destination-earth.eu

DestinE

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Destination Earth

Funded by the European Union

Implemented by ECMWF esa EUMETSAT

DESTINATION EARTH

A DIGITAL REPLICA OF OUR PLANET

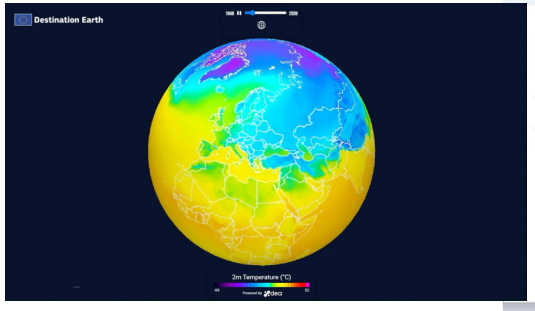
Destination Earth (**DestinE**) aims to develop a highly accurate digital model of Earth to monitor the effects of natural and human activity on our planet, anticipate extreme events and adapt policies to climate-related challenges.

European Union

ECMWF esa EUMETSAT

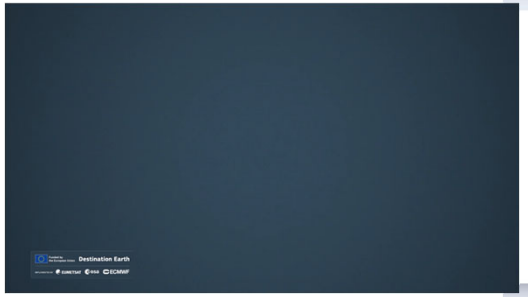
DestinE System

https://destination-earth.eu/



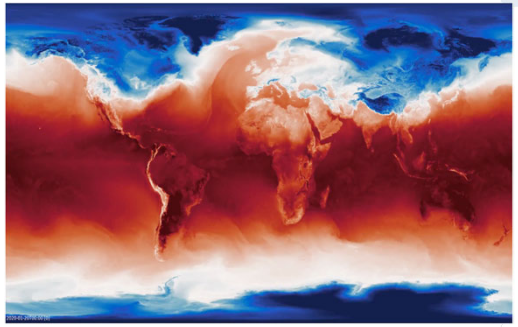
DestinE Platform

The platform will provide evidence-based decision-making tools, applications and services, based on an open, flexible, and secure cloud-based computing infrastructure.



Data Lake

The data lake will bring together data from ESA, EUMETSAT, ECMWF as well as from Copernicus, and many other diverse sources, with new data from the Digital Twins. It will allow discovery and data access as well as big data processing in the cloud.



Digital Twins and Digital Twin Engine

DestinE is creating several digital replicas covering different aspects of the Earth system and based on state-of-the-art simulations and observations. ECMWF is implementing the Digital Twin Engine, the complex software and data services needed for Earth System digital replicas, as well as the first two digital twins; Climate Change Adaptation, which will provide multidecadal simulations, and the Weather-induced Extremes twin, with both high-resolution forecasts and on-demand simulations.

DestinE Timeline

https://destination-earth.eu/

2022 | 2023 | 2024 | 2025 | 2026 | 2027/2028

DestinE Phase 1 — DestinE Phase 2 — (DestinE Phase 3)

Dec 2021 DestinE signature

30 months

Jun 2024 DestinE Launch

Oct 2024 DestinE Opening

24 months

Development

Development of the first two Digital Twins
Development of the DestinE Platform
Access to HPC Services
Development of Data Lake

Initial services

Access to DestinE Platform
Core Platform Services
Access to Digital Twin Data
Access to Data Lake Services

Enhancement

Enhancement of Digital Twins
Advances Platform Services
AI Capabilities
Enrichment of the data lake

2030
Digital replica of the Earth

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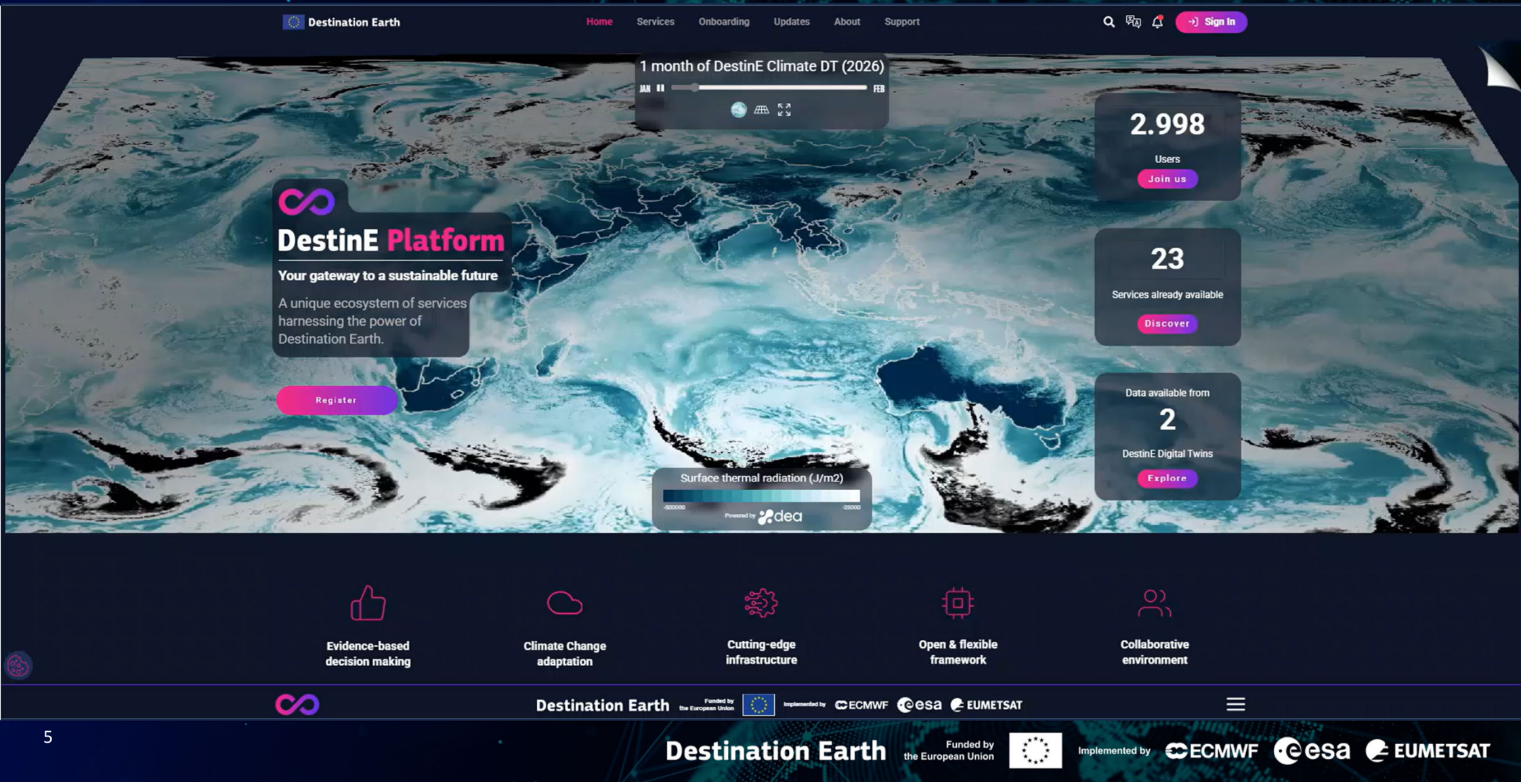
DestinE Platform: entry point to DestinE

https://platform.destine.eu/



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DestinE Platform: the users

https://platform.destine.eu/

Policy Makers

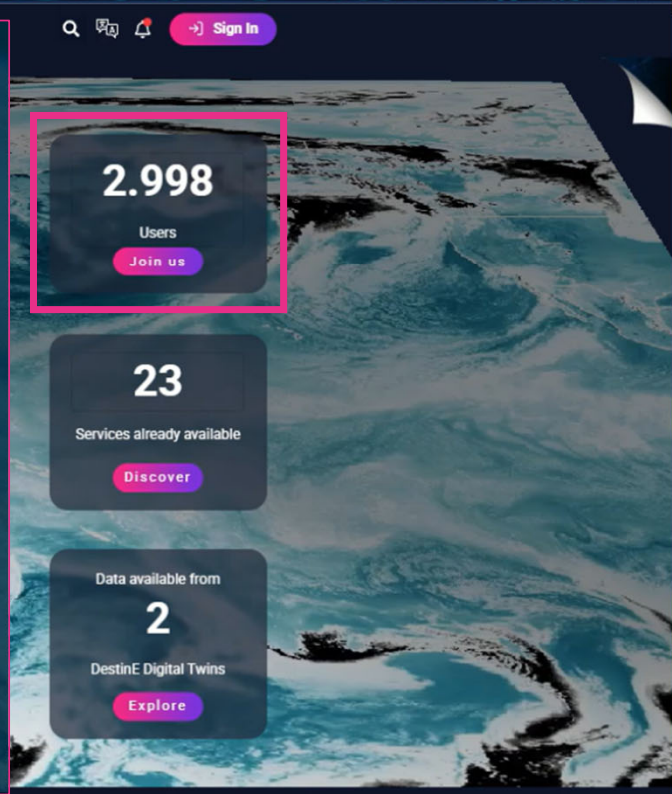
- European Commission directorates
- European Agencies
- National & European public organizations

Scientific Community

- National & European Space agencies + Meteorological agencies
- Research centres, academic institutes

Industry

- European industry: tech, climate, energy, weather, tourism, space
- European R&D projects



Evidence-based decision making

Climate Change adaptation

Cutting-edge infrastructure

Open & flexible framework

Collaborative environment

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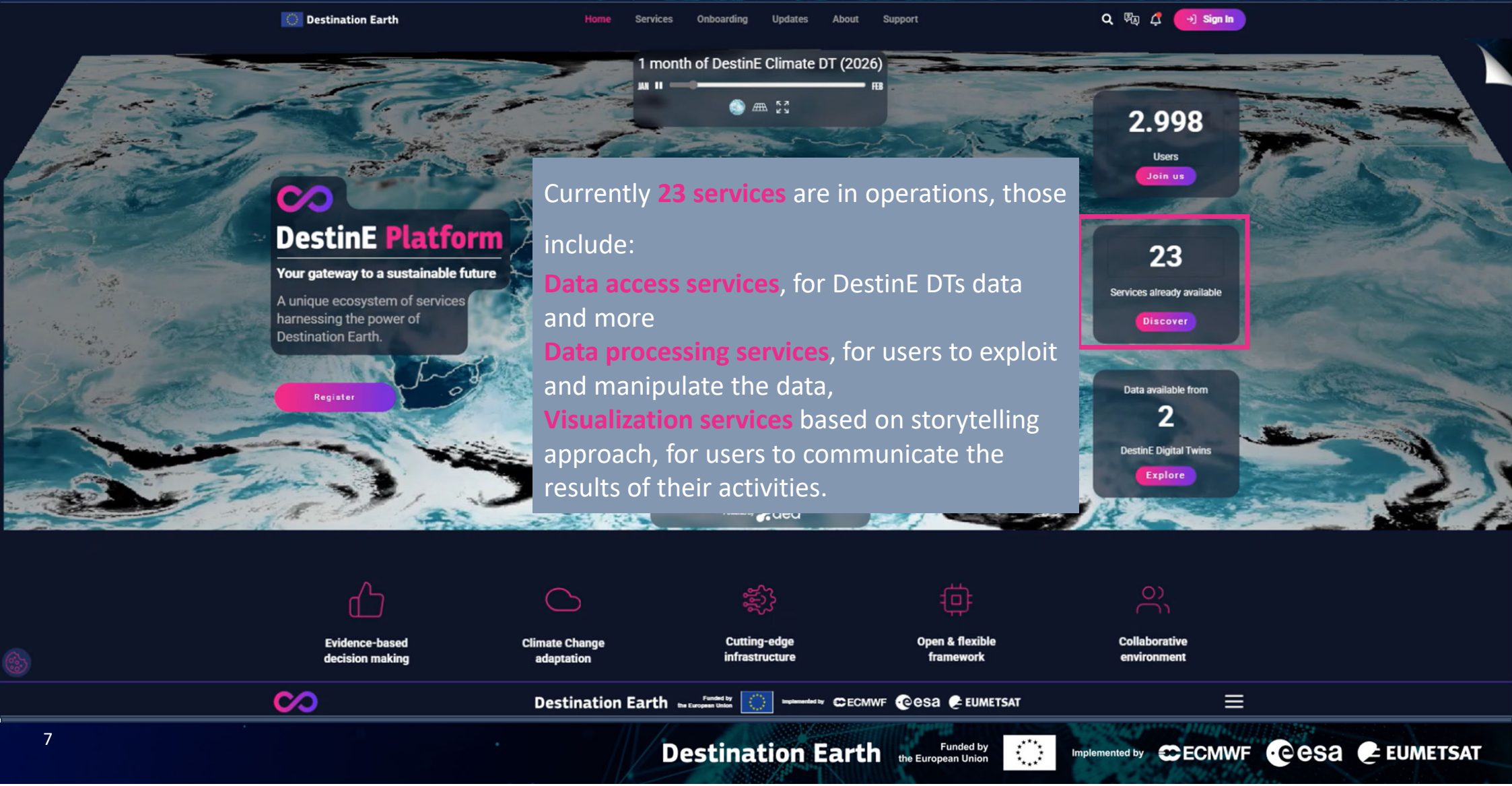
DestinE Platform: service ecosystem

https://platform.destine.eu/services/



Currently **23 services** are in operations, those include:

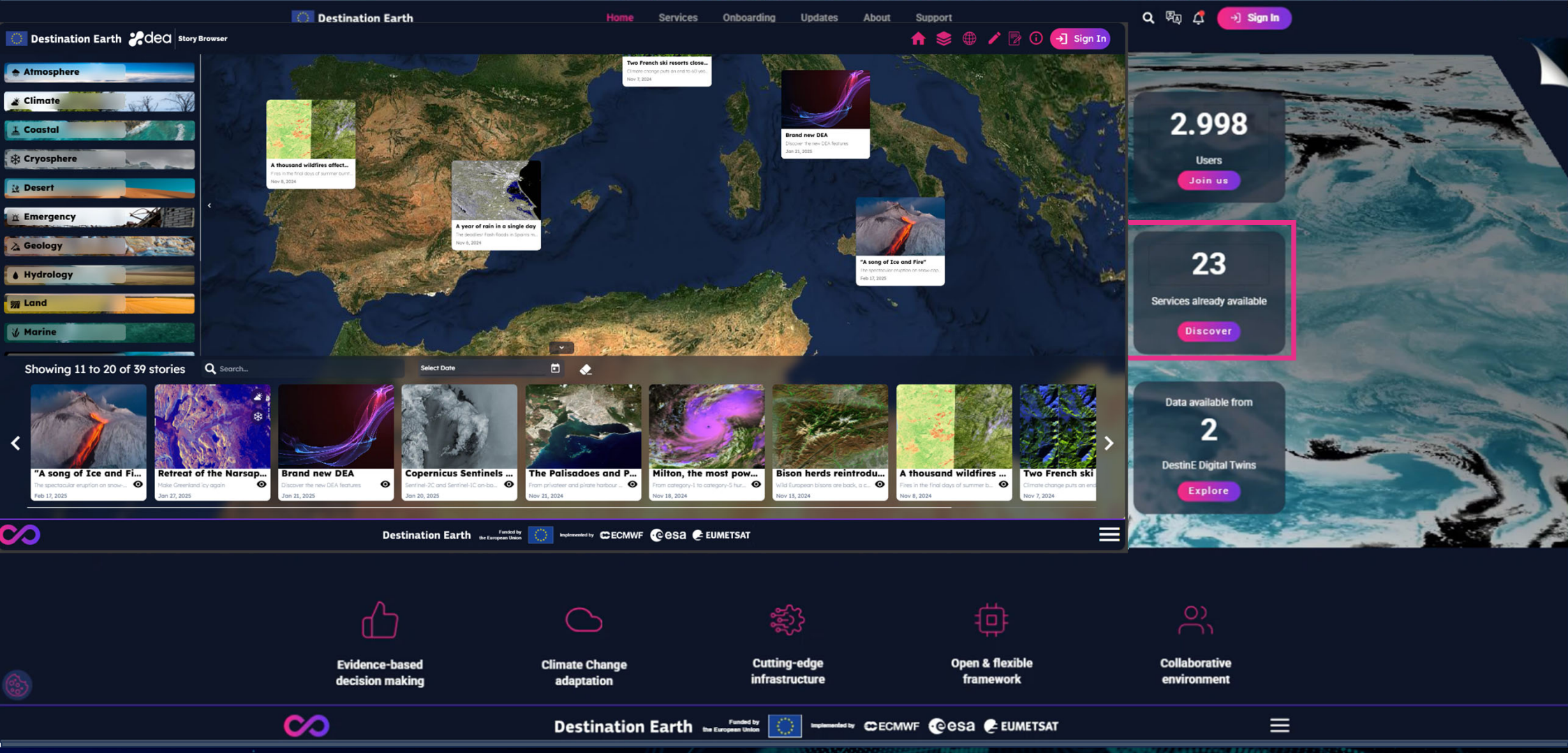
Data access services, for DestinE DTs data and more

Data processing services, for users to exploit and manipulate the data,

Visualization services based on storytelling approach, for users to communicate the results of their activities.

DestinE Platform: Storytelling

https://dea.destine.eu/



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DestinE Platform: entry point to DestinE

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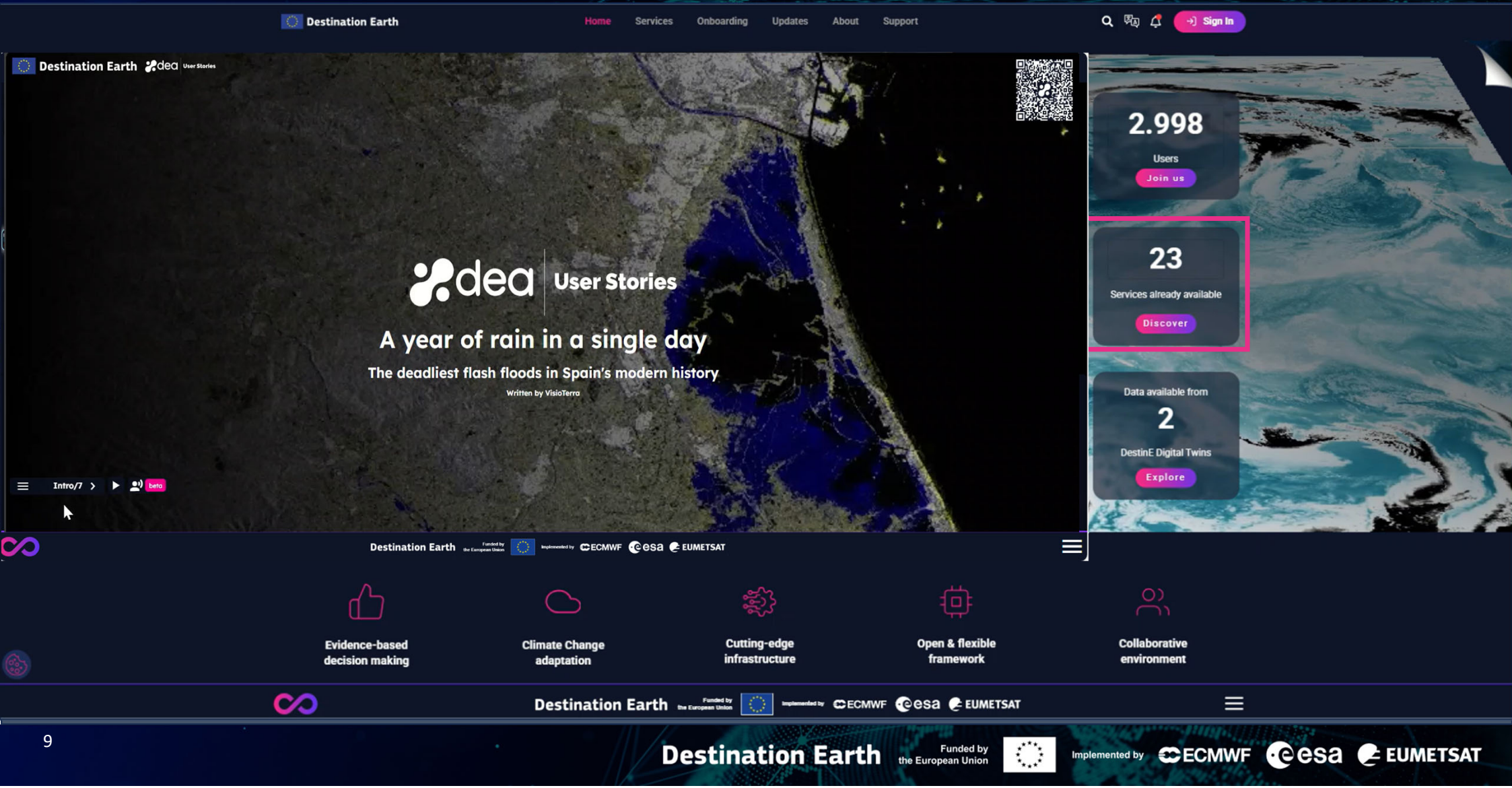
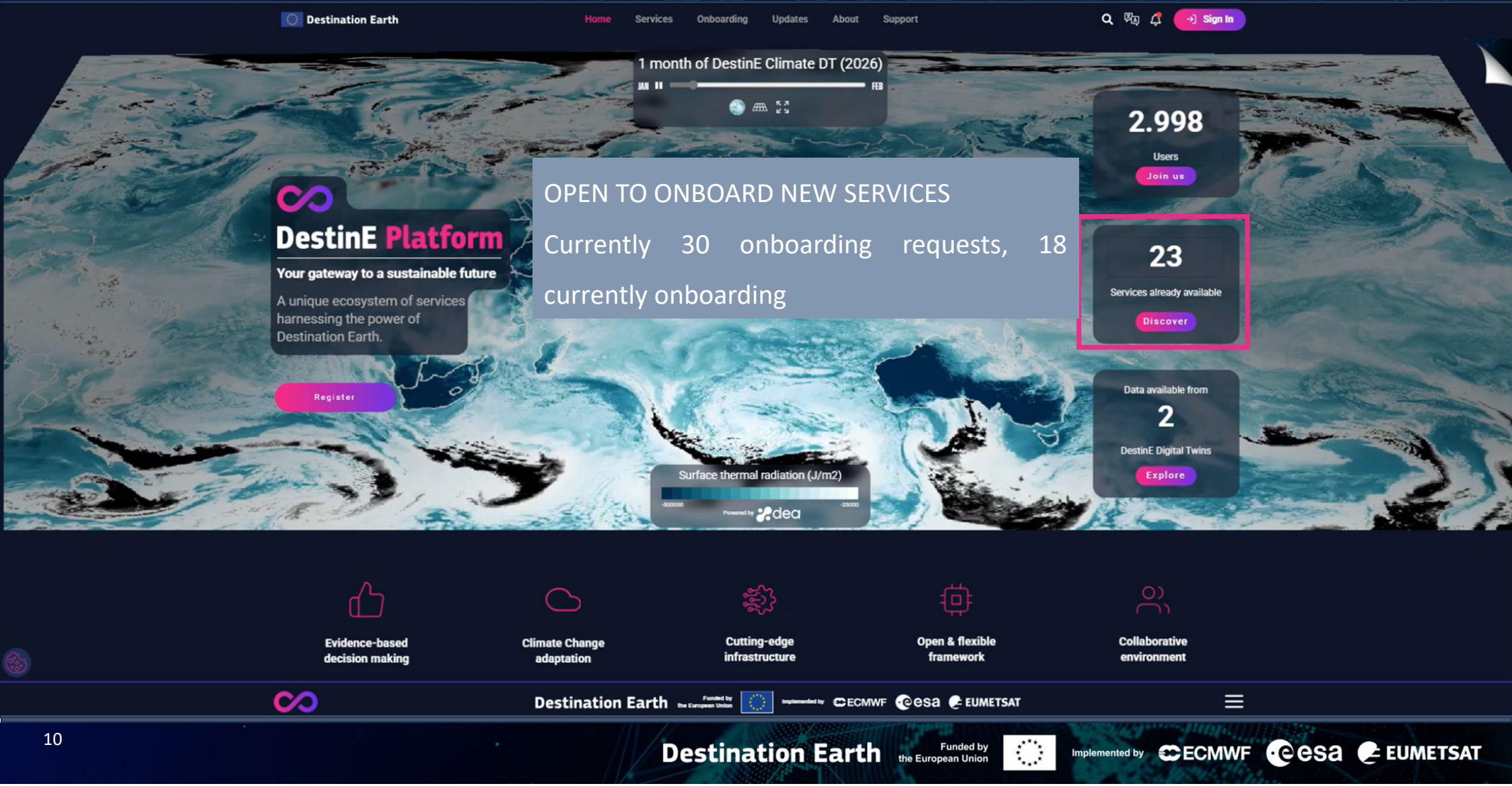


DestinE Platform: Onboarding new services

Onboarding – DestinE Platform/



DestinE Platform: entry point to DestinE

https://platform.destine.eu/services/

Data Cache Management

The Data Cache Management Service (DCMS) is a local storage on the DestinE Platform for frequently used data, flexible to be adapted to user needs. It contains a subset of DestinE Digital Twins data in ZARR format and lat-long projection.

Go To Service

DestinEStreamer

The DestinE Streamer service provides optimized data access through advanced compression and access techniques. Among others, it provides access to DestinE Digital Twins data retrieved from the DCMS.

Go To Service

EDEN

The EDEN service is a service providing access to a variety of datasets. It includes a direct interface to the HAD service to access native DestinE Digital Twins data.

Go To Service

HDA

The Harmonised Data Access (HDA) is a service offering a STAC API allowing users to browse through the wide variety of data made available in the DestinE Data Portfolio, including the native DestinE Digital Twins data.

Go To Service

Polytope

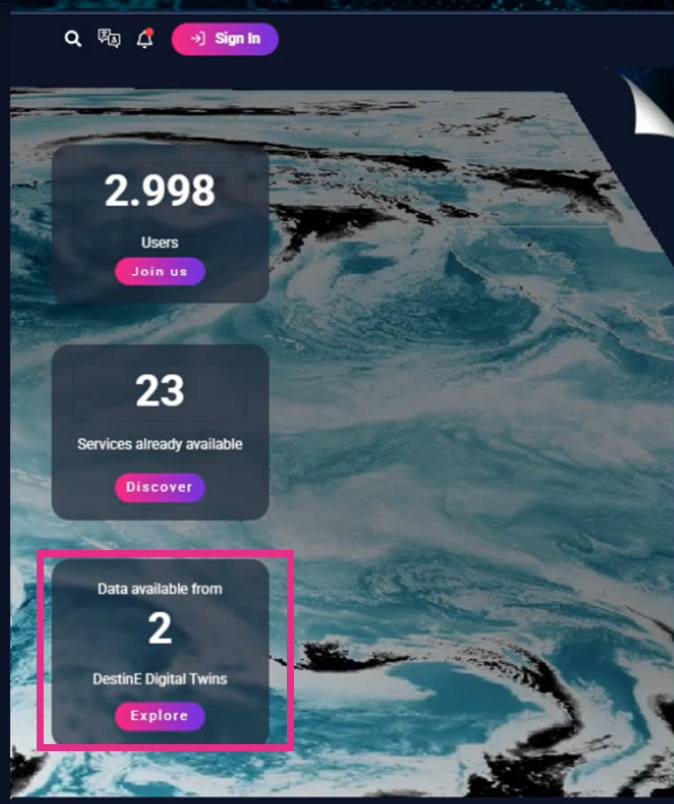
The Polytope service is a service providing access to the full data portfolio of native DestinE Digital Twins data. These native data are shared in healpix projection and in the form of hypercubes.

Go To Service

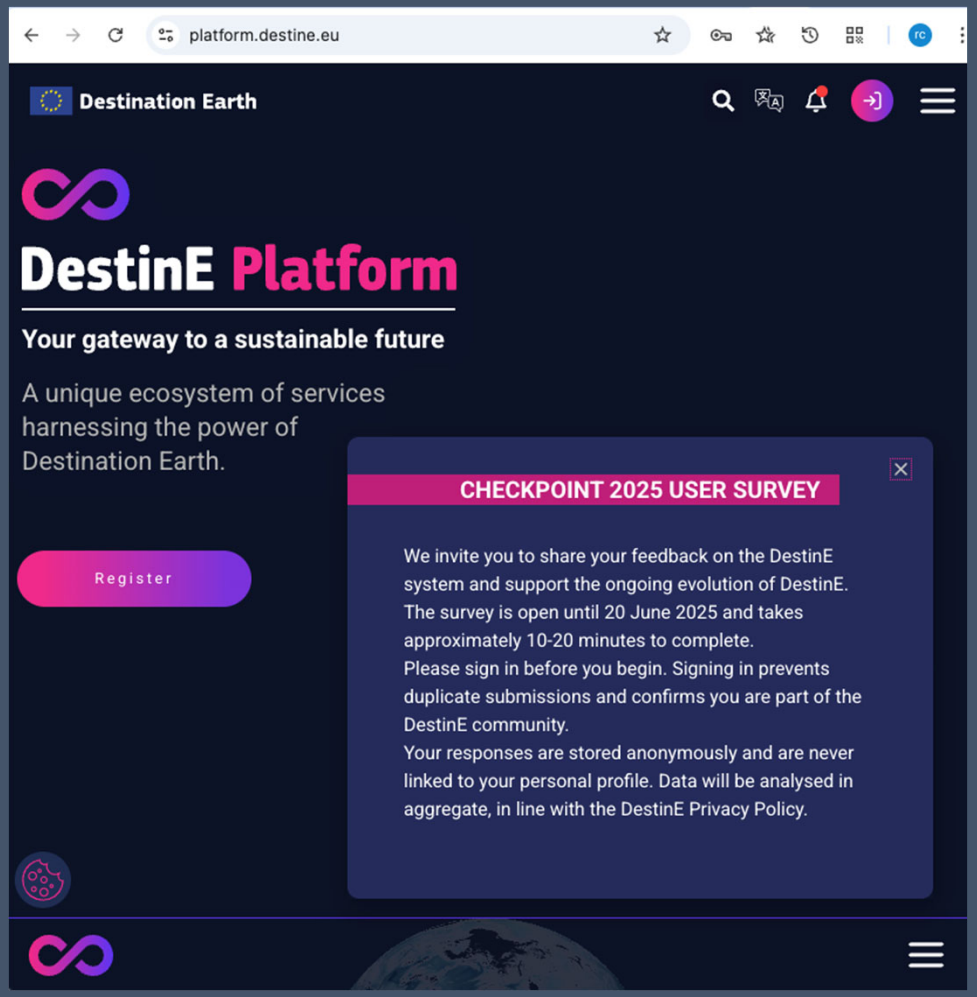
SesamEO

The SesameEO service is a service providing a direct interface to different data access services making heterogeneous data easily accessible. It includes sources such as the HDA, to retrieve native DestinE Digital Twins data, the local Cache A of DestinE Platform, as well as Copernicus or Eurostat.

Go To Service



Your feedback is important!



Don’t forget to register!

Use the Survey
to convey immediate reaction!

4th DestinE User eXchange

June 25 @ 8:00 am - June 26 @ 1:00 pm CEST 1 minute • AUSTRIA

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esa
We’re here to support the adoption, use, and co-development of DestinE for your applications.
Let’s explore new ideas together — tailored support is just a message away.
📩 Contact us at: engage@destine.eu