

# DestinE Platform

**BRINGING EARTH'S DIGITAL TWIN TO LIFE:  
EXPLORING THE DESTINE PLATFORM**

Your Gateway to a Sustainable Future

Matteo Cortese  
Maintenance & Evolution Manager - Serco Italia S.p.A.  
([matteo.cortese@serco.com](mailto:matteo.cortese@serco.com))

BIG DATA FROM SPACE 2025, 29 September - 3 October 2025



Climate Change  
Adaptation

What-now  
What-next  
What-if

# Destination Earth

European Commission initiative that aims to develop a digital model of our planet

Environmental  
man-made damage  
prediction

Digital Twins  
EuroHPC Simulations

Anticipate extreme  
events & adapt  
policies to climate-  
related challenges

Destination Earth

Funded by  
the European Union



Implemented by



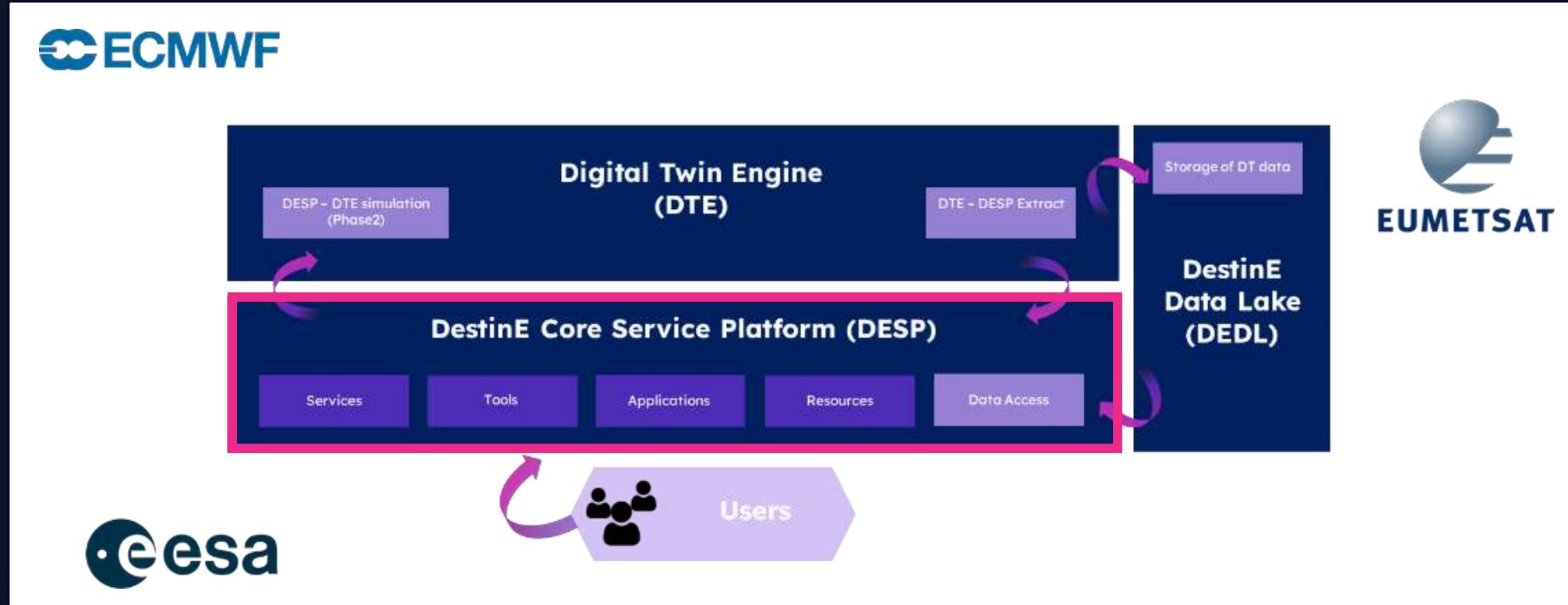
# DESTINE SYSTEM OVERVIEW

## THE POWER OF OUR ECOSYSTEM



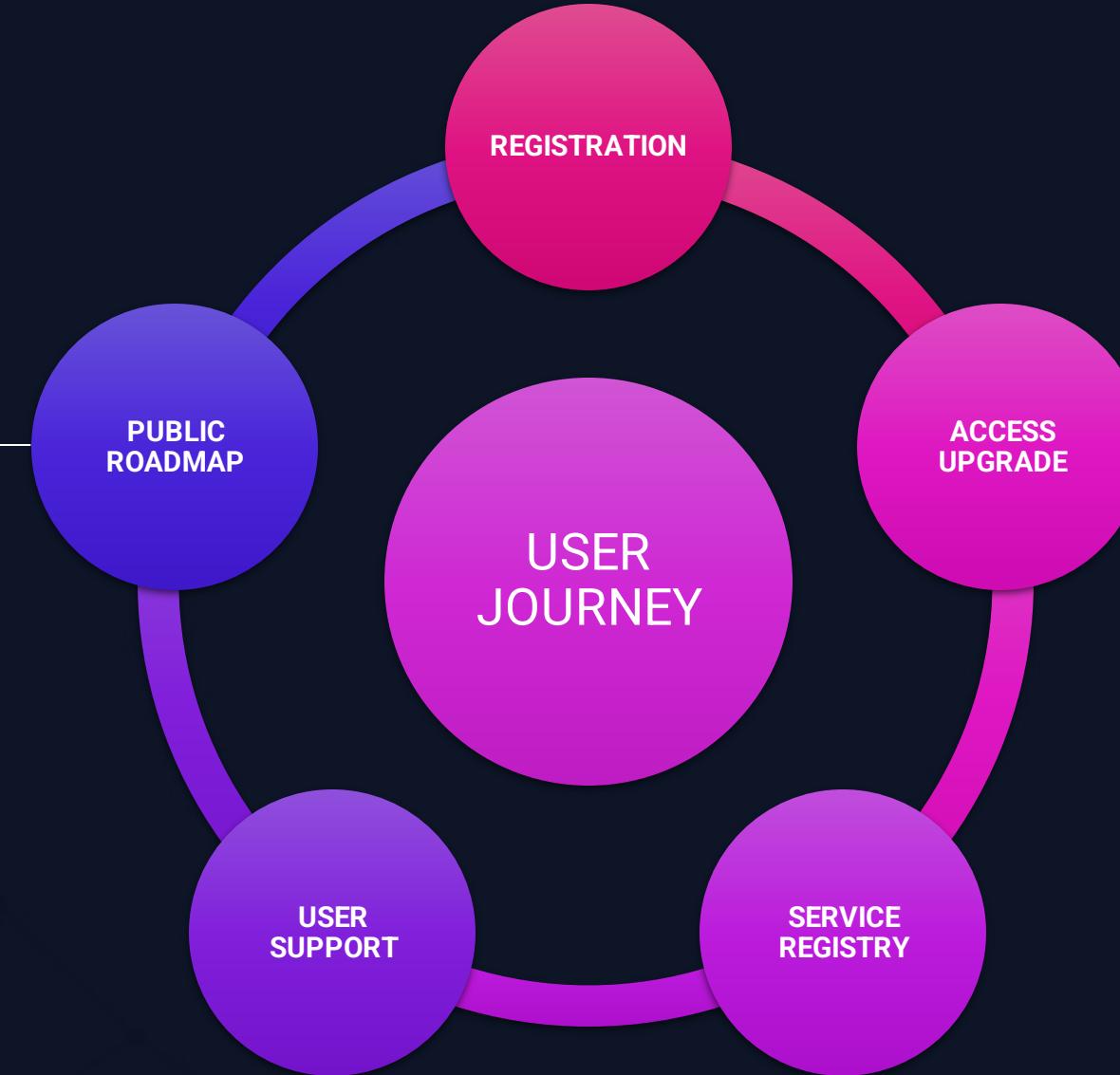
Destination Earth

A collaborative and comprehensive ecosystem delivering the Destination Earth initiative.



The DestinE Platform is an **ecosystem** of Services provisioned by ESA and operated by Serco Italia and its partners.

Steps are interconnected to create a seamless user experience.





#### VISUALISATION

- Explore datasets visually
- Immersive storytelling
- Streamlined processing



#### DATA WORKFLOW

- Access to DestinE data
- Data Cache service



#### DATA ANALYSIS AND MODELLING

- AI-driven solution
- Building/running workflows
- Monitor/anticipate activities



#### DEVELOPMENT ENVIRONMENT

- Ready-to-use environments
- Notebooks



#### PROCESSING ENVIRONMENT

- Advanced processing via UI/API
- Build code & configuration via UI

Catalogue guiding users to:

- Access and exploit data
- Discover DestinE applications
- Access DestinE data on the edge
- Identify Beta Testing services
- Discover Coming Soon services

27

Services already available

Discover

# SERVICE REGISTRY – NAVIGATING AND FILTERING SERVICES

## EFFORTLESS DISCOVERY: SEARCH & FILTER



Destination Earth

### How to find Services:

- **Search**  
Quickly find services using keywords.

Narrow down results by service type (e.g., "Data Visualization", "Data Access Management").

- **Filter by Tags**  
Use keywords for precise thematic searches (e.g., "Digital Twins," "Climate," "COG").

- **Filter by Data**  
Explore services linked to specific data.

The screenshot displays the Destination Earth Service Registry interface. At the top, there is a search bar and filter dropdowns for Categories, Tags, and Data. Below this, four service cards are shown:

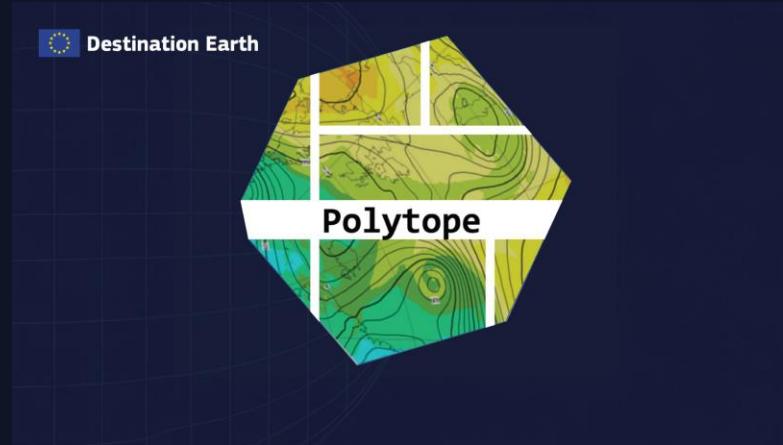
- GeoAI** (Geospatial AI Platform): DATA ANALYSIS AND MODELLING. Services: Earth Observation, Processing. Description: GeoAI is a cutting-edge geospatial AI platform that revolutionizes the way businesses and individuals harness the power of AI for earth observation use cases. Effortlessly design and implement your custom...
- DEA** (Interactive Storytelling): DATA VISUALIZATION. Services: 3D Graphics, Storytelling, Visualization. Description: Content creation service and no-code platform for DestinE storytelling and data visualization. Users can combine DEA data with their own assets to share engaging visualizations with the community in a...
- VizLab** (Pixel from Numbers | Stories from Data): DATA VISUALIZATION. Services: 3D Graphics, Storytelling, Visualization. Description: VizLab offers an intuitive GUI and advanced 3D rendering technologies, to provide immersive storytelling experience that goes beyond simple data visualization, making complex data sets accessible and understandable to a...
- Data Cache Management**: DATA ACCESS MANAGEMENT. Services: Data Cube, Discovery, S3. Description: The Data Cache Management Service (DCMS) supports the Digital Twin initiative by managing and expanding the DestinE Platform's Data Portfolio, providing access to EO data through efficient data handling, storage,...

# FROM ACCESS TO BIG DATA PROCESSING

## POLYTOPE & DESTINE DATA LAKE



Destination Earth



- Federated access to multidimensional data
- Extract only what you need → Reduce data movement
- Supports low-latency applications

- Discovery, access, and big data processing
- Near-data processing → ML/AI-ready
- Federation with diverse external sources



# STREAMING AND CLOUD-OPTIMISED DATA

## DESTINESTREAMER & EARTH DATA HUB



Destination Earth



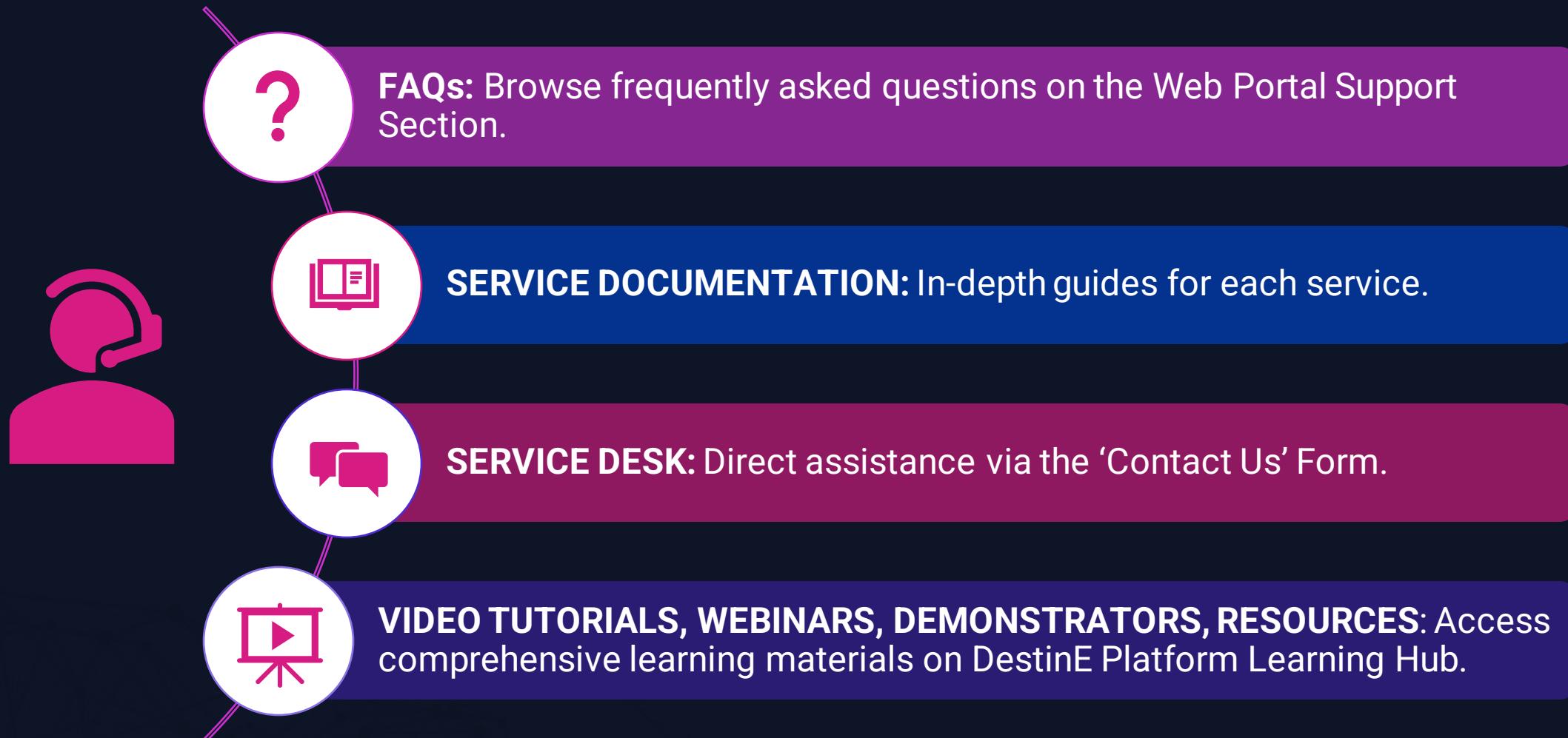
- In-browser big data processing
- WebAssembly + Compression for speed
- Trend curves in seconds

- STAC-compliant catalogue
- Zarr → cloud-optimised, analysis-ready
- Easy combination across datasets





- User-friendly big data analytics
- Trend analysis, anomaly detection, predictive modelling
- Real-time monitoring & Autoscaling
- Combine data & services for actionable insights





[platform.destine.eu/roadmap/](https://platform.destine.eu/roadmap/)

#### Public Roadmap

Submit Idea +

Community Ideas    Planned    Under Implementation    Released

### Key Sections:

- Community Ideas:** Submit your innovative ideas for new features and improvements. Your input directly influences our development priorities.
- Planned Features:** Explore detailed information on upcoming services, target implementation dates, and planned enhancements.
- Released Features:** Stay updated on recently launched services and functionalities, now live and in operation.

### Why it matters

Ensuring transparency and enabling continuous improvement based on user needs.

Community Ideas	Planned	Under Implementation	Released	
<b>Assets Catalog and Preview</b> SERVICE IMPROVEMENT User assets catalog with visual preview of assets. DEA Q1 2025	<b>External WMS Support</b> SERVICE IMPROVEMENT Include external WMS layers in public datasets. DEA Q1 2025	<b>Publish DeltaTwin Components in Private Mode</b> SERVICE IMPROVEMENT Colab+Atlantic DeltaTwin components generated artifacts shared with public visibility. DeltaTwin Q1 2025	<b>Share DeltaTwin Artifacts Publicly</b> SERVICE IMPROVEMENT Users will be able to share the generated DeltaTwin artifacts with public visibility. DeltaTwin Q1 2025	<b>New DeltaTwin Component for ERA5</b> SERVICE IMPROVEMENT A new DeltaTwin component will be added to collect ERA5 data. DeltaTwin Q1 2025
<b>Differentiate User and Community Data</b> SERVICE IMPROVEMENT The Web Interface is redesigned to differentiate between user data and data shared by the community. DeltaTwin Q1 2025	<b>User Resource Management</b> SERVICE IMPROVEMENT Limit the storage space and computing resources used by DeltaTwin components per user. DeltaTwin Q1 2025	<b>Scheduling for DeltaTwin Components</b> SERVICE IMPROVEMENT Add the ability to manage run scheduling for DeltaTwin components via the Web User Interface. DeltaTwin Q1 2025	<b>Private Key Generation for Third-Party Connection</b> SERVICE IMPROVEMENT Users can generate an API key from the SesamEO interface to authenticate and authorize product downloads from third-party applications. SesamEO Q1 2025	<b>Climate Data Integration</b> SERVICE IMPROVEMENT Integrate climate data into GeoAI. GeoAI Q1 2025
<b>OData Requests</b> SERVICE IMPROVEMENT Display of OData requests matching search criteria. SesamEO Q2 2025	<b>Cache-A Integration</b> SERVICE IMPROVEMENT Addition of Cache-A data provider, allowing users to search and download products. SesamEO Q2 2025	<b>User Journey Improvement</b> SERVICE IMPROVEMENT Deactivation of link copy until provider credentials are validated. SesamEO Q2 2025	<b>Digital Twin Collections Access</b> SERVICE IMPROVEMENT Restricted access to climate and extreme event datasets, available only to granted users with upgraded accounts. SesamEO Q2 2025	<b>Error Messages Improvement</b> SERVICE IMPROVEMENT Enhancement of error messages for better user guidance. SesamEO Q2 2025



### ENGAGE WITH DESTINE PLATFORM



**PARTICIPATION TO EVENTS:**  
Attend user exchanges, workshops, and conferences.

**USER FEEDBACK LOOP:**  
Share your insights and suggestions directly.



**CONTRIBUTE TO PUBLIC ROADMAP:**  
Submit ideas and influence future developments



**ENGAGE WITH LEARNING HUB:** Training, workshops, and resources to deepen your expertise.



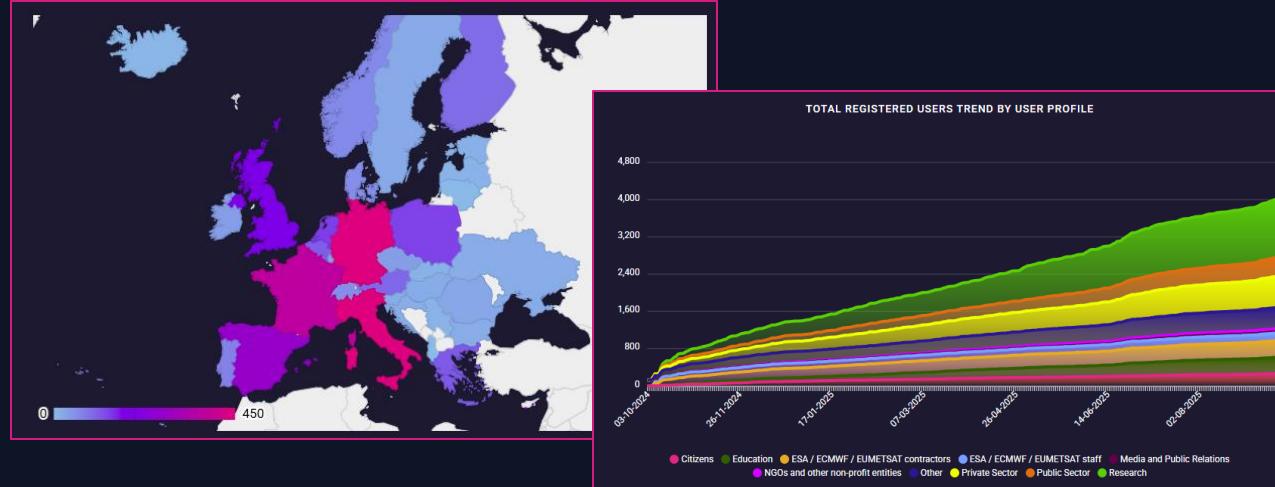
# THE DESTINE PLATFORM COMMUNITY GROWTH & THE ROAD AHEAD

## ENGAGING USERS ACROSS EUROPE AND BEYOND



Destination Earth

[platform.destine.eu/destine-platform-dashboard/](https://platform.destine.eu/destine-platform-dashboard/)



- Registered Users
- Visitors since launch
- Operational Services
- Service Onboarding Requests

### What's Next?

- Forum Launch → end of 2025
- Expansion → 54 onboarding requests
- Sustainability Metrics → Energy & Carbon reporting

Your engagement is key to shaping the future of DestinE.



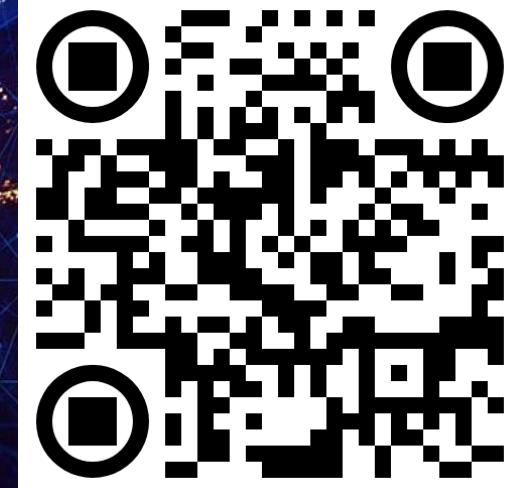
# DestinE Platform

Thank You!

**serco**



[platform.destine.eu](https://platform.destine.eu)



DON'T WAIT:  
REGISTER NOW  
AND BEGIN YOUR  
JOURNEY!

Destination Earth

Funded by  
the European Union



Implemented by

ECMWF esa EUMETSAT