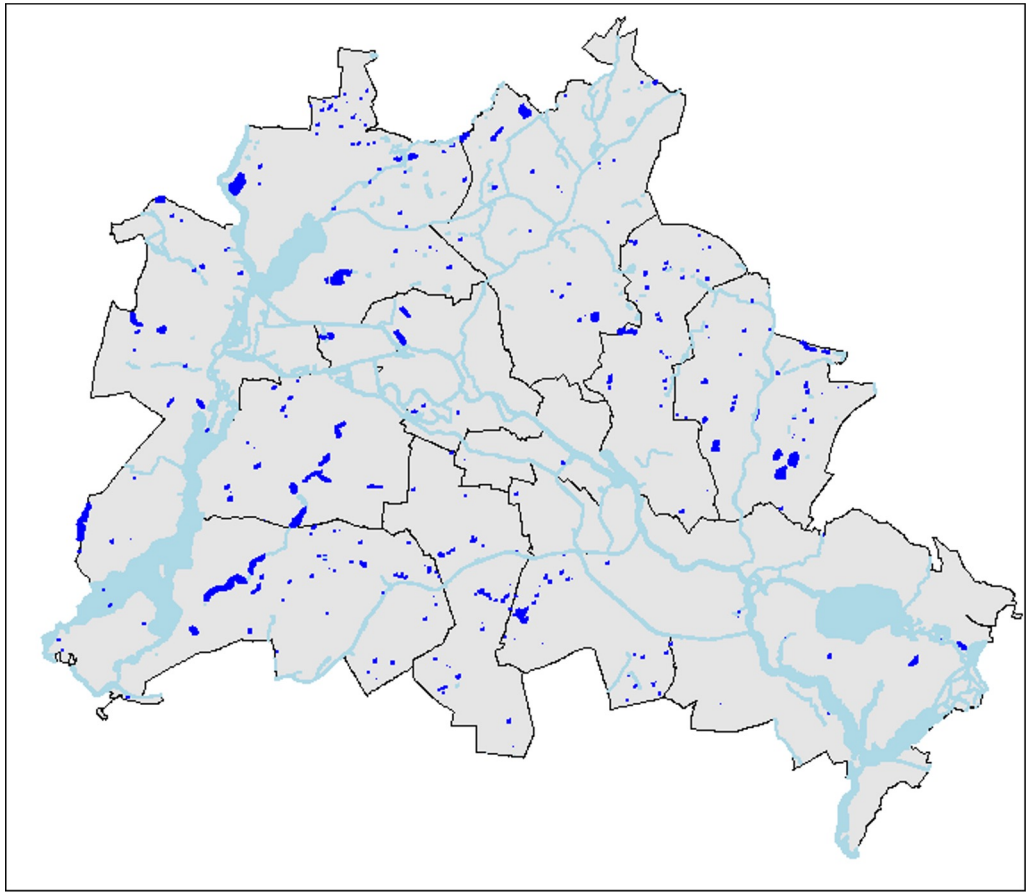
- Test OGC web services and OGC web APIs **with** IDSA connectors.

First project **hackathon** in Brimingham Octuber 30th

Proposed architecture



Zero Pollution Pilot (Berlin)



Stressors

Climate Change

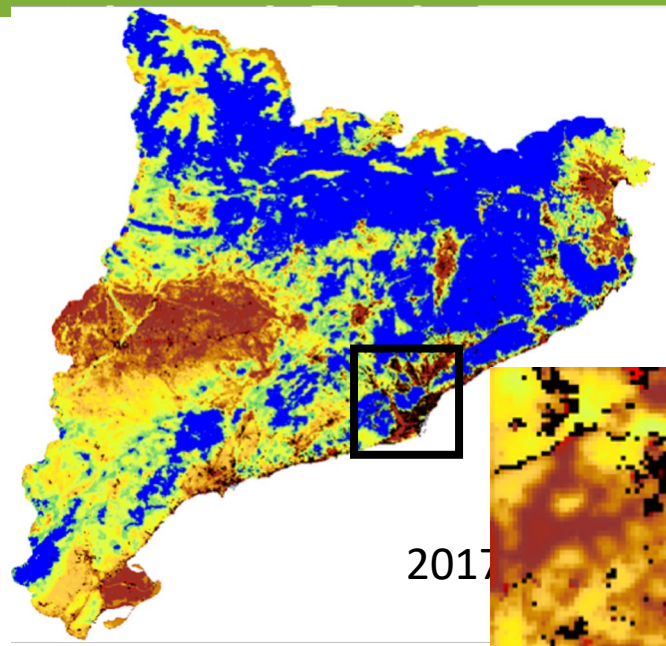
Densification

Water Quality

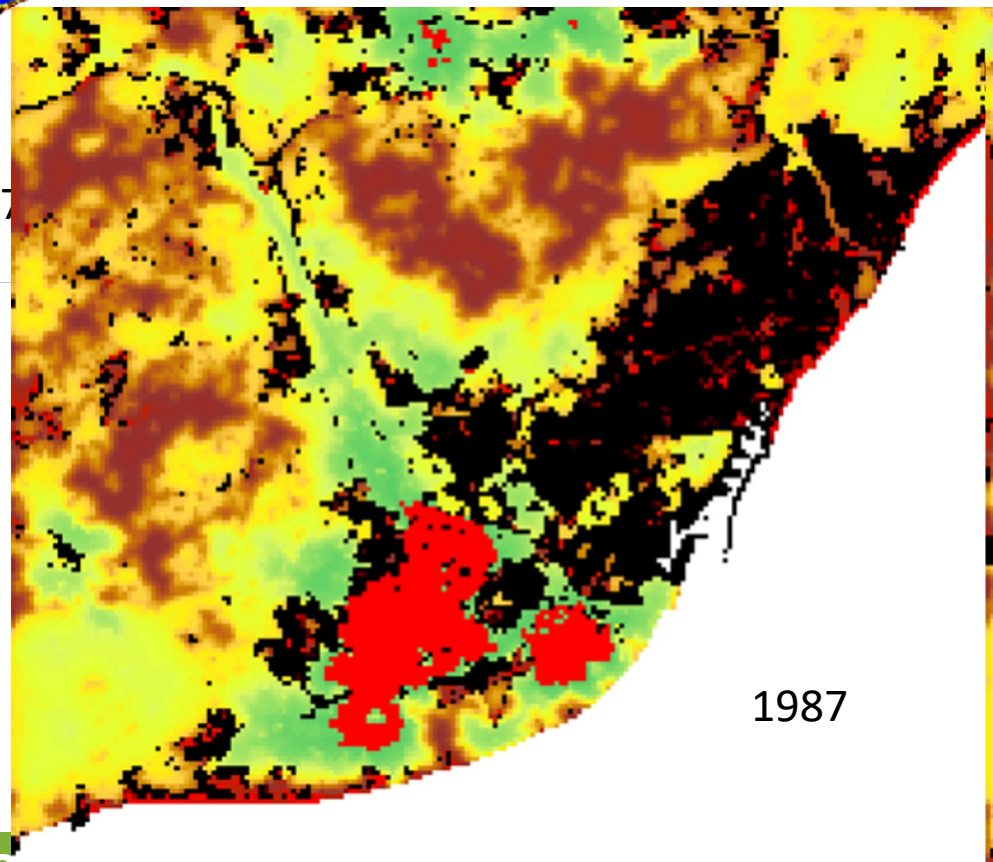
Water Availability

Connectivity in Catalonia

Changes in habitat connectivity in the Barcelona peri-urban area.
Computed from remote sensing data.
Expected impact: habitat usage by breeding and migrating species.
How to verify this, and how to ensure consistent connectivity maps over time?



2017



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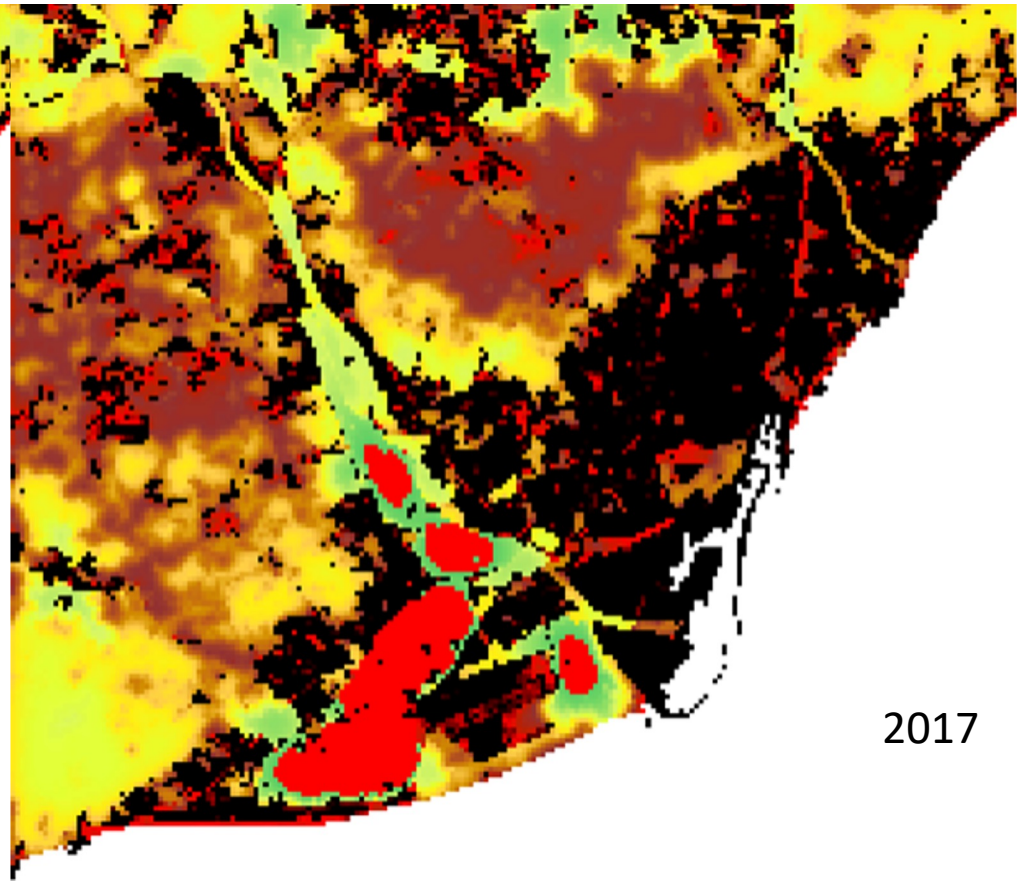

2017

Air Quality in north Italy

- Improving information products:
  - analyses and forecasts of surface concentrations of key air pollutants (PM2.5, NO_2);
  - emissions of pollutants (PM2.5, NO_2) and greenhouse gases (CO_2).
- By complementing currently used data from regulatory/reference/high-quality sensors, satellites & socio-economic activities (traffic, energy production…)
  - by adding high-resolution resolution citizen science data (100m-1km, 1min-1h)
- Issues of IoT/cheap “sensors” data: metrological quality (intrinsic to instruments+how they are operated often by non-specialists), representativeness error (depends where the sensor is), formats…

remote sensing

an Open Access Journal by MDPI

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CITESCORE 7.4

Earth Observation Data in Environmental Data Spaces

Guest Editors

Dr. Joan Masó, Dr. Alaitz Zabala Torres, Dr. Lucy Bastin, Dr. Kaori Otsu

Deadline

31 December 2023

Special Issue

mdpi.com/si/172682

Invitation to submit

EuroGEO Action Group on the Green Deal Data Space

Welcome to the EuroGEO Action Group on the Green Deal Data Space (GDDS) created in the EuroGEO workshop in Nov 8th, 2022 in Athens

Initial list of projects and activities participating

"Sister projects" financed by DG research to develop the GDDS

AD4GD project - AllData4GreenDeal (Joan Masó, CREAF) (CORDIS Sheet)
The aim is Integrate standard data sources (e.g. Insitu, RS, CitSci, IoT, AI) in

FAIRiCUBE project - F.A.I.R. Information Cubes (Stefan Jetschny, NILU) (CORDIS Sheet)
The core objective is to enable players classic Earth Observation rovide, access, process, and d data and algorithms in a USTable manner. We are

USAGE project - Urban Data Space for Green Deal (Oscar Corcho, Universidad Politécnica de Madrid) (CORDIS Sheet)
It will provide solutions for making city-level data (Earth Observation, Internet of Things, authoritative and crowdsourced

B3 Biodiversity Building Blocks for Policy Making (Quinten Grome, Meise Botanic Garden) (CORDIS Sheet)
Global biodiversity is changing under multiple pressures including climate

GREAT - The Green Deal Data Space Foundation and its Community of Practice (Preparatory Action) (Richard Stevens, IDC) (CORDIS Sheet)

OEMC project - Open Earth Monitor (Tom Hengl, OpenGeoHub) (CORDIS Sheet)

http://actiongroup.greendealdata.space/

Thanks!

AD4GD

VISIT OUR WEBSITE

www.ad4gd.eu

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BENEFICIARY

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Mandat International
ASSOCIATED PARTNER

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