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Use of AI, big data and space technologies in terrestrial management

Destination Earth (DestinE) & Digital Twin Earth

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*"Destination Earth will contribute to the European Commission's Green Deal and Digital Strategy... At the heart of Destination Earth will be a federated cloud-based modelling and simulation platform, providing access to data, advanced computing infrastructure (including high performance computing), software, AI applications and analytics. **It will integrate digital twins – digital replicas of various aspects of the Earth system ..."***

On invitation of DG CNECT:
ESA, ECMWF and EUMETSAT are closely working together toward a proposal for an implementation of DestinE...



What if ...

we had a comprehensive digital replica of Earth that ...

- simulates & observes the Earth-human interaction with high accuracy ...
- harnesses innovative extreme-scale computing, data handling and AI technologies ...
- is continuously updated with Earth Observation data and other data ...
- enables accurate Earth-system simulation and prediction capabilities ...
- provides detailed views of past, current and future physical changes ...
- transforms data into information for decision & policy making



→ Digital Twins for Destination Earth

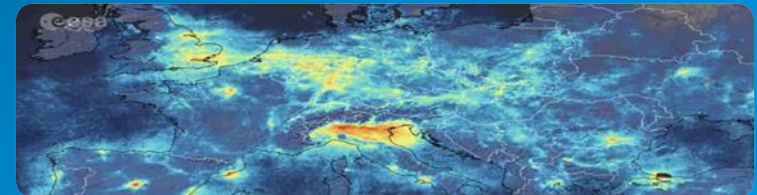
Destination Earth Components and Output



- Cloud infrastructure
- HPC infrastructure
- Harmonised Data Lakes
- Earth simulation & observation centers
- AI & Software & Science competence centers
- European data networks



Simulation and Monitoring
past, present & future

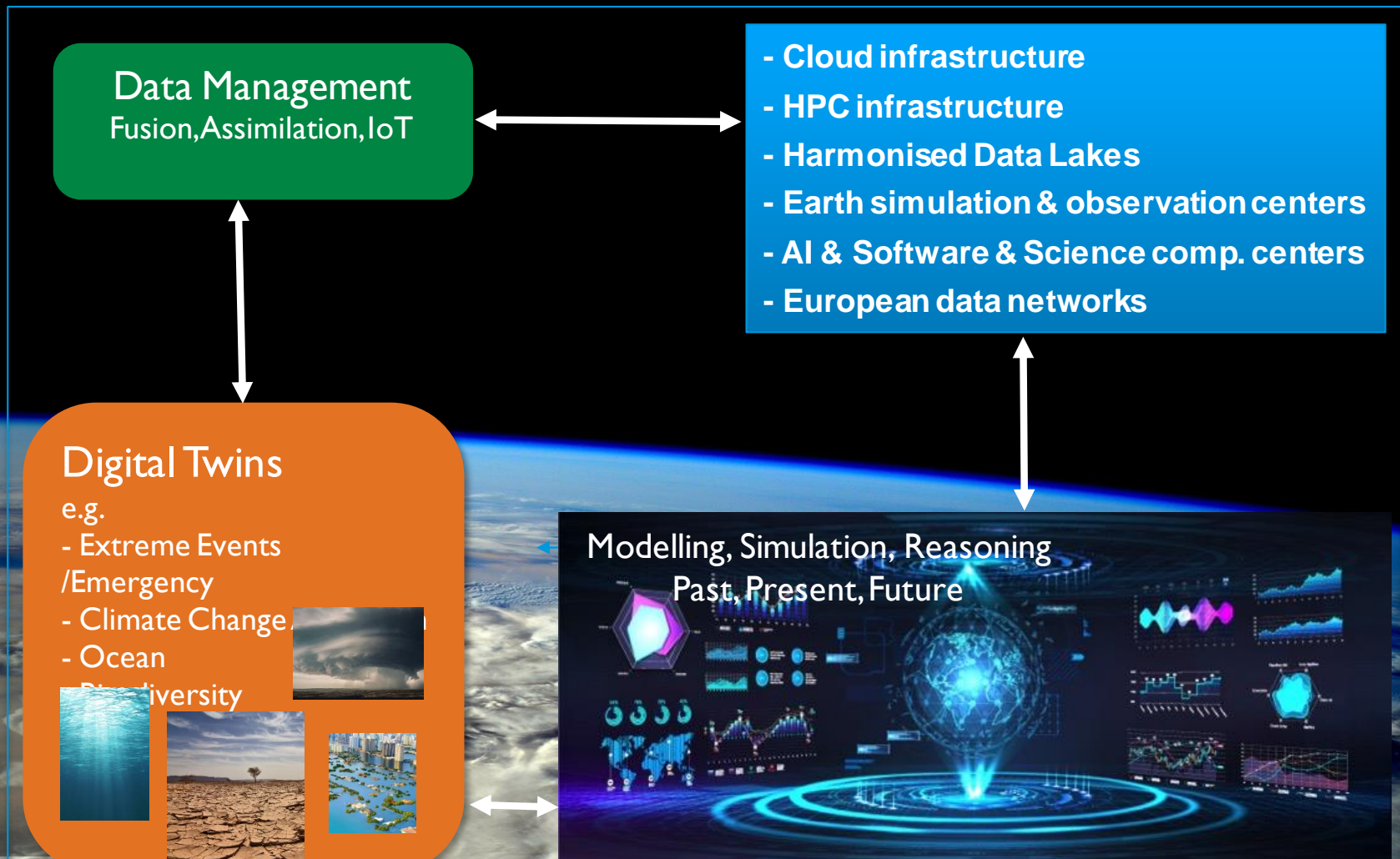


Visualisation

Destination Earth & Digital Twin Earth Principles



Data →
← Policies



- Display results from year 1
- Large user community in 3 years
- Be open
- Be evolutionary
- Be interactive
- Be collaborative
- Generate visibility