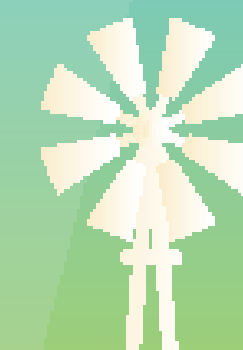
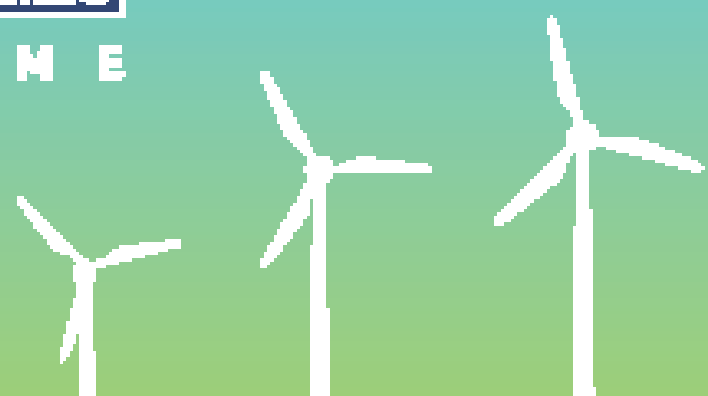
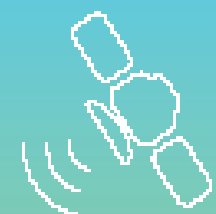


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EU SPACE PROGRAMME (COPERNICUS, GALILEO) IN SUPPORT OF THE SDGS

Catharina Bamps, Policy officer - European Commission – DG GROW – Copernicus
Sixth Plenary Meeting of UN-GGIM: Europe, 5 - 6 June 2019, Brussels
Session 4 – SDGs and Earth Observation



COPERNICUS is EU revolutionary Earth Observation and Monitoring programme, looking at our planet and its environment for the benefit of all European citizens

6

COPERNICUS SERVICES

PROVIDING TOOLS FOR ACTION OVER 1092 INFORMATION PRODUCTS

7

COPERNICUS SENTINELS IN ORBIT



ACTIONNABLE INFORMATION

MONITORING THE PULSE OF OUR PLANET

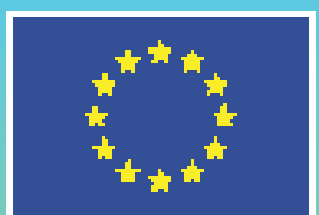


300,000

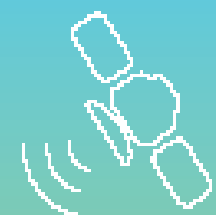
USERS OF COPERNICUS DATA AND SERVICES PRODUCTS

16 TB

FULL, FREE AND OPEN EARTH OBSERVATION DATA EVERY DAY

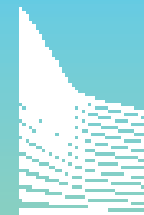
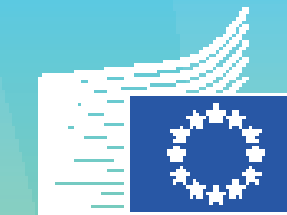


EU SPACE PROGRAMME

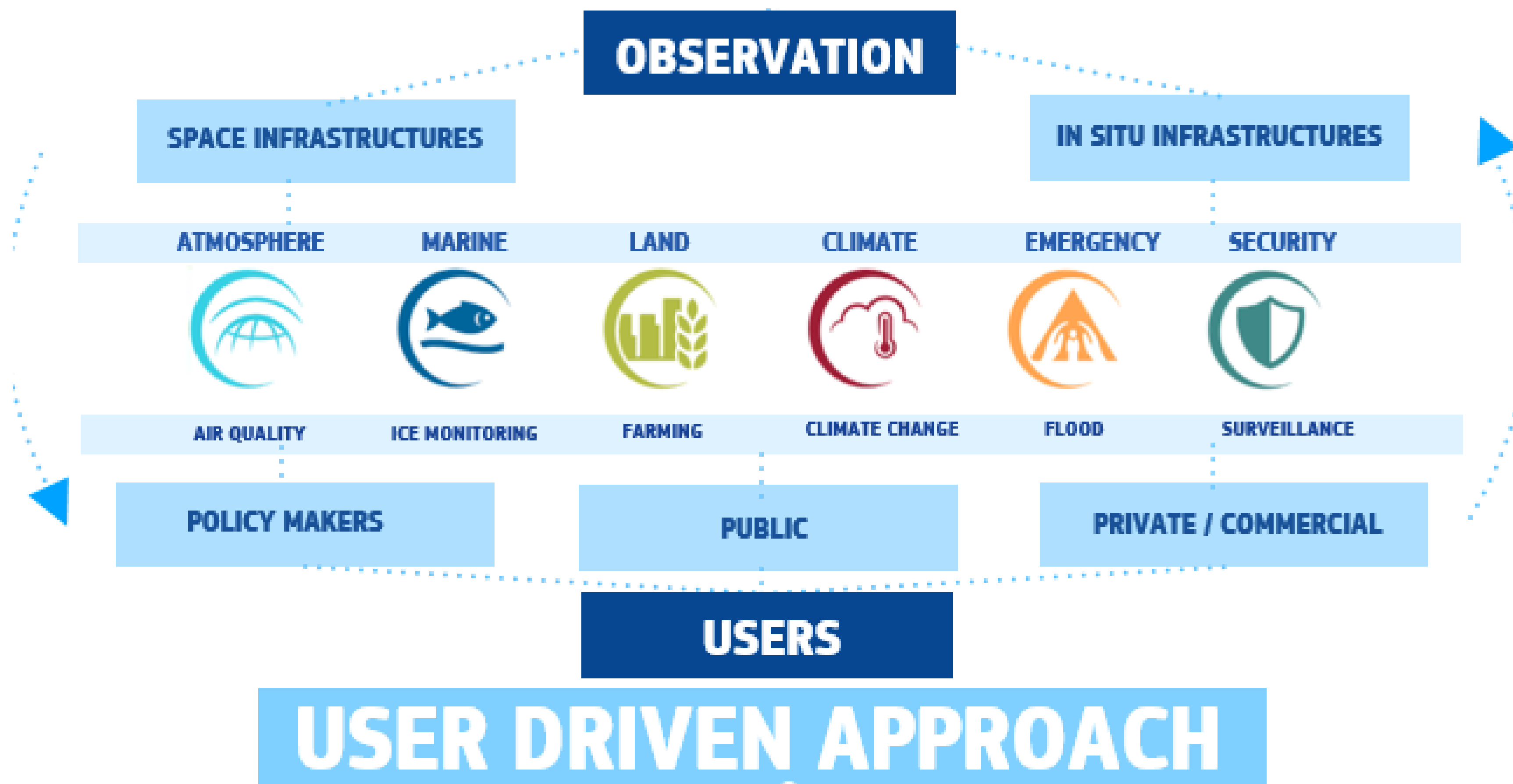
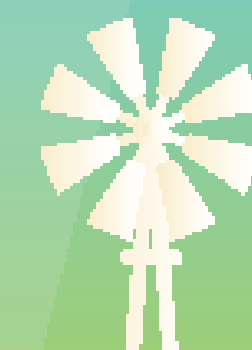
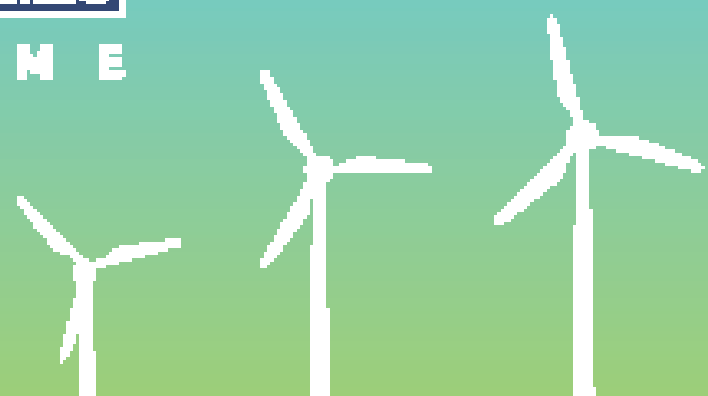


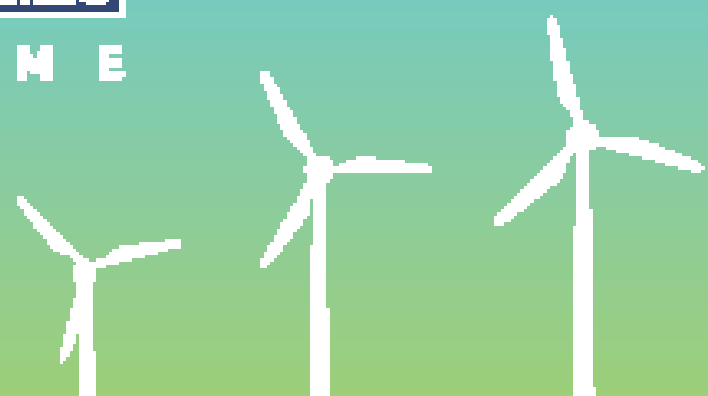
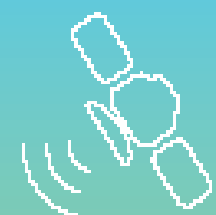
Copernicus

#EU Space



European Commission





GALILEO is the European Satellite Navigation System offering positioning and timing information

- **Free service for positioning, timing and navigation**

Example: 700 million Galileo enabled phones around the world

- **Encrypted service designed for greater robustness and higher availability**

- **Assists locating and rescuing people in distress**

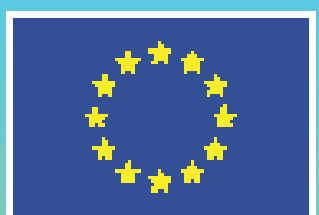


Open Service (OS)
OS-Navigation Message Authentication (OS-NMA)

Public Regulated Service (PRS)



Search and Rescue Service (SAR)

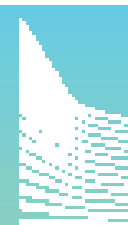


EU SPACE PROGRAMME



EU Space Programme

#EUSpace



European Commission

SPACE STRATEGY FOR EUROPE (2016)

- **Will ensure continuity of the existing space activities (stability and long term commitment) –**
(enhanced) continuity of current data and Copernicus services continuity of full, open and free data and information policy
- **Will create synergies between the space activities;**
- **Give boost to innovation and entrepreneurship.**

KEY ELEMENTS OF THE EU SPACE PROGRAMME REGULATION

TOP PRIORITY: STABILITY OF THE PROGRAMME AND LONG TERM COMMITMENT

(Enhanced) continuity of current data and services;

Public Programme = public goods to benefit downstream sector;

Continuity of full, open and free data and information policy for the environmental domain.

ADDITIONAL COPERNICUS SERVICES WILL BE CONSIDERED TO MEET EMERGING NEEDS

Climate change and sustainable development;

Monitoring CO₂ and other greenhouse gas emissions;

Changes in the Arctic;

Land use and forestry;

Security: improving the EU's capacity (border controls and maritime surveillance).

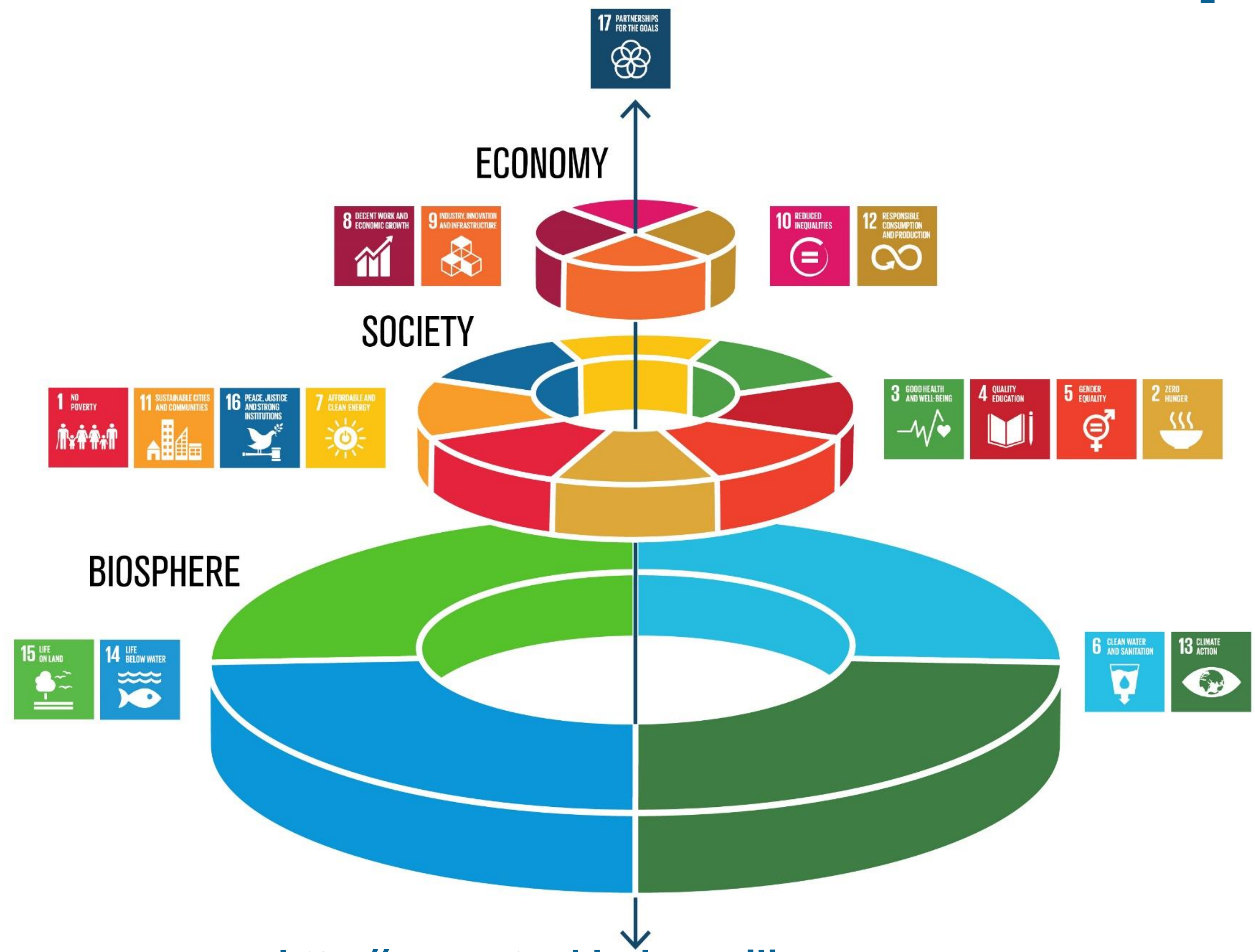


Copernicus

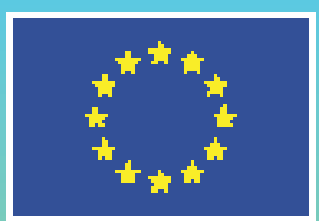
The wedding cake presentation for the SDGs

Sustainable Development Goals:

economies and societies embedded parts of the **biosphere**



<http://www.stockholmresilience.org>

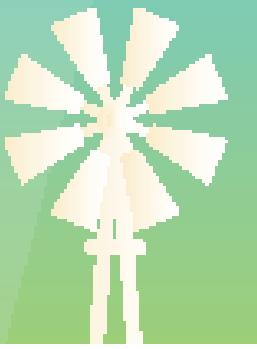
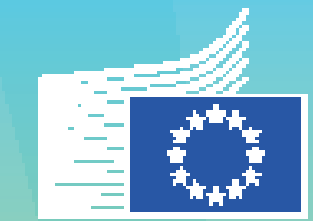


E U S P A C E P R O G R A M M E



EU SPACE PROGRAMME

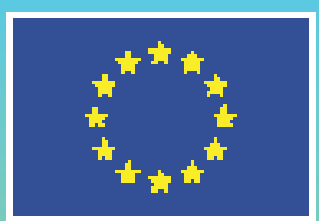
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ALL SDGS: DIRECTLY/INDIRECTLY CONNECTED TO SUSTAINABLE AND HEALTHY FOOD

ECONOMIES AND SOCIETIES EMBEDDED PARTS OF THE BIOSPHERE

TRANSITION TOWARDS A WORLD LOGIC WHERE ECONOMY SERVES SOCIETY SO THAT IT
EVOLVES WITHIN THE SAFE OPERATING SPACE OF THE PLANET.



EU SPACE PROGRAMME



EU SPACE PROGRAMME



#EUSpace

COPERNICUS (SENTINEL DATA, COPERNICUS SERVICES' INFORMATION)

GALILEO DATA AND INFORMATION

AVAILABLE ON A FULL, FREE AND OPEN BASIS:

=

Contributes to

REDUCTION OF THE COSTS OF MONITORING INDICATORS

+

Supports development of

WIDE RANGE OF OPERATIONAL PRODUCTS AND SERVICES SUPPORTING THE SDGS

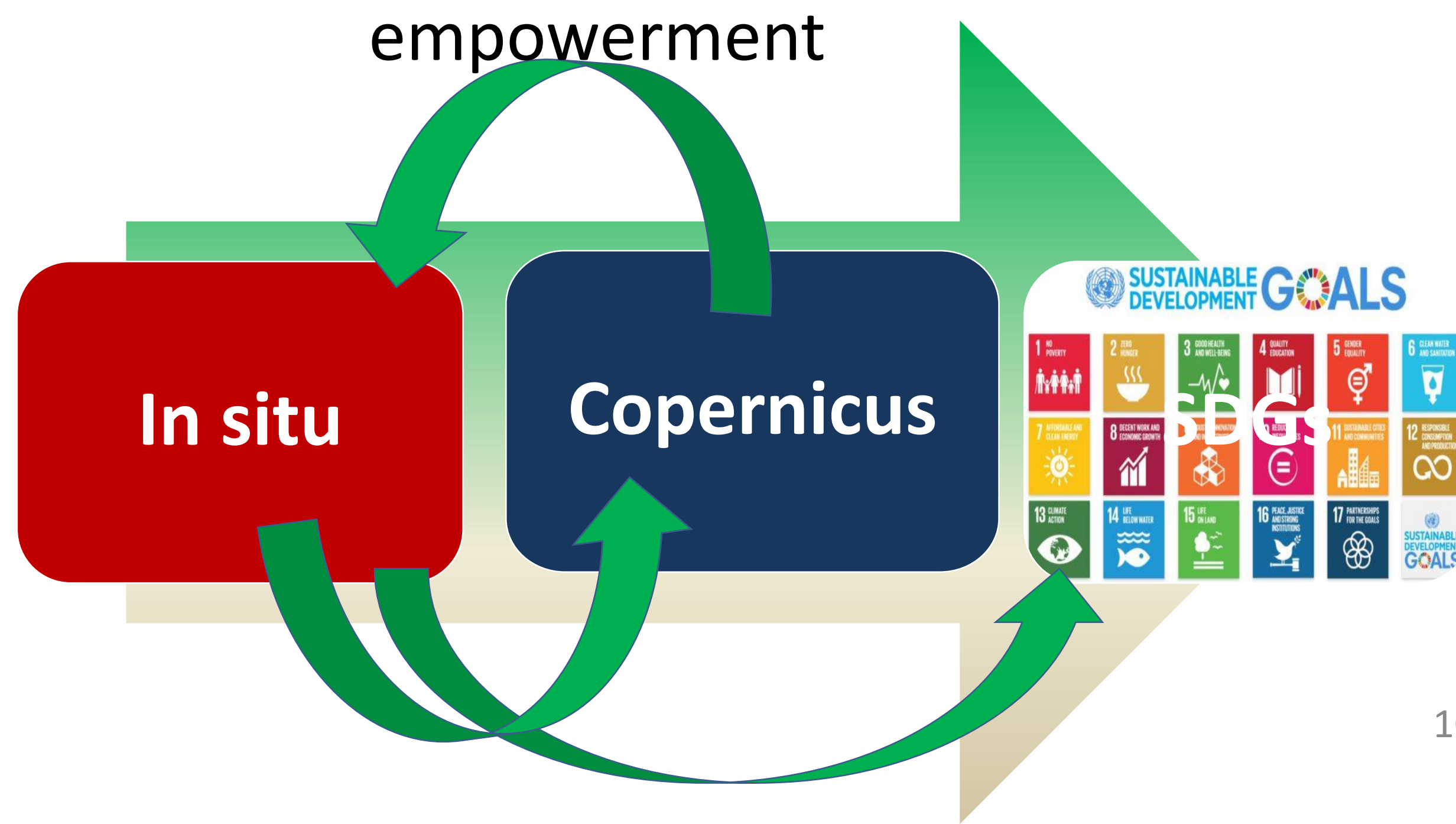


Copernicus

Copernicus & SDGs

- UN sustainable development knowledge platform

"The-Future-We-Want" in paragraph 274 recognizes "the importance of space-technology-based data, in situ monitoring, and reliable geospatial information for sustainable development policy-making, programming and project operations."



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SDG 7 AFFORDABLE AND CLEAN ENERGY

- **Copernicus Marine Environment Monitoring Service** : global ocean waves analysis + daily updated forecast used by a company that designs **WAVE ENERGY CONVERTERS** (into electrical power)
- **Copernicus Climate Change Service information** : used by a company that helps customers to better plan renewable energy projects such as wind farms, masts and turbines
- A H2020 project which uses **satellite navigation reflected signals** to provide soil moisture mapping services to manage water resources for farming and water-flooded areas

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SDG 7 AFFORDABLE AND CLEAN ENERGY

- **Copernicus Atmosphere Monitoring Service information** : in support of the calculation of the energy potential of a photovoltaic rooftop project
- A H2020 project : **drones equipped with Galileo receiver** which fly over photovoltaic fields and takes visible and thermal images of the field to detect broken plants;

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SDG 11 : SUSTAINABLE CITIES AND COMMUNITIES

- **Copernicus Land Monitoring Service** : land cover and land use information (urban atlas) to identify the access to green areas in Europe 's cities; imperviousness change rate (buildings and other areas covered with concrete, tarmac or similar materials):
- **Galileo4Mobility**: introduction of Galileo technology/geolocation for shared mobility services

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Copernicus : Earth Observation data and EO-based **information products** about our planet for citizens, public authorities and policy makers, scientists, entrepreneurs and businesses on a **full, free and open basis**

<http://copernicus.eu/data-access> :

1. **Access Hubs:** <https://www.copernicus.eu/en/access-data/conventional-data-access-hubs>

Sentinel Data: <https://scihub.copernicus.eu/>

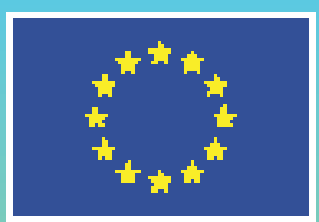
Services data and information : land, atmosphere, emergency, marine, climate and security

+ <https://services-portfolios.copernicus.eu>

2. **Data and Information Access Services (DIAS):** 5 cloud-based platforms to facilitate integration of Copernicus data and info without the need to download or invest in heavy processing and storage facilities;

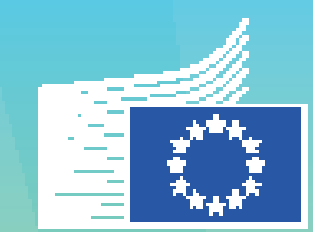
<https://www.copernicus.eu/en/access-data/dias>

Comparison functionalities 5 DIAS: <https://www.youtube.com/watch?v=cvP2xqiMOh4>



E U S P A C E P R O G R A M M E

EU SPACE PROGRAMME

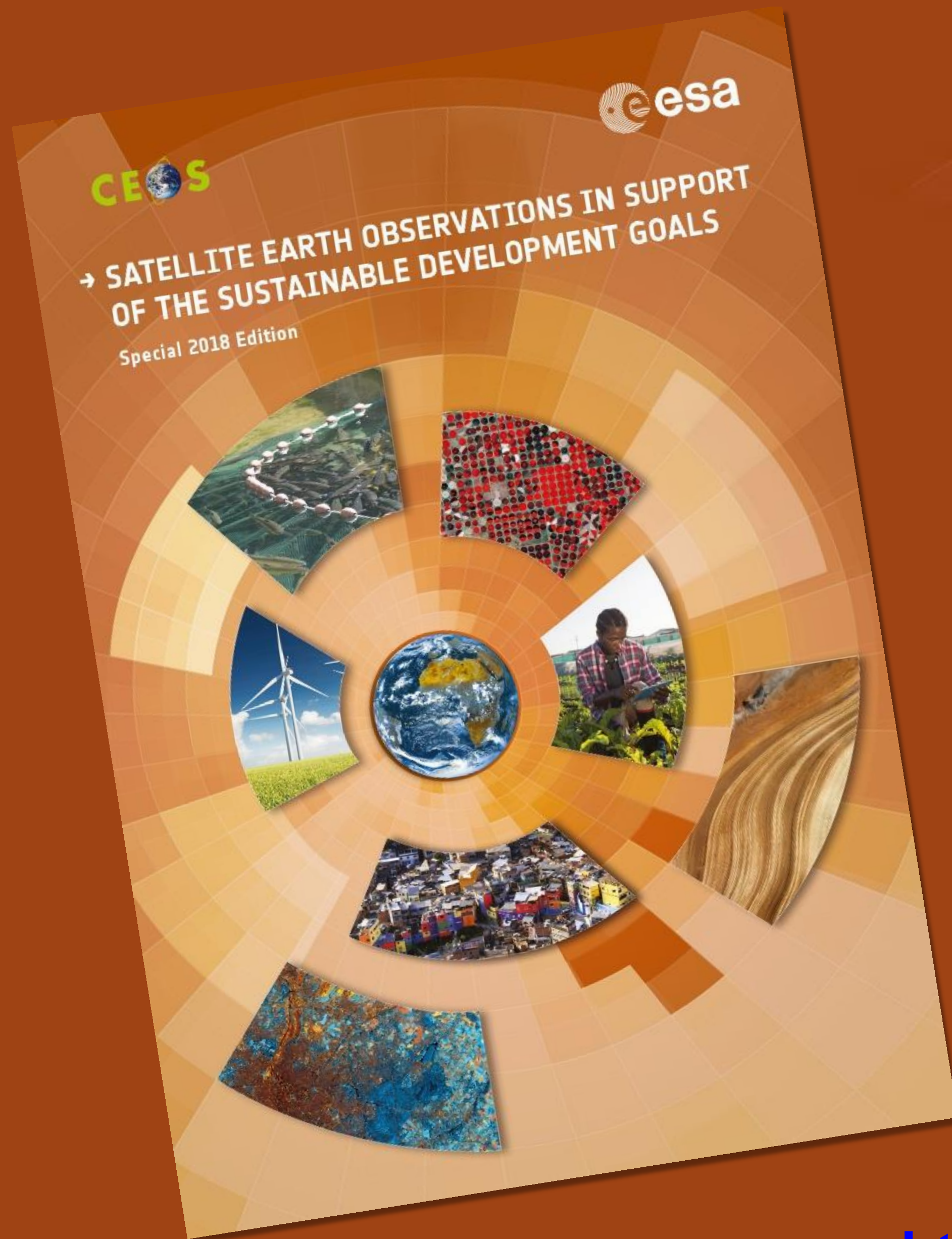


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GALILEO-ENABLED DEVICES :

[HTTPS://WWW.USEGALILEO.EU//](https://www.usegalileo.eu/)





*“The integration of statistics, geospatial information, **Earth observations**, and other sources of **Big Data**, **combined with new emerging technologies**, analytics and processes, are becoming **a fundamental requirement for countries** to measure and monitor local to global sustainable development policies and programs”*

UN-GGIM co-chairs

<http://eohandbook.com/sdg/>



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Thank you

<https://copernicus4sdgs.eventsite.be/>

50+ Copernicus webinars on Youtube:
<https://www.copernicus.eu/en/media/videos>