



# Destination Earth

*European Commission, DG CONNECT – Open Science and Digital Modelling*

# Destination Earth – key elements

**Flagship initiative of the EC**  
*Twin green and digital challenge*

- European Green Deal 2019
- European Data Strategy 2020
- Shaping Europe's Digital Future 2020

**Objectives of the initiative**

- To develop a very accurate digital model of the Earth (a 'digital twin') to monitor and predict environmental change and human impact to support sustainable development for, inter alia,
  - Evidence-based policy development
  - Accessing data and model-based scenarios
  - User-Specific and Actionable Predictions

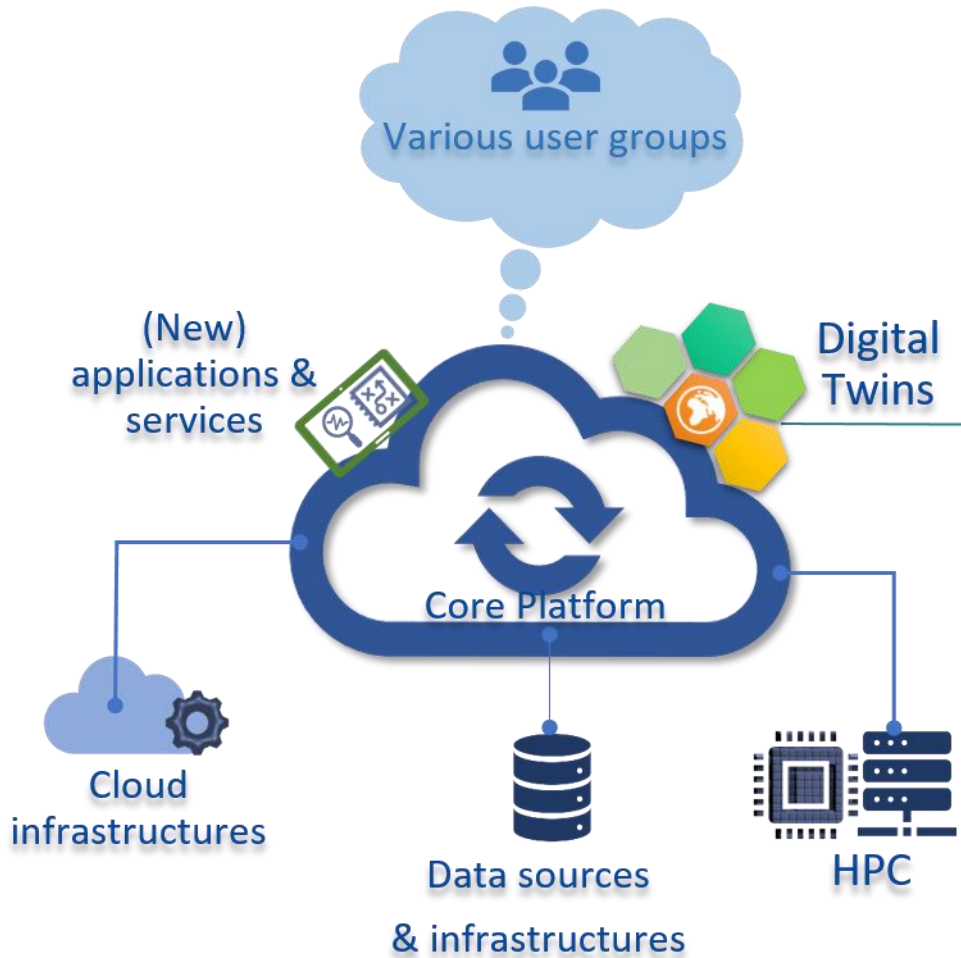
**Main elements**

- Core platform
- Digital Twins and DT engine
- Datalake

**Funding**

- DIGITAL EUROPE Programme – operational implementation activities
- Horizon Europe – supporting R&I activities

# DestinE baseline architecture & DTs



## Digital Twins



### 1. Weather-induced and Geophysical Extremes

Environmental extremes at very high spatial resolution and close to real-time decision-making support (e.g. floods, wild fires, hurricanes, earthquakes, volcano eruptions)



### 2. Climate Change Adaptation

Climate change adaptation policies and mitigation scenario testing at decadal timescales aiming at a real breakthrough at the level of reliability at regional and national levels, for understanding the causes and explaining the feedback mechanisms of change, predicting possible evolution trajectories and identifying irreversible tipping points



Oceans DT



AI-powered Urban DTs



Biodiversity DT



More DTs... (e.g. migration)

Digital Europe Programme funding (150M€ for the first phase 2021-2024)



Horizon Europe calls to support research related to Destination Earth (modelling, DTs...)

Strategic Union initiative for EuroHPC

# Destination Earth – implementation



- **DG CONNECT** operational lead; co-leadership with DGs DEFIS and RTD and the JRC
- **Contribution Agreements for indirect implementation** with ESA-ECMWF-EUMETSAT (3Es)
  - ESA : the core platform and overall system integrator
  - ECMWF: Digital Twins and the DT Engine
  - EUMETSAT: data integration, data lake
- Significant involvement of the **EU industry** through procurement by the 3E
- **R&I activities** to support evolution of Destination Earth funded by the EU
- **External governance** through expert groups of the Commission
  - Strategic Advisory Board of Destination Earth
  - Destination Earth Coordination Group (EU MS/AC)

2021-2024

- Operational cloud-based platform
- First two digital twins

2024-2025

Platform integrates the next operational digital twins and offers services to public sector users

2025-2030

Towards a full “digital twin of the Earth” through a convergence of multiple digital twins on the platform

# Thank you



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