

The big picture: Digital Transformation

Eurogeographics General Assembly

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19 May 2025

The big picture

- **Digital Transformation – adapt or decline?**
- **How public organisations can leverage digital**
- **Earth Observation – a leap forward**





Which direction?

Where do we want to be?

Digital Transformation



The Big Picture - Digital Transformation

Cutting through the buzzwords...

Integration of digital technologies into **all areas** of an organisation, fundamentally changing how we operate, adapt and deliver **value**

Key elements

- Customer-centric innovation
- Leverage potential - AI, IoT, cloud computing, big data and automation
- Rethinking processes and culture
- Constant iterations and learning

Transformation vital for the European Environment Agency

Provide value to EU countries, citizens and organisations by ensuring:

- Robust data and knowledge
- Support to EU Environment policies and decision-making



Why Digital Transformation now?

Why now?



Digital transformation is no longer optional



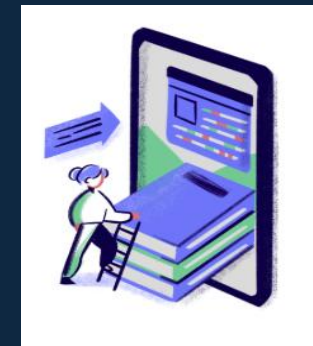
Competitiveness



Simplification



Cybersecurity and resilience



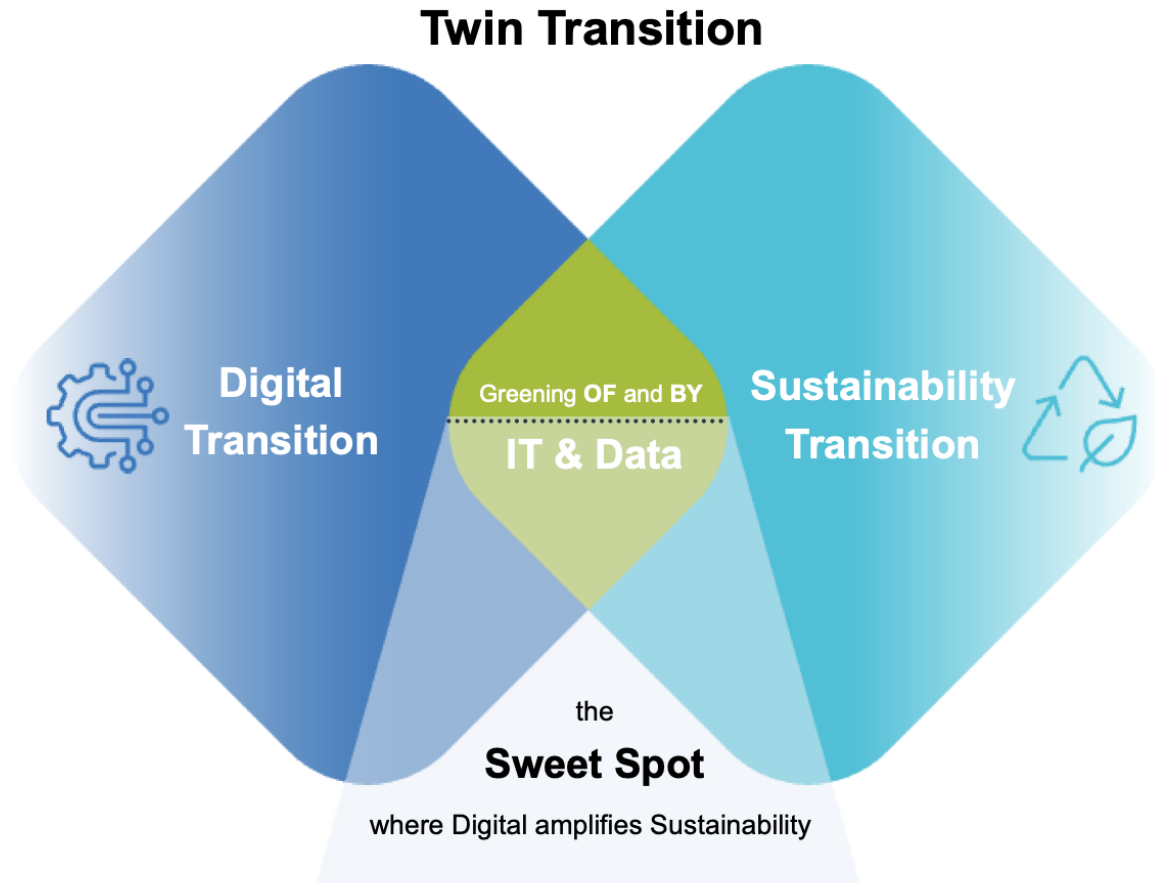
Countries, EC, citizens, EEA staff rely on digitalisation to achieve goals

Digital Transformation framework

It is more than technology and tools...



Not only Digital, also Sustainability - Twin transition



Green transition enhances the benefits of digital transformation



Digital technologies can support the green transition

[What is the 'twin transition' - and how can it speed sustainable growth | World Economic Forum](#)



Digital Transformation at the EEA



Transforming the services – Knowledge as a Service

Opportunity

Digitalisation an essential enabler

- Respond to challenges and priorities head-on
- Policy priorities
- 'Hand in hand' with simplification

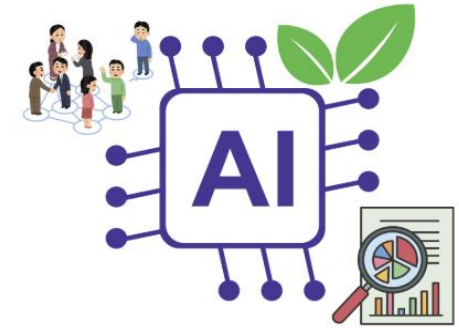
Data as a strategic asset for all

- Integration, interoperability and reuse

Unprecedented possibilities

- Artificial Intelligence
- Earth Observation
- Digital Twins and advanced modelling
- Outreach

EU and country infrastructures = joint capacities



European Environment Agency



EEA is taking a holistic approach to Digitalisation

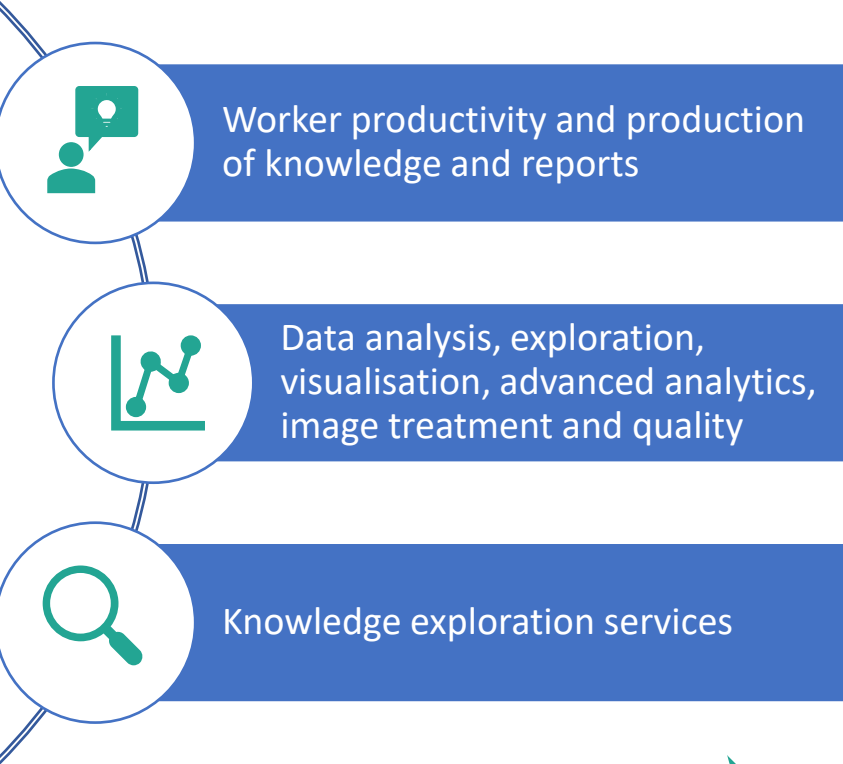
EEA Digital Capability Strategy



“We harness the power of digital services and innovation to drive our data and knowledge-centric mission to inform decision-makers and the public about the state of Europe’s environment, climate change, and sustainability.”



AI is a core part of the Digital Capability Strategy



EEA Green Guru AI

BETA - for demonstration

AI Assistants > EEA Green Guru AI

Ask EEA Green Guru any question about the environment and get reliable, data-driven answers for a more sustainable future.

New chat

Which air pollutants are mostly harmful to human health and cause premature death?

Searched for: Which air pollutants are mostly harmful to human health and cause premature death?

The air pollutants that are most harmful to human health and cause premature death in Europe are fine particulate matter (PM2.5), nitrogen dioxide (NO2), and ozone (O3). These pollutants are responsible for a significant number of premature deaths and health issues.

- Fine Particulate Matter (PM2.5):** In 2020, PM2.5 pollution above responsible for at least 238,000 premature deaths in the EU attributable deaths in EU Member States.
- Nitrogen Dioxide (NO2):** In 2020, NO2 pollution led to 49,000 premature deaths in EU Member States.
- Ozone (O3):** In 2020, exposure to ozone led to 24,000 premature deaths in EU Member States.

These pollutants not only cause premature deaths but also contribute cardiovascular diseases.

Sources:

- 1. Premature deaths d... Nitrogen dioxide pollution led to 49,000, and exposure to ozone to 24,000 early deaths in the EU. A...
- 2. Harm to human heal... The term environmental burden of disease relates to the methodology to estimate the share of the...

Related questions:

- What are the health impacts of exposure to fine particulate matter (PM2.5)?
- How many premature deaths were attributed to nitrogen dioxide (NO2) exposure in 2020?
- What is the World Health Organization's guideline level for ozone (O3) exposure?
- How does air pollution contribute to morbidity in Europe?
- What are the key air pollutants monitored by the European Environment Agency?

EEA Green Guru AI

Climate Adaptis AI

Copernicus Observia AI

WISE Freshwater AI



Pitfalls to avoid

Lack of leadership focus

- Establish a transformation department with clear accountability to track unified progress

Legacy culture and mindset

- Adopt new ways of working, leading with example

Unclear governance and multiple fragmented initiatives

- Senior leaders should stay close to the transformation, unified governance body

Legacy processes

- Define critical processes with agile ways of working



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Earth Observation – a leap forward



Earth Observation – The power of data

Environmental Applications

- **Climate change**
- **Disasters**
- **Agriculture**
- **Forestry**
- **Marine**

AI & Big Data

- Earth observation data massive: petabytes per year
- Classify land cover, detect anomalies, make forecasts
- Example: Using AI to predict crop yields or detect methane plumes automatically
- **Combine satellite data with local sensors for deeper insights (in-situ)**
- Destination Earth



EEA role in Copernicus

Producer



CLMS European component

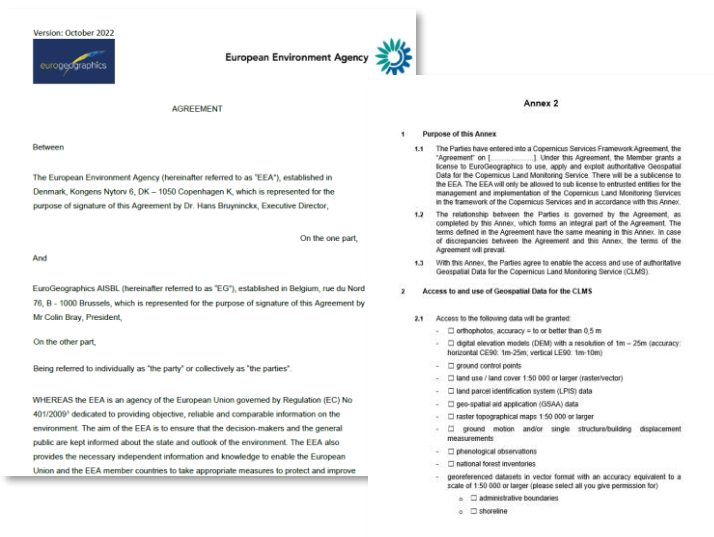
Cross-service Coordination of Access to In Situ Data



User



Copernicus Service Agreement with EuroGeographics



EEA-EG Partnership Agreement signed 15/12/2022



Some examples of use cases

EuroGeographics showcases value of official national geospatial data in Copernicus Services

Land Monitoring and Emergency Management are among the Copernicus Services benefitting from the strengthened partnership between the EEA and EuroGeographics.

The framework agreement between the EEA and EuroGeographics represents Europe's National Mapping, Cadastral and Land Registry Authorities, streamlines the licensing process to improve access to authoritative information. In doing so, it is increasing the number of datasets available via the Copernicus Reference Data Access (CORDA) database.

Four case studies from Albania, Spain, Germany, and Slovenia are published by EuroGeographics showing information for assessing flood and extreme weather, and in contributing to monitoring Land Cover and Land Use.

by B. Baker, Head of Partnerships

Revolutionizing Environmental Management: EuroGeographics and EEA Team Up to Elevate Copernicus Services

The partnership between the EEA and EuroGeographics promises to revolutionize the Copernicus Services by granting improved access to official geospatial data, enhancing environmental monitoring and emergency management across Europe.

Muhammad Jawad
25 FEB 2024 07:54:53



dm insights on location

Topics Articles Webinars News Data

EuroGeographics showcases value of official national geospatial data in Copernicus Services

Published February 26, 2024 [Share](#)

Land Monitoring and Emergency Management are among the Copernicus Services benefitting from the strengthened partnership between providers of official geospatial data and the European Environment Agency (EEA).

The framework agreement between the EEA and EuroGeographics, which represents Europe's National Mapping, Cadastral and Land Registry Authorities, streamlines the licensing process to improve access to authoritative information. In doing so, it is increasing the number of datasets available via the Copernicus Reference Data Access (CORDA) database.



Evaluating impact and erosion risk after devastating forest fire

Introduction
Transpiration, Land Use and Land Cover data provided to the Copernicus Emergency Management Service by the National Geographic Institute of Spain played a key role in assessing the impact of the 2022 Gata wildfire. It was also used to assess the risk of soil erosion in more than 100 hectares of forest in the Spanish autonomous city which is located in Murcia's south coast.

Challenge
Imagery services released that for the first time after the wildfire the region was able to assess erosion hazard. However, with data of the last several years (2018-2021) available, the risk of erosion was not only the damage, but also the impact of the wildfire on the landscape and the risk of erosion.

Benefits
Identified the extent of the erosion hazard in the affected area.
Assessed the erosion risk of the affected area.
Provided insight to understand the risk of erosion in the context of the wildfire.
Clarified the impact of the wildfire on the landscape and the risk of erosion.
Contributed to the assessment of the erosion risk in the affected area.



Assessing flood risk and economic impact in the Drin river basin

Introduction
Detailed observation data provided to the Copernicus Emergency Management Service by the State Authority for Geographic Information (ASGI), Albania was essential for assessing flood risk and its economic impact in the Drin river basin.

Challenge
The Drin river basin is a significant part of Albania. It is a highly populated area, particularly in the central and southern parts. The basin is characterized by steep slopes and high rainfall. The basin is also a major source of water for the country.

Benefits
Improved flood risk mapping, identification of critical areas and potential impact on the population and infrastructure.
Supports international cooperation for the development and implementation of flood risk management plans.
Contributes to the development of the Drin Basin Management Plan in accordance with the EU Water Framework Directive and the 2012/18/EC Flood Directive.
Helps to assess the impact of climate change on flood risk and economic impact.






USE CASE

Assessing forestry damage from record-breaking windstorm in Latvia

PROGRAMME OF THE EUROPEAN UNION Copernicus In Situ European Environment Agency



USE CASE

Assessing landslide risk in wake of heavy rainfall in Slovenia

PROGRAMME OF THE EUROPEAN UNION Copernicus In Situ European Environment Agency



USE CASE

Evaluating and aiding wildfire recovery in Portugal's Serra da Estrela National Park

PROGRAMME OF THE EUROPEAN UNION Copernicus In Situ European Environment Agency



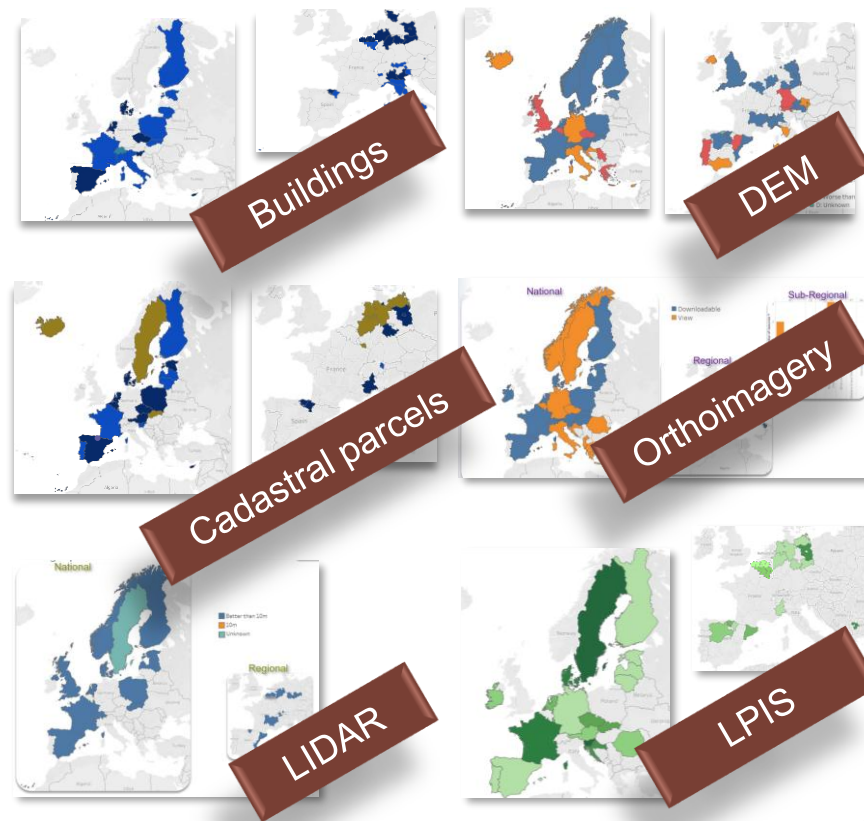
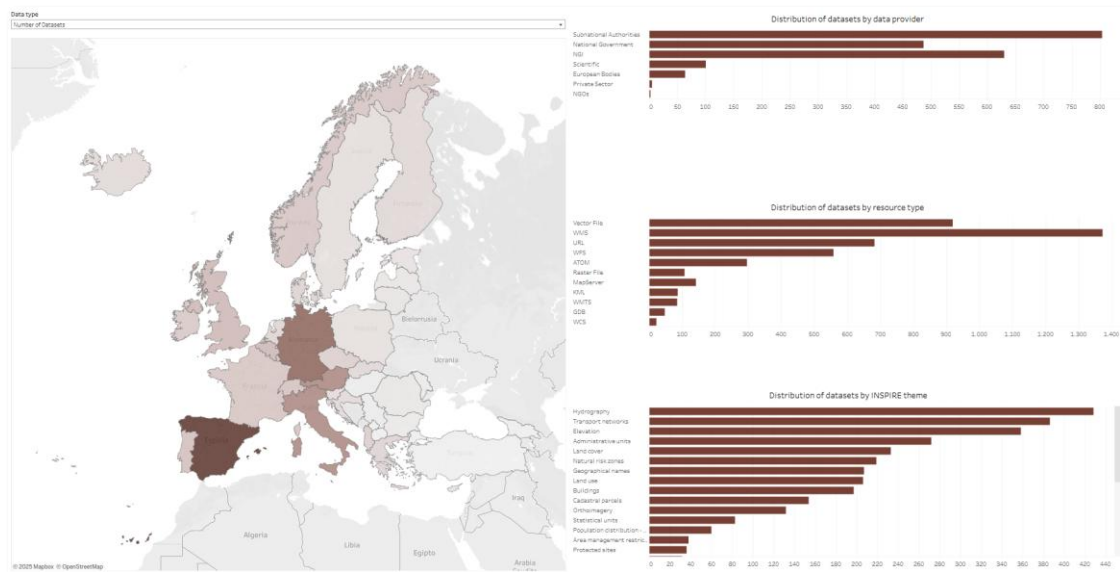
USE CASE

Delivering authoritative height data for urban areas in Poland

PROGRAMME OF THE EUROPEAN UNION Copernicus In Situ European Environment Agency



Access to geospatial data: CORDA



42 countries
303 data providers
2158 datasets



<https://corda.eea.europa.eu>



>130 new or updated datasets
from 19 Members are now
available for Copernicus
Agency



Geospatial data is crucial for Digital and Green Transformation

Opportunity

Unprecedented capabilities and possibilities

Geospatial data enables Digital Transformation

- Open data and new methods using AI

Integrated earth intelligence

- Combining geographic data, analytics and visualisation
- Deeper insights – better informed decision making

User center focus

- Where we want to be?
- What do we need to get there?



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Time to act



The choice:



Adapt now → Future proof



Hesitate → Take the risk



Thank you