

On-going and future AI Activities



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Destination Earth

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AI Role for DestinE and DestinE Platform

The DestinE Platform is at the confluence of Green Deal related thematic applications and digital technology

- The DestinE Platforms enables the delivery by Service Providers of reliable and innovative services
- The DestinE Platforms relies on European IT cloud technology for the hosting of the services

AI is a game changer in the Digital world : the DestinE Platform is evolving to unlock AI based services

- AI operational paradigms are demanding & need to be carefully considered to create trust to the service providers and into the offered services
 - Is it the right platform to develop AI based services (e.g. available infrastructure, easy workflows,...)?
 - Are the services biased (e.g. training set used, validation approach,...)?
- The DestinE Platform is based on a medium size scalable solution providing access to AI compatible infrastructure (i.e. GPUs are available in OVHCloud)

AI Readiness for DestinE and DestinE Platform

A. Ready for users or service providers to prepare their own models

- Ready to **support services in organising adapted workflows**
 - ✓ The DestinE Platform supports customisable data flows (e.g. connectors to the data lake, growing libraries of reusable source data connectors, optimised data cache,...)
 - ✓ The DestinE Platform offers streaming services that ease the training tasks (e.g. large volume reduction, fast access)
- Ready to **support small and medium models** development
 - ❑ The platform is **not sized for all types of AI related activities**

e.g. Large training would consume all platform resources – Not the objective!
 - ✓ Access to **GPU and scalability sufficient for many regional dataflows** and associated training

AI Role for DestinE and DestinE Platform

3. Ready for users or services to make use of trained models

- AI end points would allow consumption of DestinE platform resources to make use of identified models
 - ✓ ECMWF climate models are under construction and should offer new inferences capabilities (what if scenarios)
 - ✓ First Service providers already offer AI based services (e.g. labelling, automatic detection,...)
- ❑ Be aware !!!!!
 - ❑ **Resources consumption and scalability:** The platform resources and services are scalable but the scalability is governance based (currently EC to decide on case by case on users and project eligibility for data access and resources consumption)
 - ❑ **AI based services may require specific validation** (e.g. existence of biases,...): a dedicated quality framework is under preparation (2026-2027).
 - ❑ **AI based decision making would certainly require higher level of interoperability** with other services and therefore need to be done within the governance of a larger context (e.g. respecting national sovereignty,...)

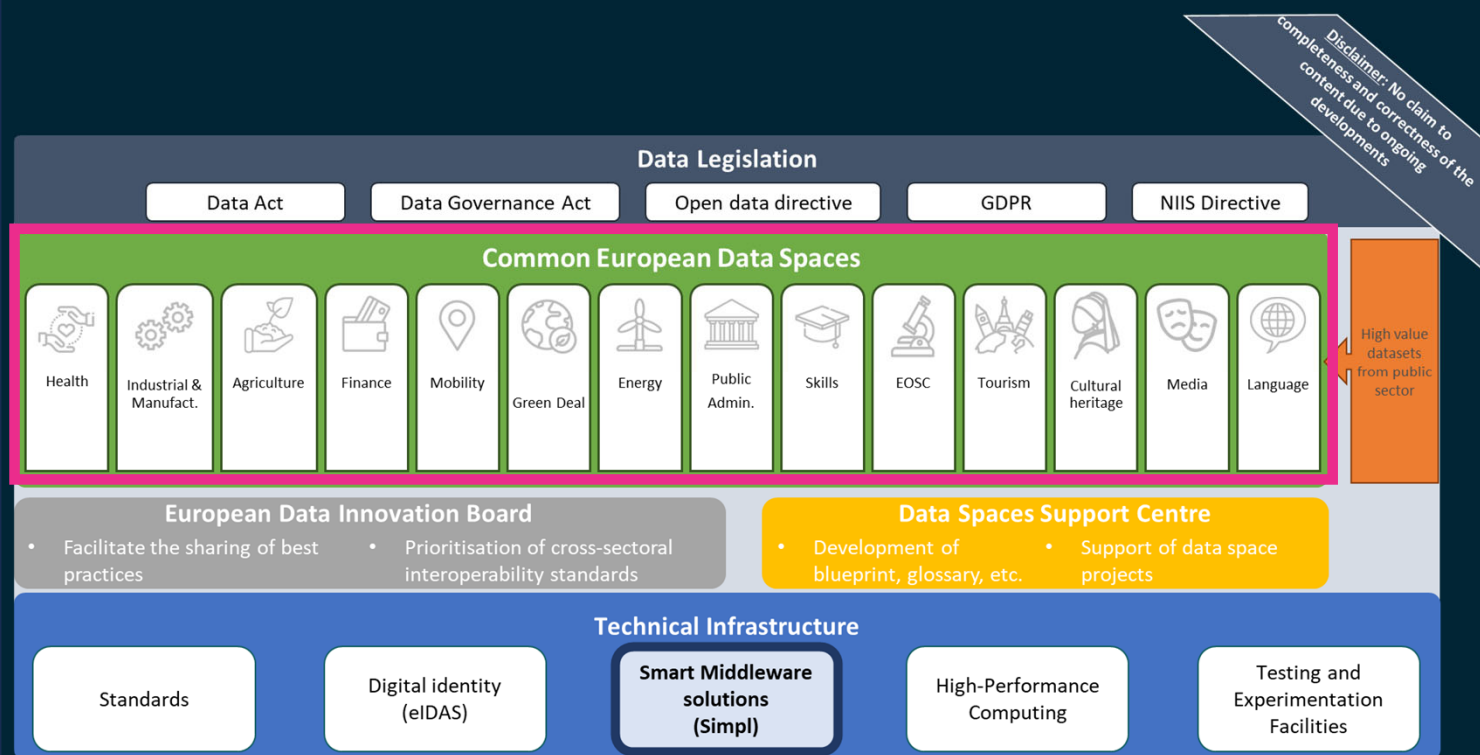
AI Role for DestinE and DestinE Platform

C. The DestinE platform shall be ready for AI interoperability

- In future “agents” will certainly play a larger role
 - ✓ The DestinE Platform should prepare its interfaces to ease efficient interactions with AI decision making based system (AI based crisis support may streamline information retrieval and update)
 - ✓ Governance should be adapted to such exploitation (e.g. priorities in crisis management context, opening the system to automatic harvesting, higher access control,...)

Services shall respect EU rules and the AI workflows or dataflows cannot be consolidated without considering larger European framework for data exchange and associated governance

European Single Market for Data: Data Spaces



- A Data Space is an interoperable framework, based on common governance principles, standards, practices and enabling services, that enables trusted data transactions between participants.

- It emphasizes data sovereignty, enabling participants to keep control over how their data is accessed and used.

- Built on open standards, data spaces support negotiation, enforcement of usage policies, traceability, and interoperability

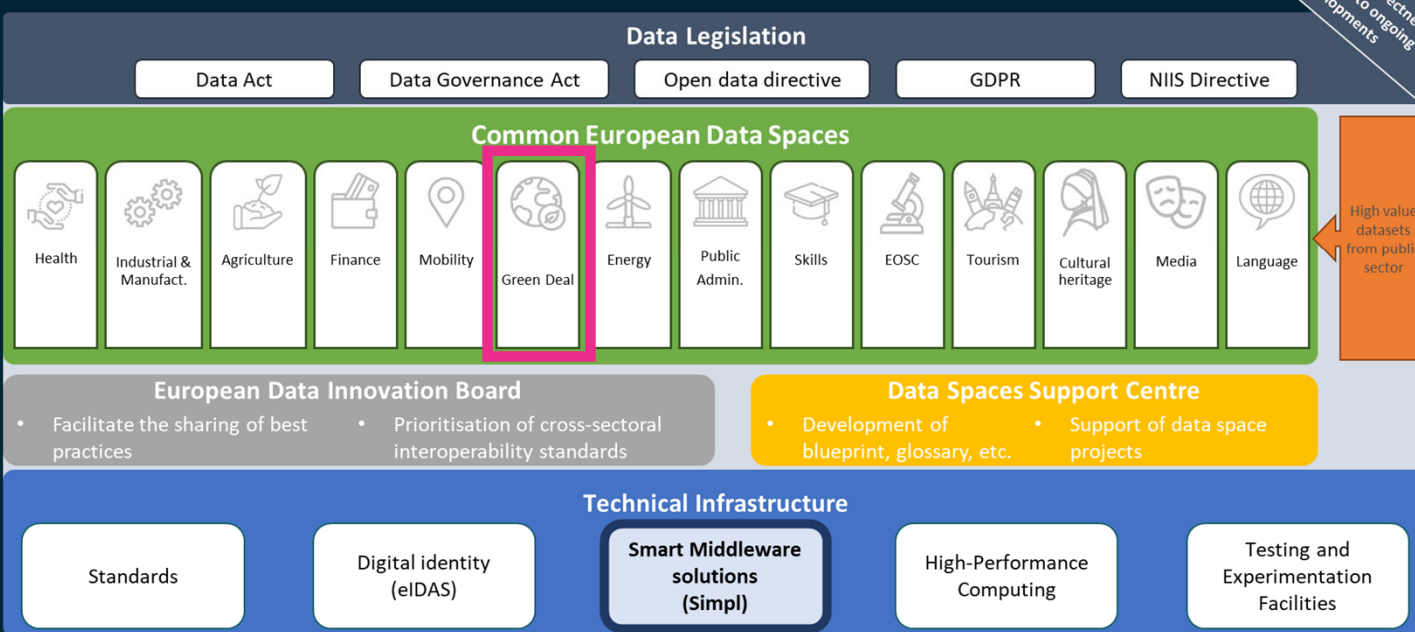
Benefits: Market creation, Trust & sovereignty, Interoperability, Ecosystem for innovation

European Single Market for Data: Data Spaces

Disclaimer: No claim to completeness and correctness of the content due to ongoing developments

The Green Deal Data Space (GDDS) is one of the common European data spaces envisioned by the European Commission :

=> An enormous amount of cross-sectorial data in support of the priority actions of the Green Deal e.g. biodiversity, zero pollution, circular economy, climate change, environmental compliance...

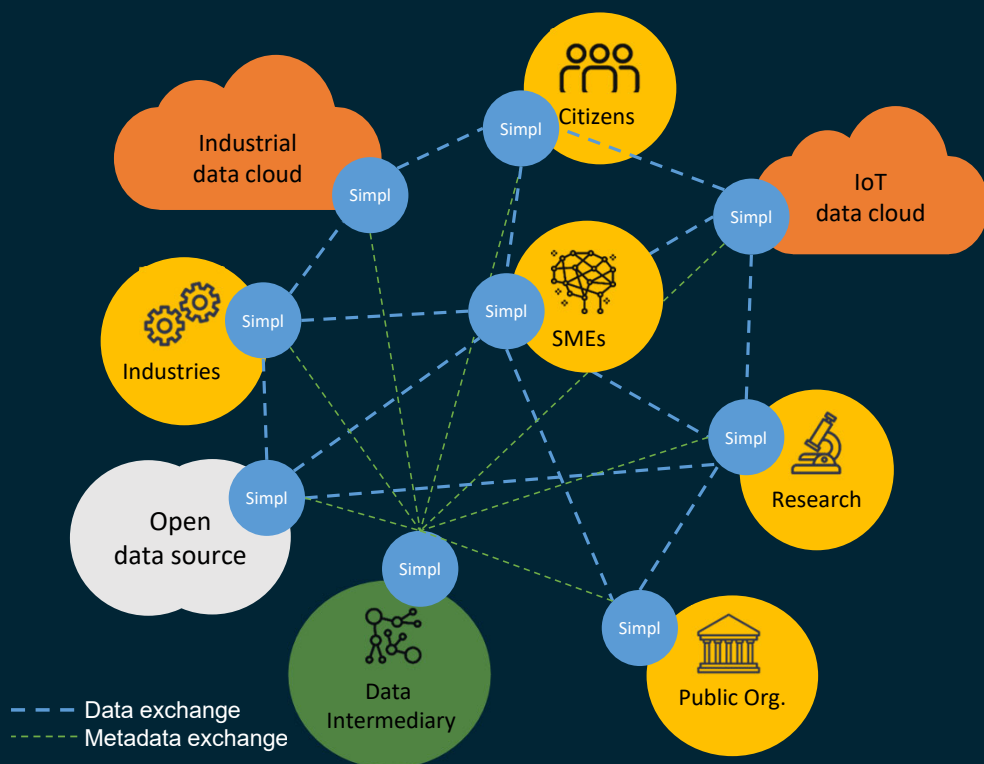


DestinE Platform is being prepared to be **Green-Deal-Data-Space-ready**

European Single Market for Data: Green Deal Data Space

Decentralized, Multi-Stakeholder Infrastructure	Enables trusted, sovereign data exchange among public, private, and citizen contributors—across domains like biodiversity, pollution, circular economy, climate, mobility, and more
Semantic FAIR Interoperability	Implements standardized vocabularies, APIs, and metadata to make data Findable, Accessible, Interoperable, and Reusable
Symmetrical Data Sharing Model	Moves beyond traditional spatial data systems balancing open and private data while respecting sovereignty
Policy-Aligned Governance & Legal Framework	Operates under EU standards like the Data Act, Data Strategy, INSPIRE updates, and eIDAS—with identity trust, and compliance controls
Supports Green Deal Priorities	Focuses on environmental challenges through shared cross-domain datasets that enable AI monitoring, analysis, and evidence-based policy for pollution, biodiversity, and climate adaptation
Ecosystem for Scalable AI & Digital Twins	Powers large-scale AI services and digital twins (e.g., DestinE) via federated access to high-value environmental datasets across compute infrastructures

Technical infrastructure: SIMPL and its benefits for AI

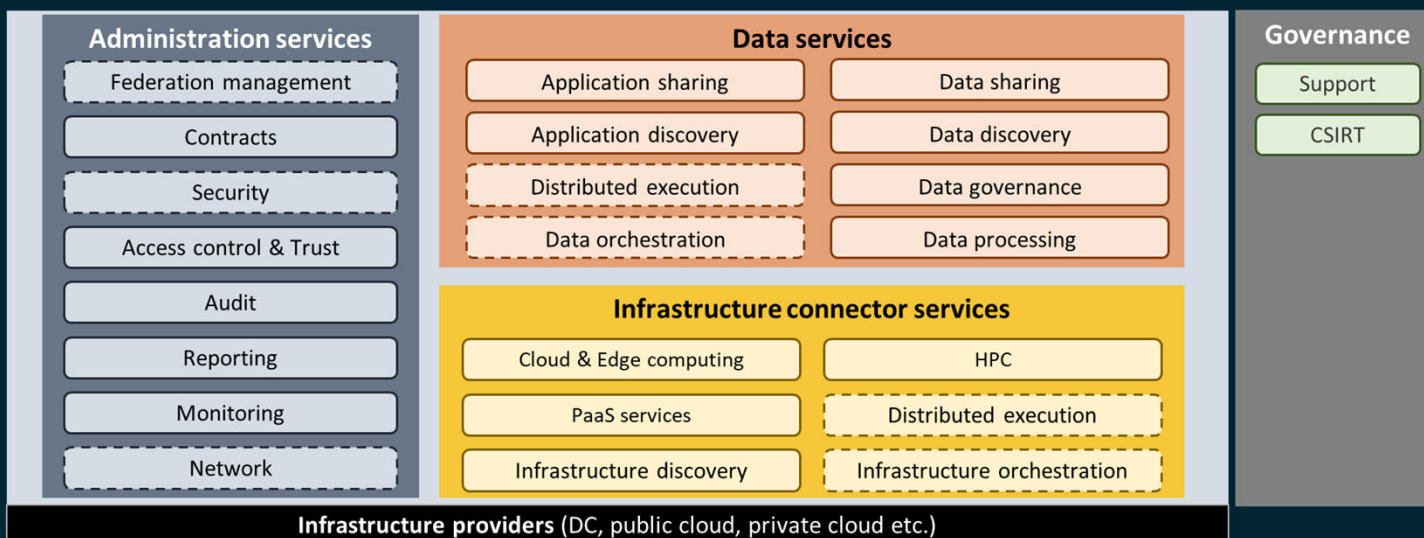


Long term benefits to DestinE Users:

- **Federation:** Unified secure federation across cloud/HPC/edge
- **IAM:** Federated, consistent authentication via eIDAS
- **Orchestration:** Automated multi-cloud/HPC orchestration
- **AI Pipelines:** End-to-end, federated AI workflows
- **Onboarding:** Simplified via Simpl-Live compliance

Simpl is the open-source smart middleware that enables cloud-to-edge federations and all major data initiatives funded by the European Commission

Technical infrastructure: Simpl and its benefits for AI



The most AI-relevant pillars in Simpl's architecture are:

- Distributed Execution
- Data Orchestration & Processing
- Infrastructure Orchestration
- Access Control, Trust & Federation Management
- Application/Data Discovery

Together, they enable the creation of a full-stack, federated foundation enabling:

- Efficient batch/real-time AI workflows
- Secure data-model-resource coordination
- Scalable deployments across cloud, edge, HPC
- Compliance and interoperable ecosystems



To conclude...

Current situation offer... to be extended in 2026

Existing services



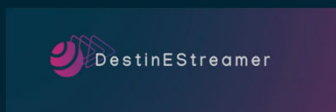
DeltaTwin (<https://deltatwin.destine.eu/>): collaborative environment to create, run, and share multi-scale models (including AI models), leveraging diverse data sources and ensuring interoperability with industry standards (e.g., MIMs for Urban Twins).



GeoAI (<https://geoai.destine.eu/>): Service to create datasets for AI training based on geospatial images (e.g., Sentinel images) and modelled data (e.g., Climate DT data). Users can create their own project, store their models, and share them with the community.



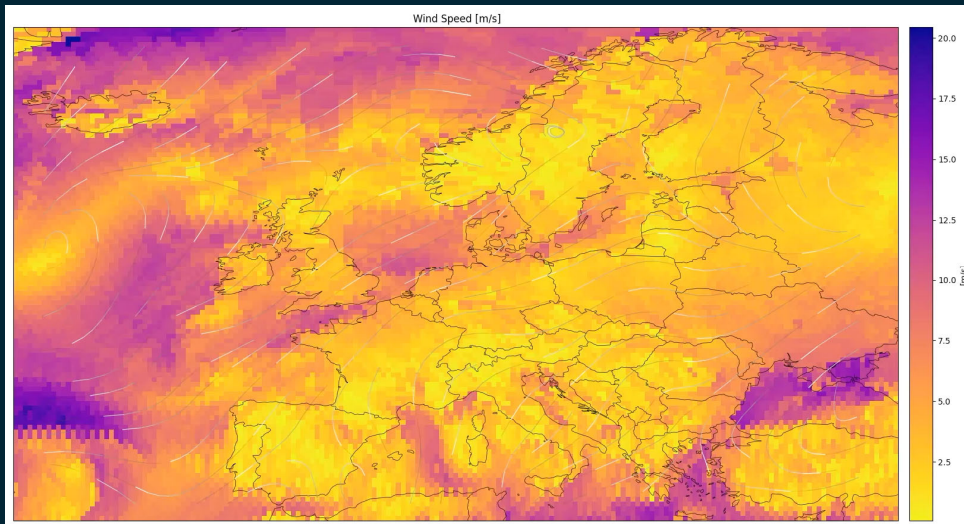
HIGHWAY (<https://highway.esa.int/>): Service to access harmonised, cloud-optimised, high-quality datasets from ESA Earth Observation missions ready for machine learning, large-scale simulations, and digital twin applications.



DestinE Streamer (<https://streamer.destine.eu/>): DestinE Streamer compresses imagery, sensor, and raster-simulation data into bitstream objects. As a result, models can train and infer faster—even at scale—with minimal latency, unlocking rapid insights and scalable AI and digital twin applications

To conclude...

ESA runs its own test workflows to verify if the DestinE Platform is “fit for purpose”



From low Resolution to High Resolution DestinE Simulations using AI

From Global to Local – (AI based model)

Activity put in place in less than one month => should require one week in 2026 and not more than 1 day in 2027

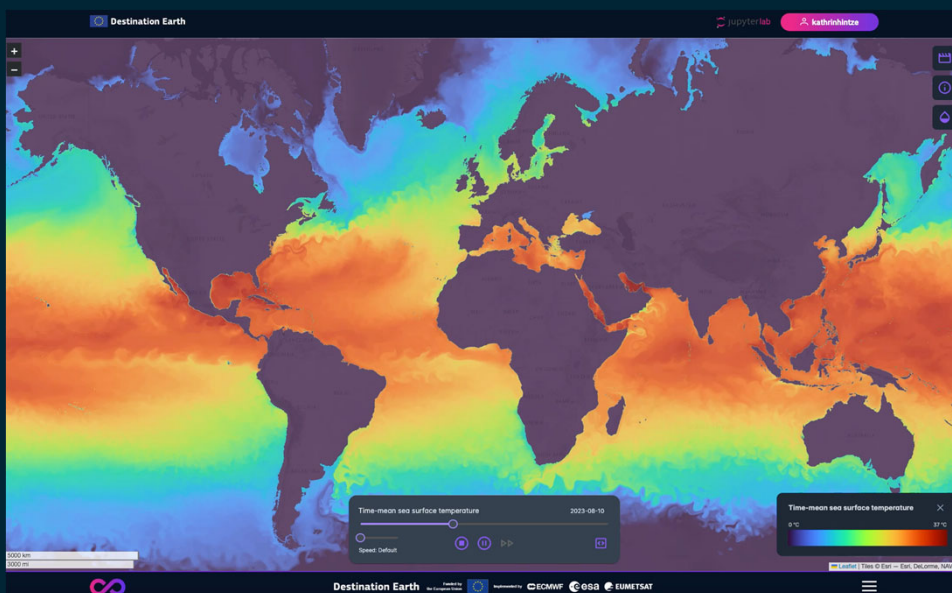
Is the ingestion rate from DestinE Platform data cache sufficient?

Is the infrastructure sufficient for AI training ?

To conclude...

DestinE leverages OVHCloud capabilities from 40 FPS up to 675 FPS (frames/products per second)

Equivalent of **24 movies streamed without effort**



DestinE Platform Streamer: Go onto the site this is not any longer a film, but a real-time stream you can interact with!

Access requires EC authorisation, just ask for it!

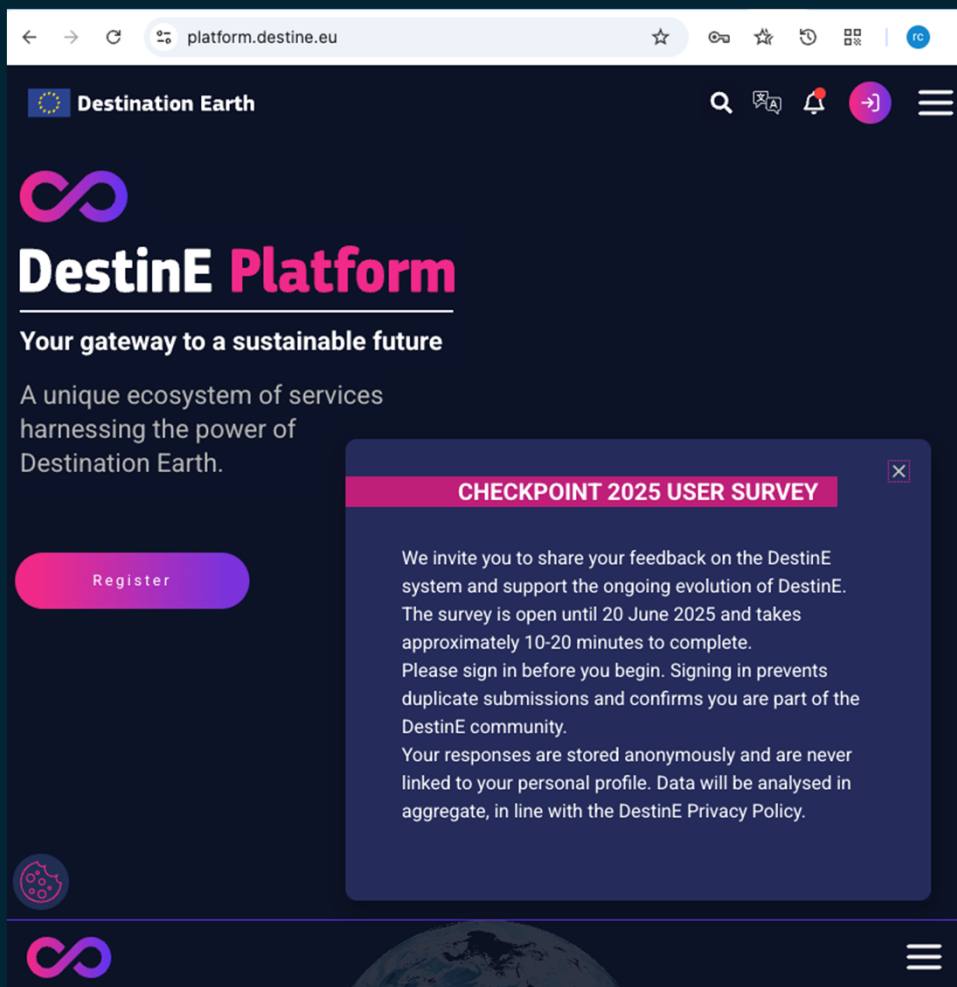


Representation of data streaming for AI training inference at 30 FPS

Sentinel 2 – L2A – 60m resolution

New tests are being conducted to integrate AI based developments into platform services in less than 2 days of work => target is a few clicks for non experts (objective 2026)

Your feedback is important!



Don't forget to register!



Use the Survey
to convey immediate reaction!

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