The AI Revolution in EO data processing

From Earth Observation to Earth Conversation

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Observation Data Explosion: the Golden Age of EO

The Golden Age of Earth Observation

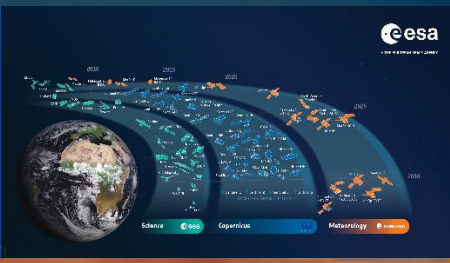
- **Volume** — unprecedented EO observations
- **Velocity** — new missions + faster refresh
- **Variety** — multi-sensor, multi-resolution, multi-domain

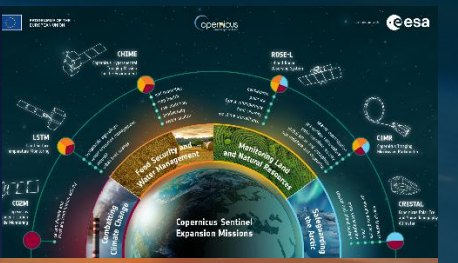
Complexity vs. Opportunity

- **Complexity**: legacy formats, heterogeneous interfaces, hard to combine, costly to exploit at scale
- **Opportunity**: holistic analysis → actionable intelligence; evolving representation (Planar to Spherical EO representation) → true global fidelity; superseding low level interface harmonisation with AI abstraction → true interoperability

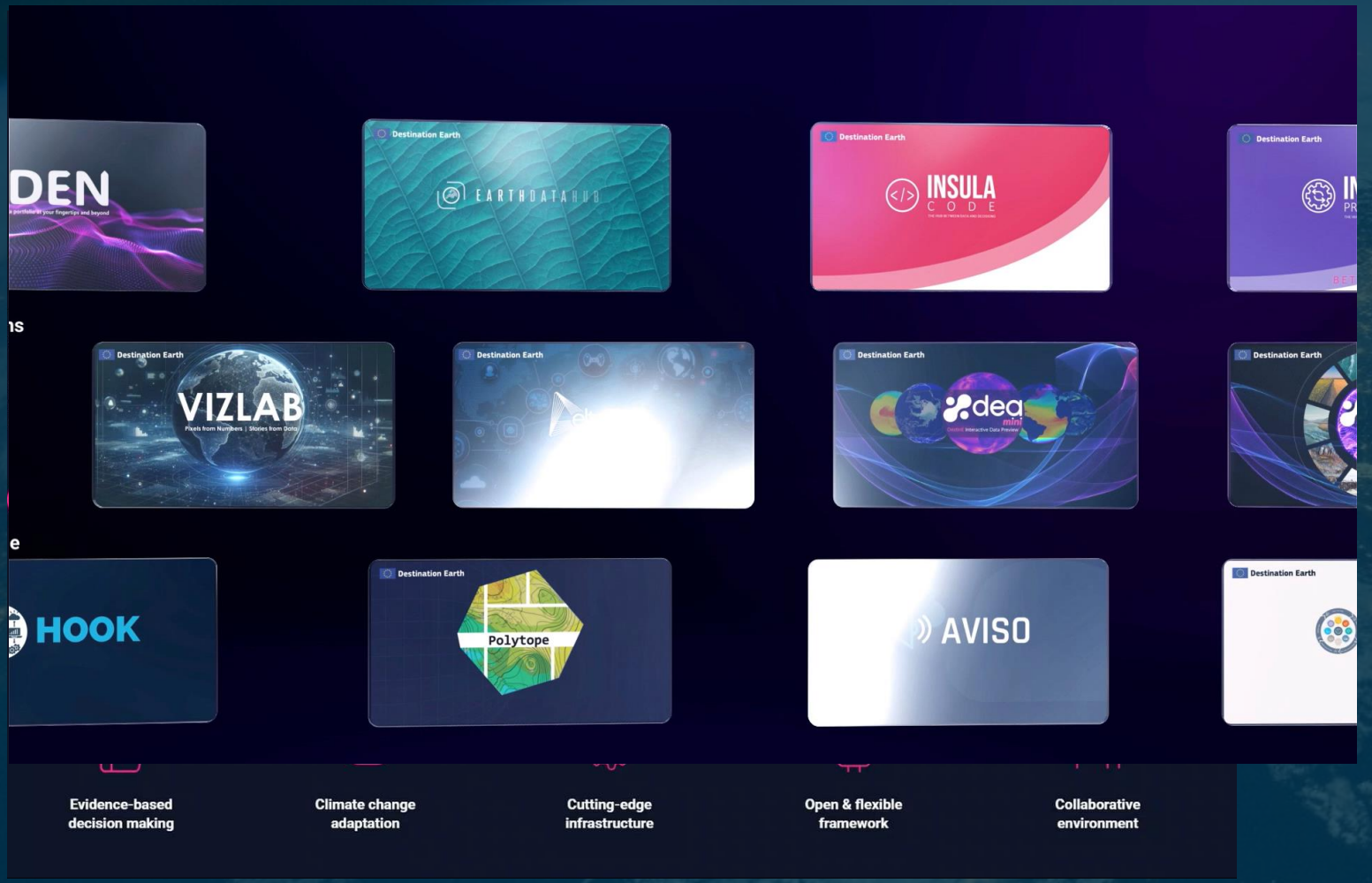
The Challenge

Abstract + Simplify + Democratise access (for policy, industry, academia —not only EO experts)





From data to services: what users can already experience – DestinE example



The DestinE Platform represents a **flexible ecosystem of services** allowing to discover DestinE data and exploit them locally through:

- A catalogue of applications to support climate actions
- AI frameworks available as a Service,
- A continuity with Copernicus, one of the largest existing EO system, and
- Scalable services fostering the upscaling by Industry.

platform.destine.eu

… and growing …

From data to services: what users can already experience – DestinE example

GeoAI (DestinE)

Flexible: train AI models for your specific EO use case (detection or segmentation) and apply them to similar objects.

Works across EO data diversity: supports various resolutions, image types, and sensors.

Accessible: no-code — users can create & deploy models without AI / geospatial expertise.

Built on DestinE data portfolio (e.g. DestinE Climate Adaptation DT datasets), including Copernicus Sentinel-2 Level-2A MSI.

Operated by FlyPix AI.

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From data to services: what users can already experience – DestinE example

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DEA (DestinE Storytelling) Copilot

No-code: create interactive data stories to make EO/climate/statistical data accessible to non-expert users.

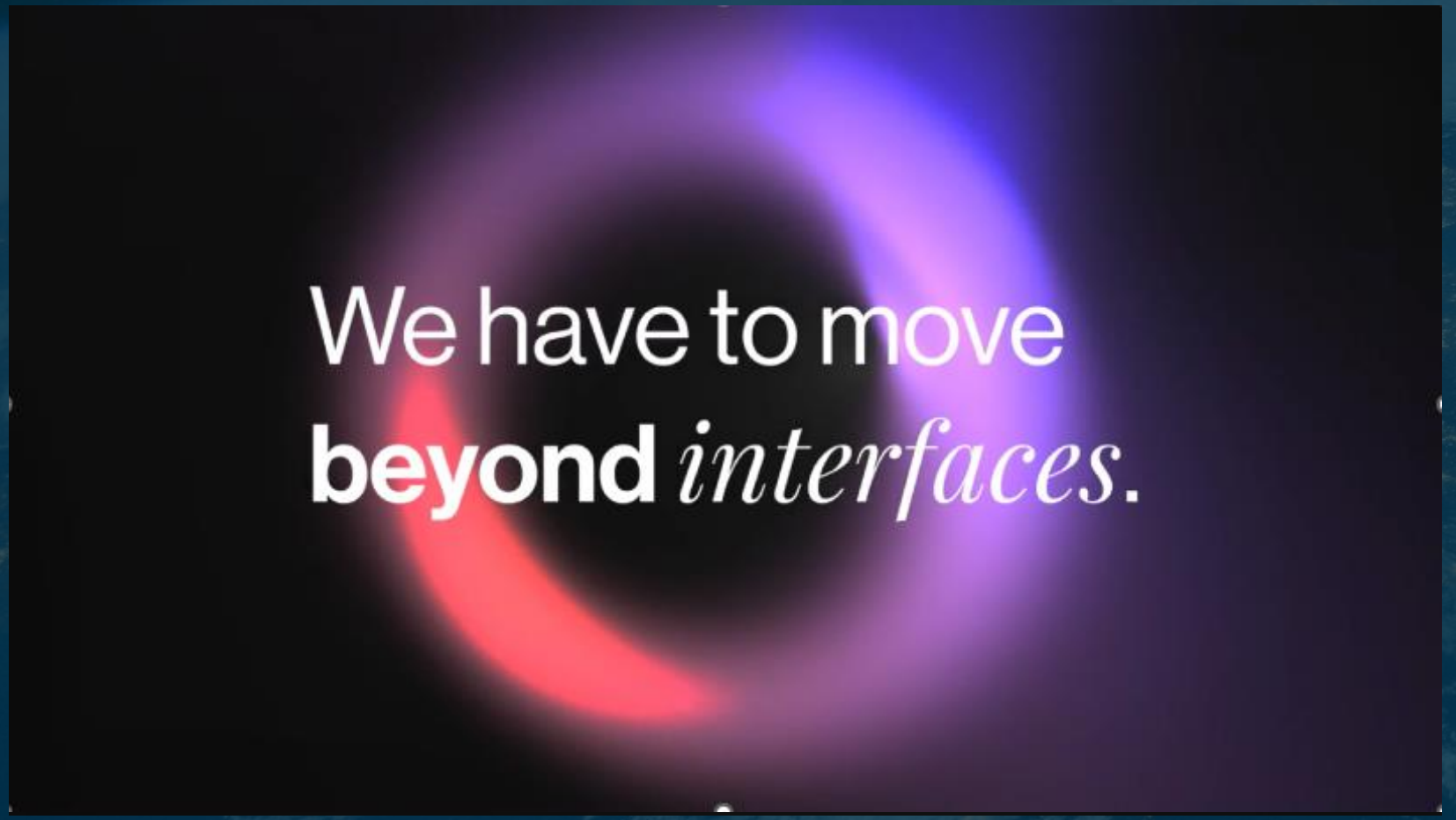
DEA Copilot / AI Assistant: users can **create sample stories using natural language** directly from the DEA landing page via **"Ask AI"** (sign-in required).

Multimodal prompting: choose a suggested prompt, type, or use voice; then visualize or edit the generated story.

Coming: Ask → Analyse → Insert

Operated by Alia Space System

From data to services: moving beyond interfaces
DestinE example



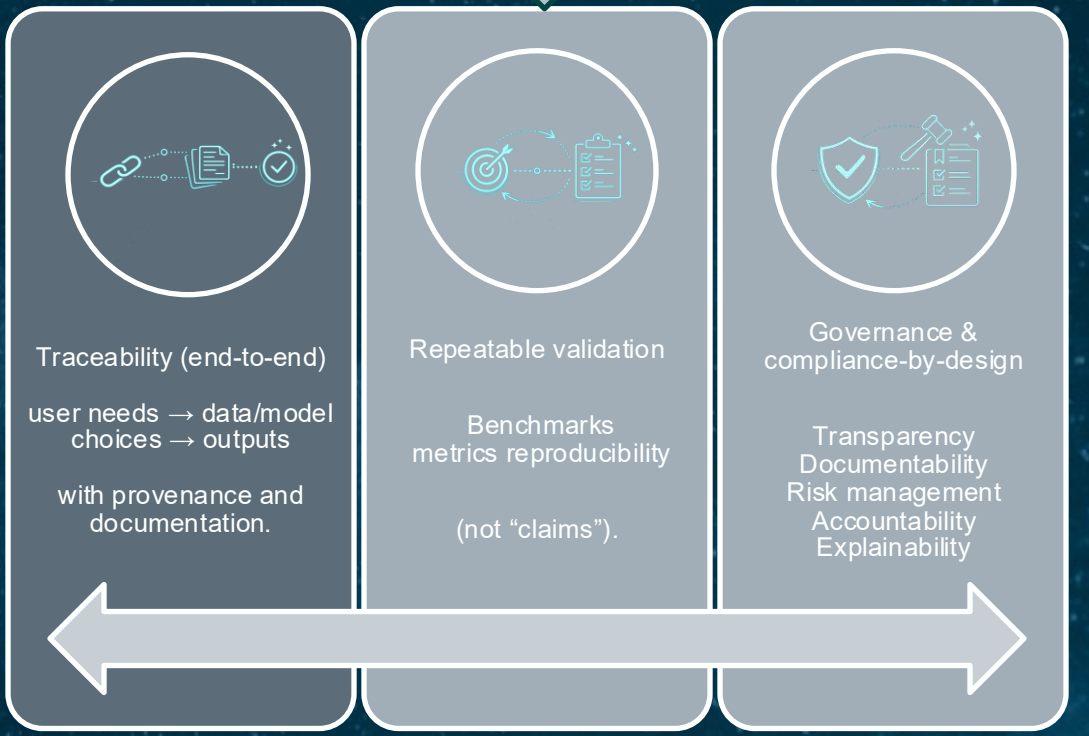
DEA: What is next?

Connect → Ask → Analyse → Insert

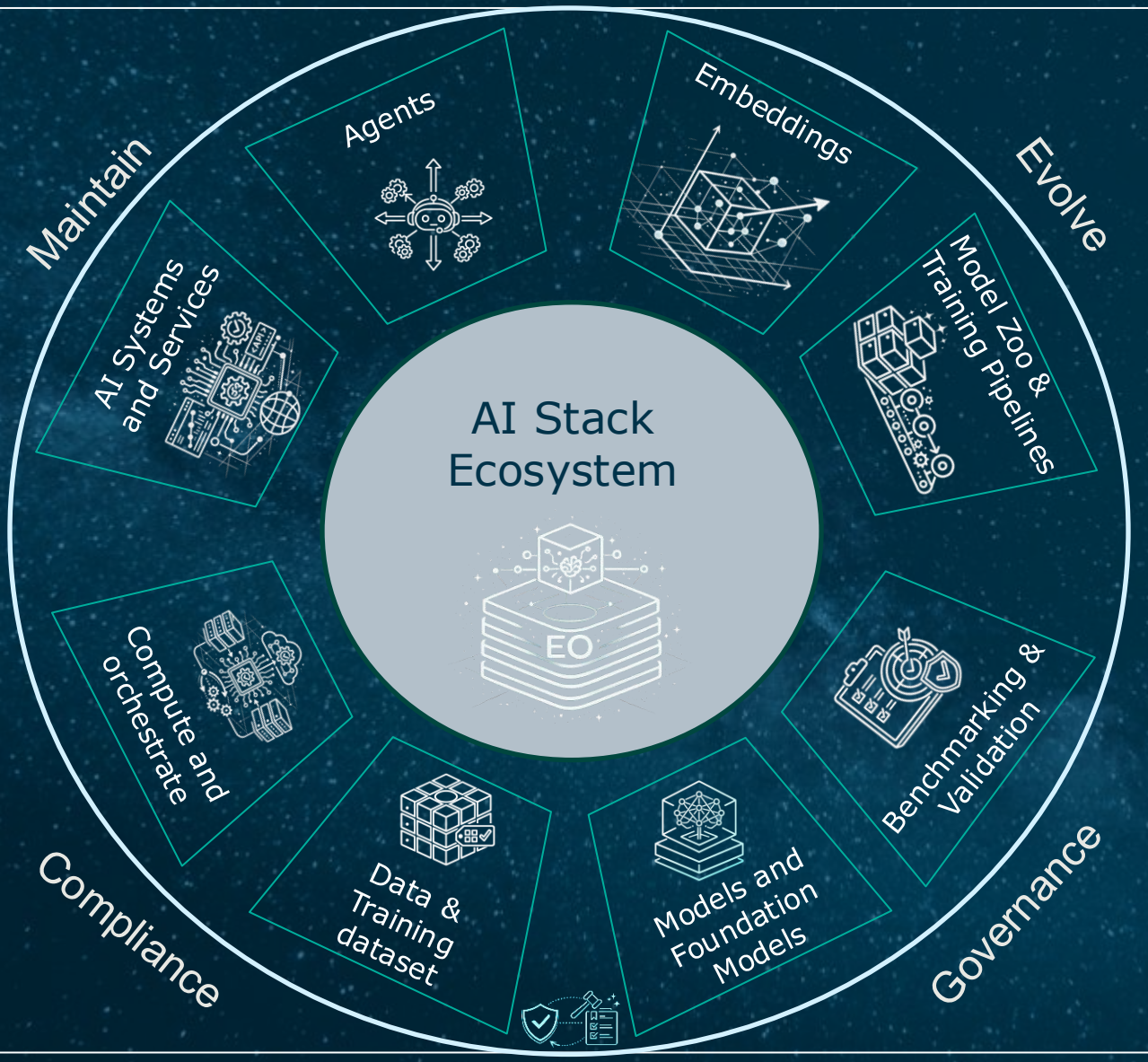
The Trust Hurdle: From Data to Reliable AI Services

How do we move from raw EO data to AI-based services that European citizens and public authorities can trust?

We are moving from “ai pilots” to decision workflows — trust becomes the bottleneck.



The “AI Stack Ecosystem” view



A coherent EO AI stack to build, deploy and scale trusted services — bridging innovation to industrial operational services through reusable, interoperable and integrated assets

From Principles to Action: “Apply AI” for EO Industrial Services

How do we translate “AI-first, building on European solutions” into concrete actions that empower EU industry to deliver trusted AI operational services?

There is no single “magic answer”.
We need a **dynamic collaboration among all stakeholders**, and we must **measure impact and adjust course** as we scale trusted services.

A marathon, not a sprint

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