



Destination Earth – new digital twin of the Earth will help tackle climate change and protect nature

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Today, the Commission has launched together with partnering organisations the [Destination Earth initiative](#) to help tackling climate change. Supported with an initial €150 million from the [Digital Europe Programme](#) until mid-2024, the goal is to develop a highly accurate digital model of the Earth. It will help monitor, model and predict natural and human activity, and develop and test scenarios for more sustainable development. High-quality information, digital services, models, scenarios, forecasts and visualisations will be provided first to public sector users and then gradually to scientific communities, the private sector, and the general public.

Margrethe **Vestager**, Executive Vice-President for a Europe fit for the Digital Age, said: "*Destination Earth will improve our understanding of climate change and enable solutions at global, regional and local level. This initiative is a clear example that we cannot fight climate change without digital technologies. For example, the digital modelling of the Earth will help to predict major environmental degradation with unprecedented reliability.*"

Thierry **Breton**, Commissioner for the Internal Market, added: "*With Destination Earth, we are building on Europe's strong cards. From Artificial Intelligence, cloud computing, high-speed connectivity networks to our successful Copernicus Earth observation programme and our world-leading EuroHPC supercomputers, we are combining our assets in order to make our future more safe and secure.*"

A highly accurate digital model of the Earth

The Commission, the European Space Agency ([ESA](#)), the European Centre for Medium-Range Weather Forecasts ([ECMWF](#)), and the European Organisation for the Exploitation of Meteorological Satellites ([EUMETSAT](#)) will gradually develop the Destination Earth system by setting up a core platform that will host digital replicas of Earth systems and natural phenomena, called Digital Twins.

By the end of 2024, **the DestinE system** will be composed of:

- **Core Service Platform** operated by ESA. It will provide decision-making tools, applications and services, based on an open, flexible, and secure cloud-based computing system.
- **Data Lake** operated by EUMETSAT. It will provide storage space and seamless access to the datasets. The data lake will be built upon existing scientific datasets, such as the Copernicus Data and Information Access Services ([DIAS](#)), complemented by other non-spatial sources, like sensor-based environmental data and socio-economic data.
- **Digital Twins**, developed by ECMWF. They combine data from real-time observations and simulations:
 - **The Digital Twin on weather-induced and geophysical hazards** will focus on floods, droughts, heat waves, and geophysical phenomena like earthquakes, volcanic eruptions, and tsunamis. In case of floods, for example, this Digital Twin will help local and regional authorities to test actions with greater accuracy that will help save lives and reduce property damage.
 - **The Digital Twin on climate change adaptation** will provide observation and simulation capabilities to support activities and mitigation scenarios for climate change. To help achieve carbon neutrality, information will be made available from different domains such as sustainable agriculture, energy security, and protection of biodiversity.

Next Steps

The three entrusted entities will publish tenders for acquiring various components to be integrated into the Destination Earth system in the spring of 2022.

In addition to the Digital Europe Programme Committee, Member States and Associated Countries will be involved through the [Destination Earth Coordination Group](#). Furthermore, independent

scientific and technological expertise will be provided through [the Strategic Advisory Board](#). Both expert groups will start their activities in the second quarter of 2022.

Additionally, the scientific community and policy users will be able to engage with the initiative through a Scientific Wiki and public workshops to ensure that the system responds to real user needs and reflects the wider stakeholder needs and knowledge.

For More Information

[Destination Earth policy page](#)

[Destination Earth brochure](#)

[Destination Earth factsheet](#)

[Destination Earth Video](#)

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