SPACE4CLIMATE BRIEFING

THE VITAL NEXT STEP FOR DECISION-GRADE GEO-AI: TRUST ME!

SUMMARY

Despite demand for decision-grade environmental intelligence rising rapidly, a gap remains between what Geo-AI can do and what institutions are ready to trust. Implementation of shared standards - around definitions, methodologies or validation - is essential to ensure this intelligence is relied on to the extent it is embedded in routine decision-making.

Across finance, infrastructure, agriculture and public policy, asset owners want to understand exposure to a wide range of geography-related risks, from physical climate and nature-depletion risk to geopolitical risks, for national resilience and security. Data from space, combined with AI, promises global coverage of Earth, repeatability and objectivity at a scale no other system can provide. Technical capability is no longer in question, the UK has some of the best climate science in the that can help build the data and models necessary – the key challenge is to build trust in the decision-support information they produce.

AI-generated illustration

Trust must be engineered into systems from the outset

Decision-makers need to understand provenance, uncertainty, robustness and relevance of Earth Observation (EO)-based intelligence to their specific context. The question is no longer *"Is the data innovative?"* but *"Can we stand behind it?"* Verifiable provenance, transparency about processing steps and mechanisms to detect interference or distortion are prerequisites, not optional extras. Without trust, widespread organisational adoption of EO Intelligence will be impossible, especially given the cultural and workflow changes required if confidence in improved outcomes cannot be demonstrated.

The next chapter of Geo-AI will be written not just in orbit, but in boardrooms, ministries and financial institutions on the ground. The challenge, and the opportunity, lies in ensuring that the intelligence we now have, can deliver the impact we urgently need.

"Earth Observation and AI are turning climate from a background concern into a market fundamental"

– **Kirthi Gogulamudi, CEO of** NetZero Protocol

The opportunity for the UK is significant

Earth Observation-based intelligence, combined with AI, has the potential to become routinely embedded in core infrastructure for national resilience, national security, sustainable finance and environmental stewardship. When satellite-derived intelligence influences multi-million-pound decisions, the standards by which it is judged necessarily change: as climate and nature intelligence become more tightly coupled to regulation and disclosure, expectations around auditability increase.

Scaling impact depends as much on governance and coordination as on innovation.

The UK has some of the best climate science in the world here that can build the data and models necessary. Driving standardisation and investing in development of robust, scaleable systems for ability and comparability will place the UK at the heart of AI-driven satellite intelligence on the world stage. This, in turn, will drive economic growth across not only the space sector, but also financial institutions, infrastructure, agriculture and public policy.

> "The real breakthrough isn't the volume of Earth Observation data, it's our ability to turn that volume into reliable, decision-ready estimates of physical climate risk at speed and scale. AI makes that translation possible"
>
> **– Dr James Brennan, Director of Science at** Climate X

Key messages

- Trust by design: provenance, transparency and verifiability must be built into systems, such as decision-support models, from the start.
- Decision relevance first: intelligence must be framed around how institutions actually act, not just what can be observed.
- Institutional readiness: recognition among researchers, service and product developers that adoption depends on governance, skills and accountability, not just data.
- Collaboration over fragmentation: shared frameworks and dialogue will enable comparability and confidence.

Read more: This briefing is shaped by Space4Climate's panel at GEO Business 2026 'Orbit to Impact: Scaling AI-Driven Satellite Intelligence'.

About Space4Climate

Space4Climate is a not for profit, cross government, academic, and industry community enabling the UK to turn satellite based data and climate intelligence into economic benefit and policy impact. We convene organisations across the value chain, from research to commercialisation, to accelerate innovation, capability development and resilience.

Our Mission: To drive adoption of robust, trusted satellite Earth Observation technology and derived services, fuelling commercial growth, boosting national climate resilience and delivering societal and environmental value through a united UK EO industry, research and policy community.

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