

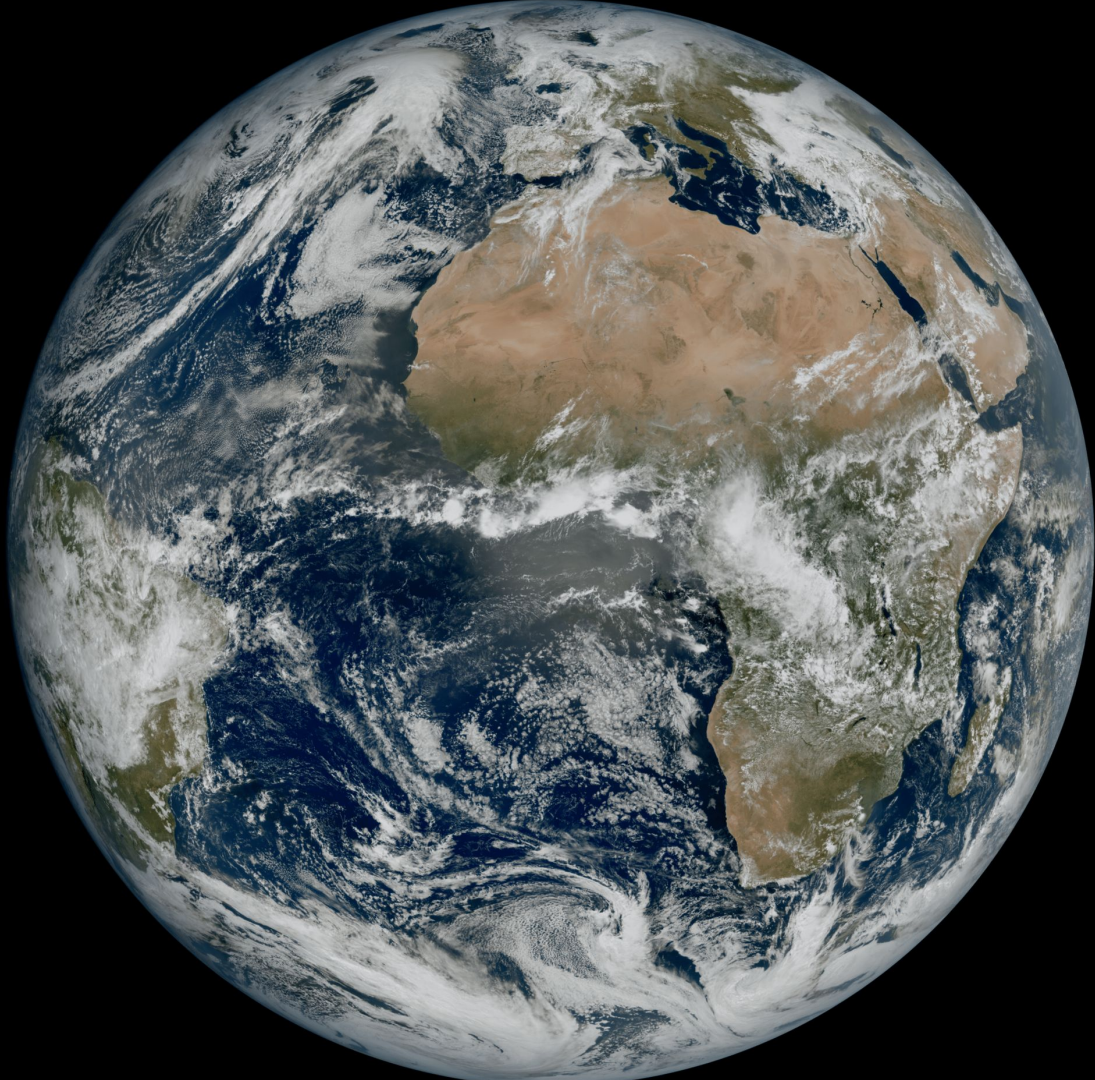
The Future of Weather: Platformization, AI, and the Public-Private Convergence

September 18, 2025



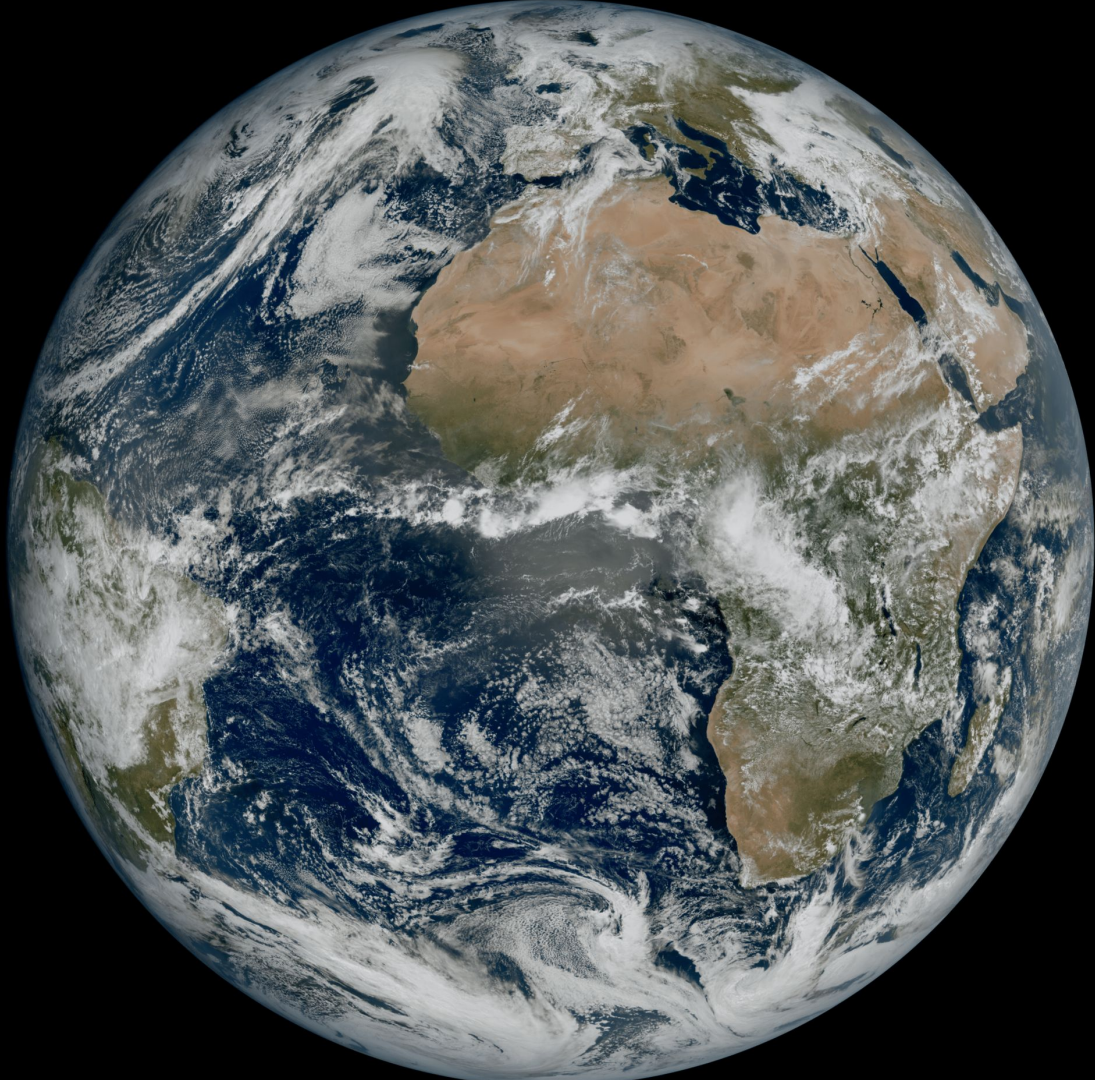
TERRAWATCH
SPACE





Agenda

1. About TerraWatch
2. Weather Value Chain
3. Commercial Weather Sector
4. AI: The Future of Forecasting
5. Platformization of Weather
6. Final Thoughts



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1. **About TerraWatch Space**
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TERRAWATCH
SPACE



Making Earth Observation Mainstream

Knowledge, Insights, and Advisory
on Satellite Data and Applications

Independent research and advisory focused on Earth observation

Supporting public and private organisations on strategy, commercialisation, and applications of satellite data for weather, climate, and environment

STRATEGIC ASSESSMENTS

- Strategic roadmaps & future trends
- Competitive positioning and market analysis
- Go-to-market and business model analysis

INSTITUTIONAL ENGAGEMENTS

- Economic valuation & societal impact studies
- Policy and procurement strategies
- Public-private partnerships and commercialisation

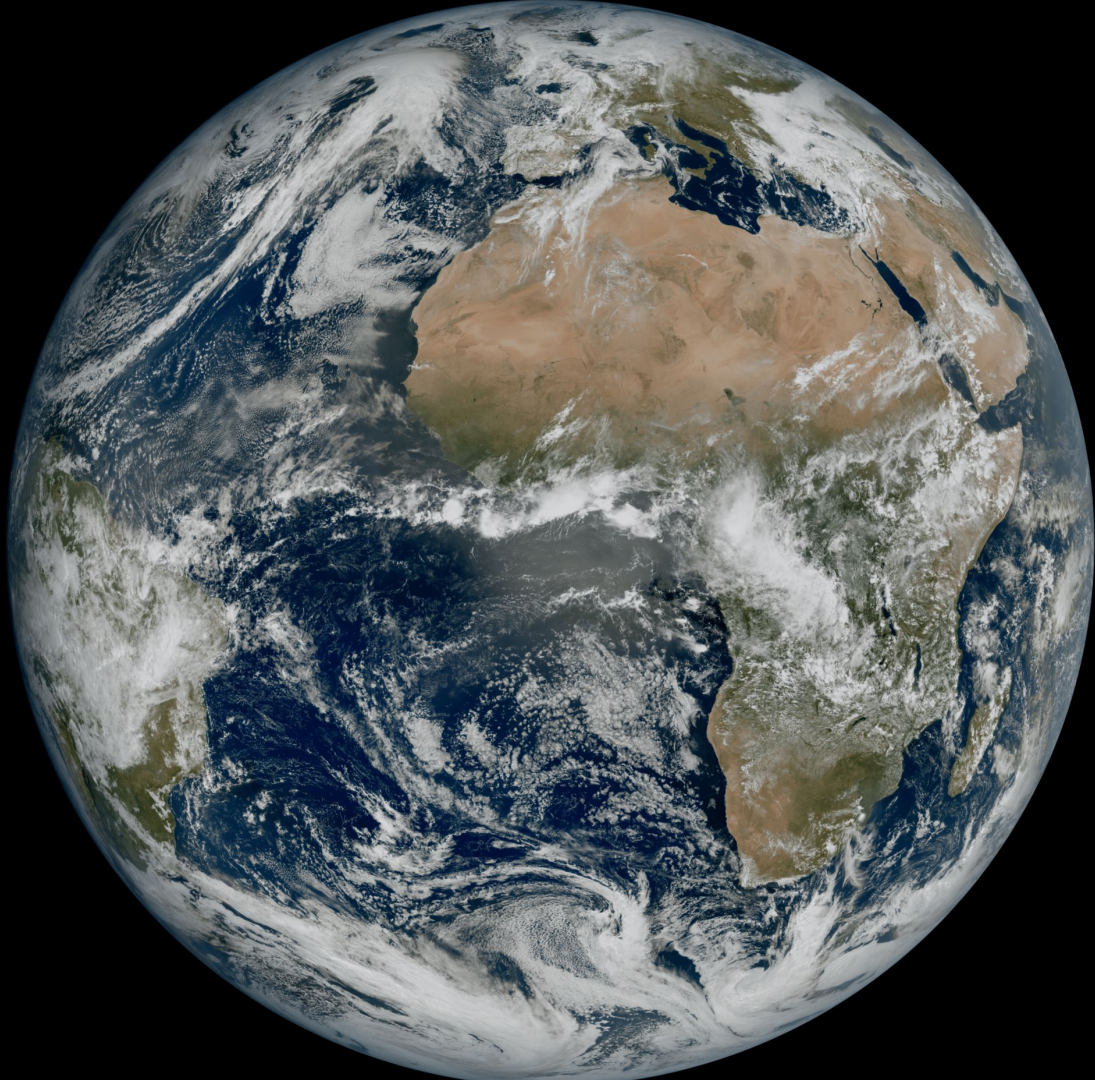
MARKET INSIGHTS

- Market trends and commercial landscape
- Contracts, budgets and investment tracking
- Sector-specific applications (energy, insurance, agri etc.)

WORKED WITH



AND MORE....



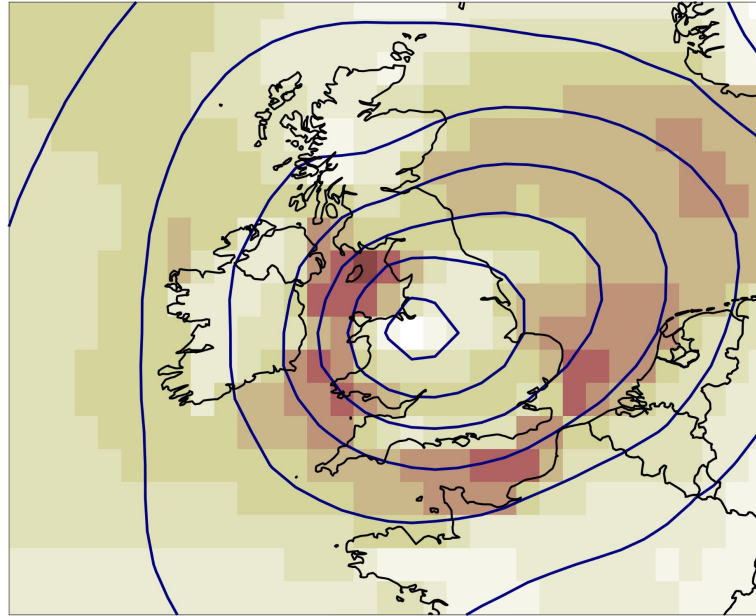
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From This ...

Robert Fitzroy's One-Person Forecasts

Reanalysis for 9am on 26th October 1859

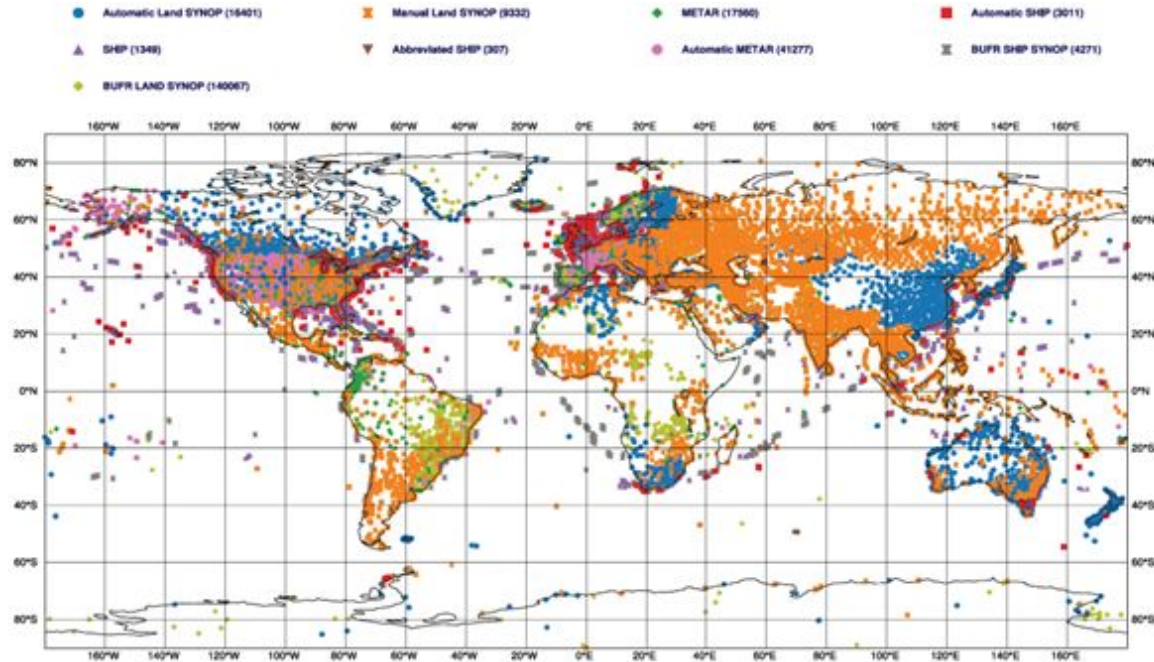


Sea level pressure (contours) and wind speed (colours)

Credit: [Ed Hawkins](#)

... To This ...

A Global In-Situ Observing System



© 2025 European Centre for Medium-Range Weather Forecasts
(ECMWF)
Source: www.ecmwf.int
Created at 2025-06-02T10:49:36.789Z



Credit: ECMWF

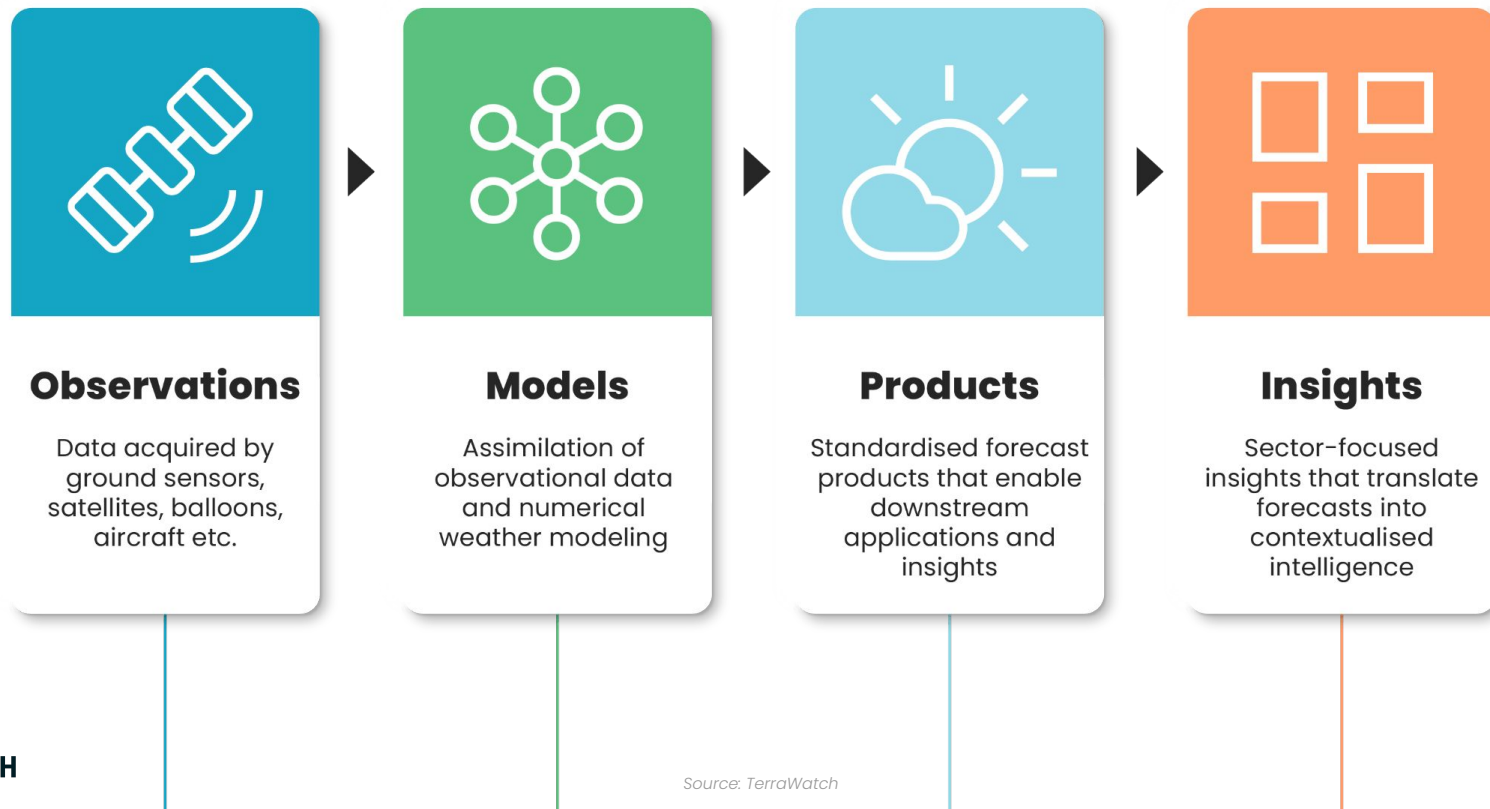
... And This!

A Global Space-Based Observing System



Credit NOAA

The Weather Value Chain



Powering a Variety of Use Cases



Government

Disaster management
Early warning
National security



Insurance & Finance

Catastrophe risk
Parametric insurance
Portfolio risk



Agriculture & Forestry

Crop yield forecasting
Irrigation
Wildfire risk



Energy & Utilities

Renewables forecasting
Energy trading
Asset risk



Transport & Logistics

Aviation safety
Shipping routes
Supply chain



Retail & Consumer Goods

Demand forecasting
Inventory planning
Marketing



Construction & Infrastructure

Project planning
Worker health



Media & Consumer Applications

Weather apps
Event management

The Future of Weather

The Three Pillars



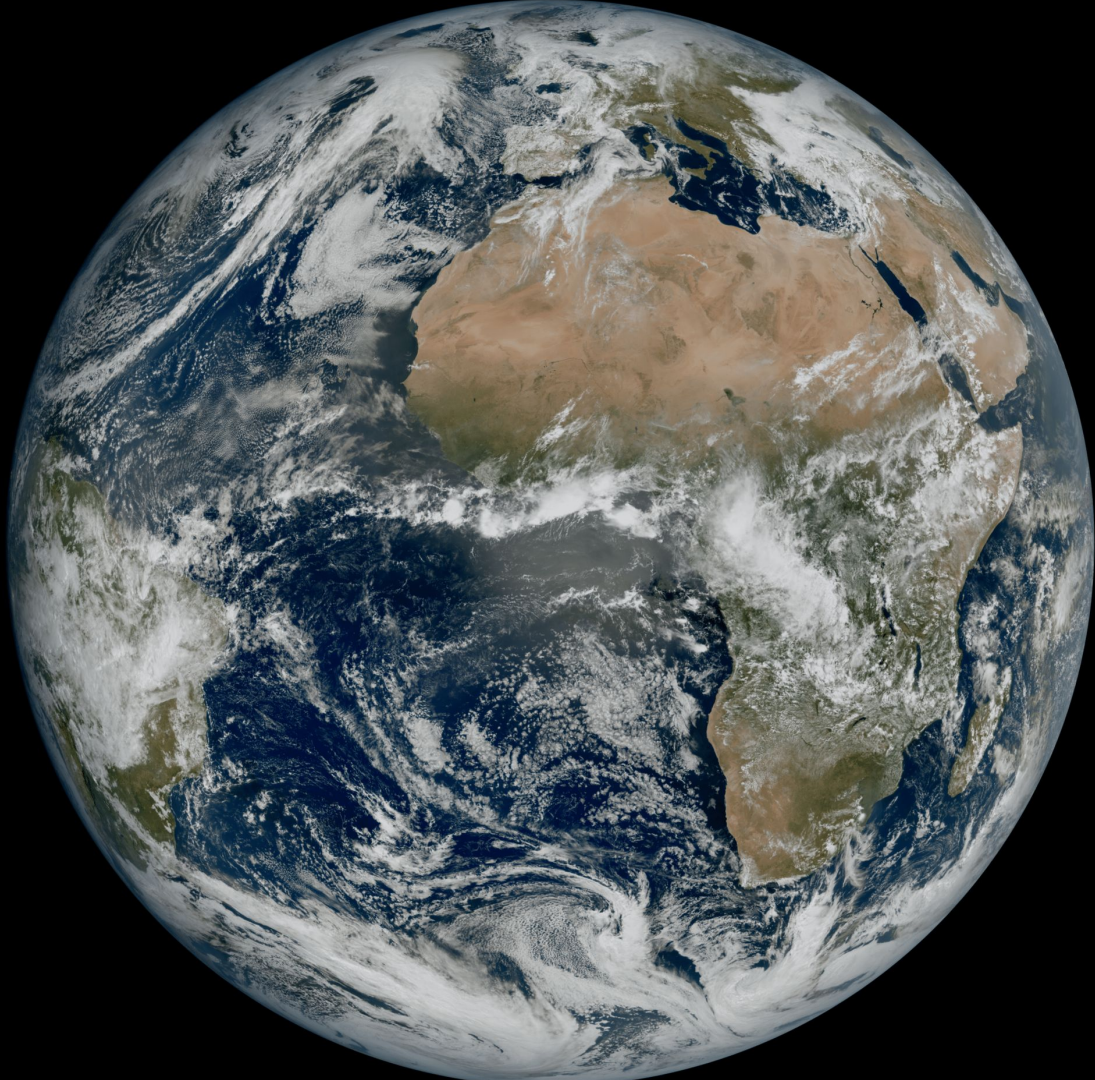
**Commercial
Satellites**



**Artificial
Intelligence**



Platforms

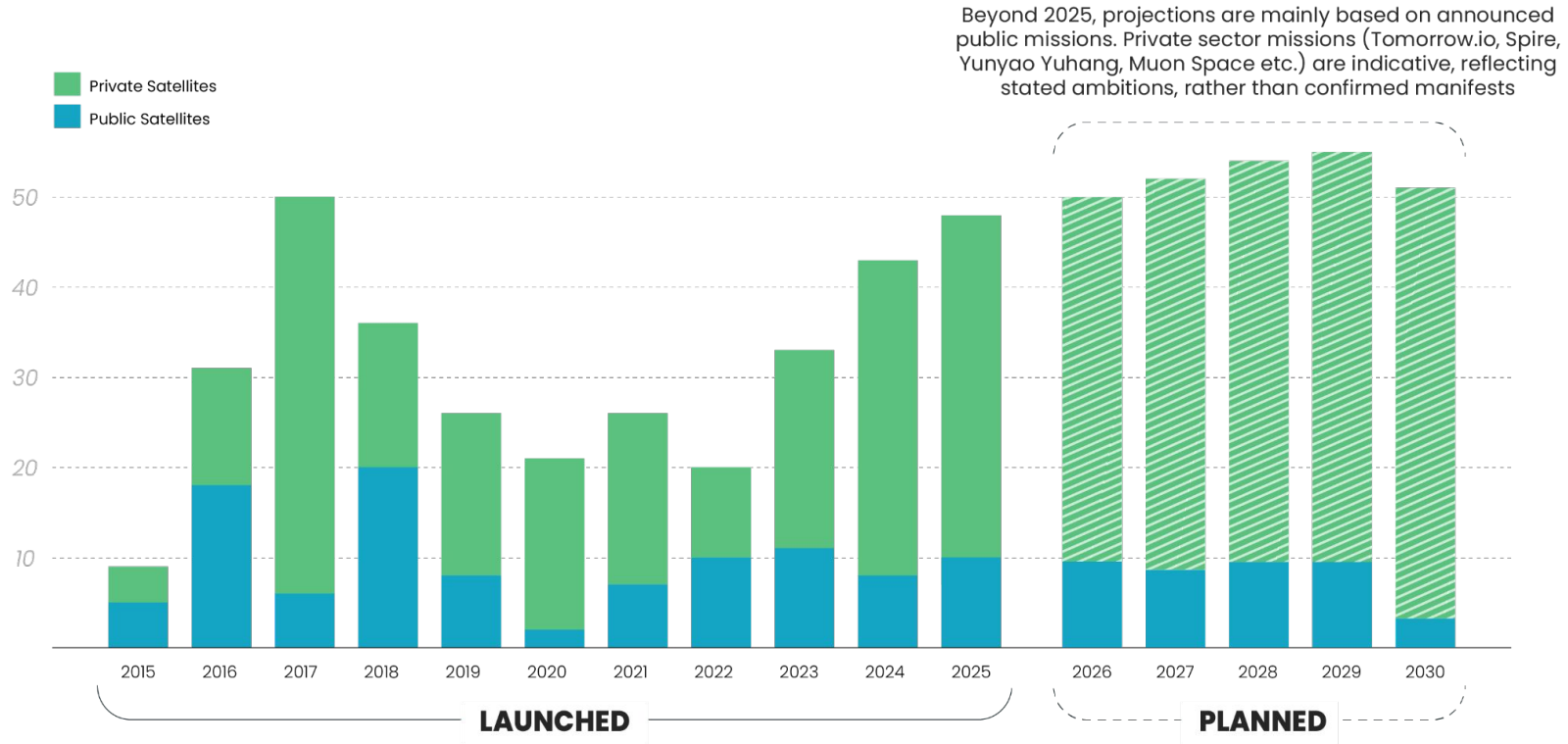


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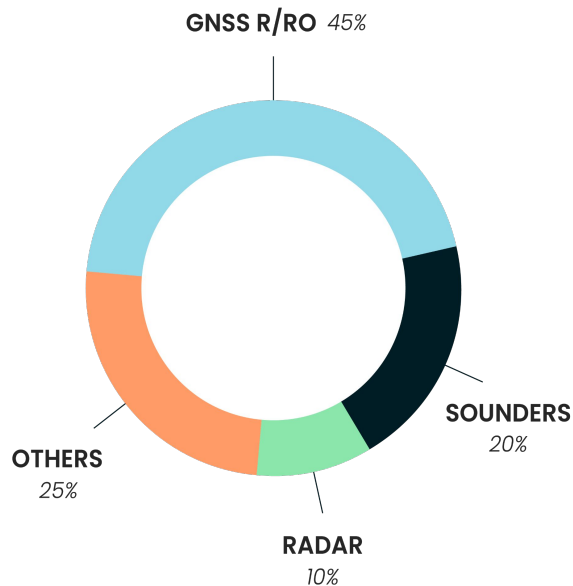
Growth of Private Weather Satellites ...

While Publicly Funded Missions Continue



Planned Instruments by Private Sector

An Overview of Commercial Data Sources



Dominance of GNSS-RO

Forms nearly half of private missions, showing where commercial uptake is strongest as it is low-cost, scalable, and directly usable in NWP models (NOAA contract)

Emerging Instruments: Sounders & Radars

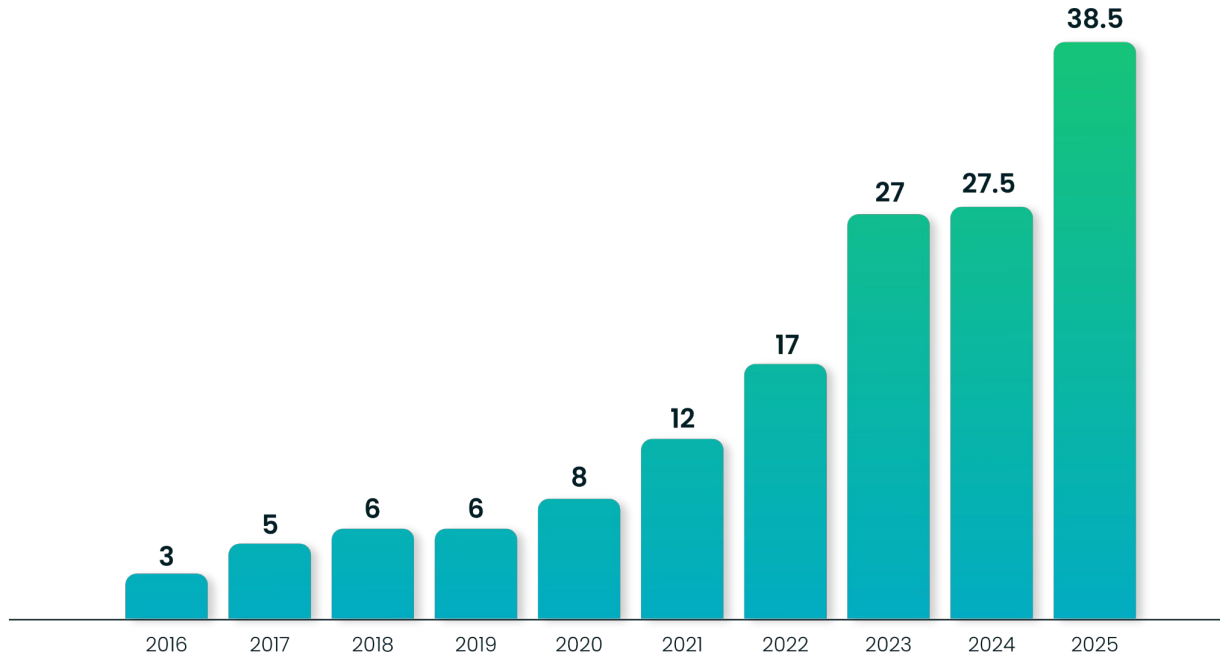
Private players moving into higher-value data offering richer vertical profiles – while technically complex, slowly gaining traction (NOAA pilots)

Towards Multi-Sensor Constellations

Private constellations no longer single-sensor, companies are investing in covering multiple measurement types to both satisfy needs of met agencies but also commercial users

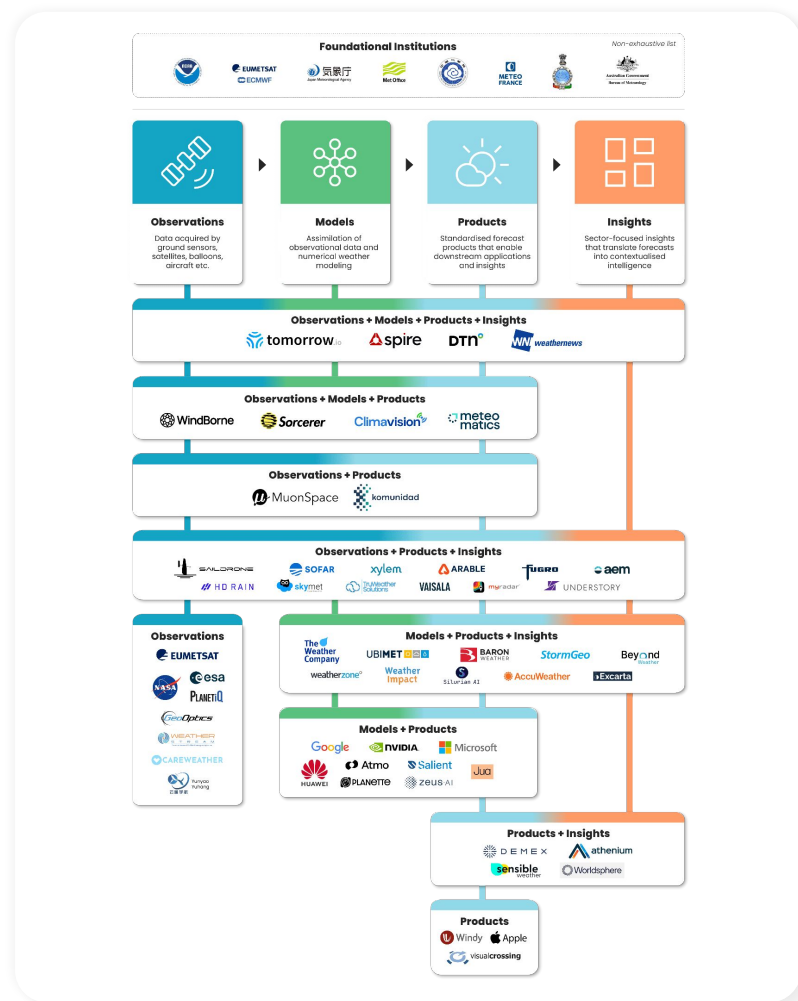
Commercial Data Buys Continue to Grow

Total Budget for NOAA Commercial Data Program

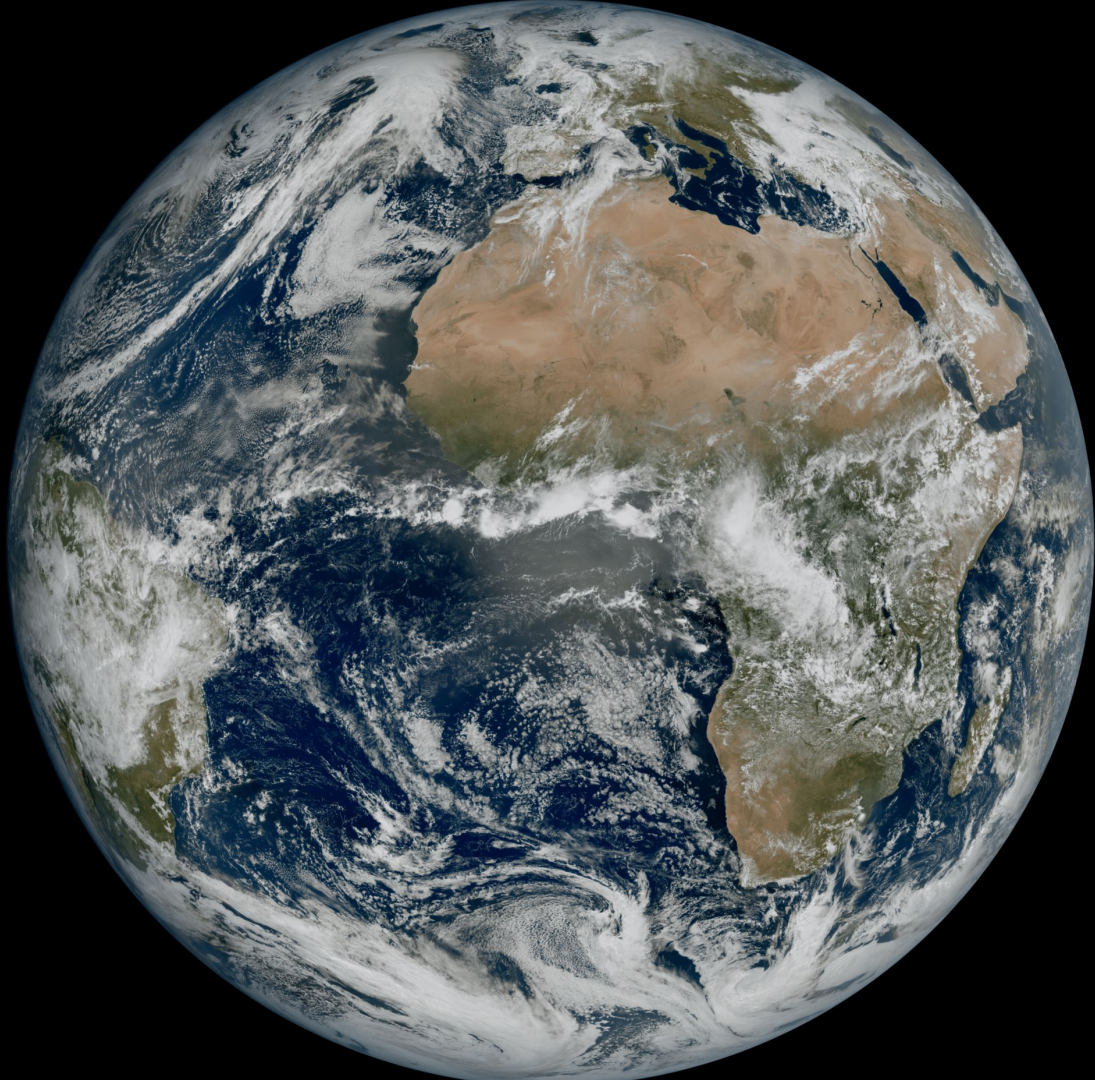


Weather Market Landscape

*The Weather Market Is More
Fragmented Than Ever Before*



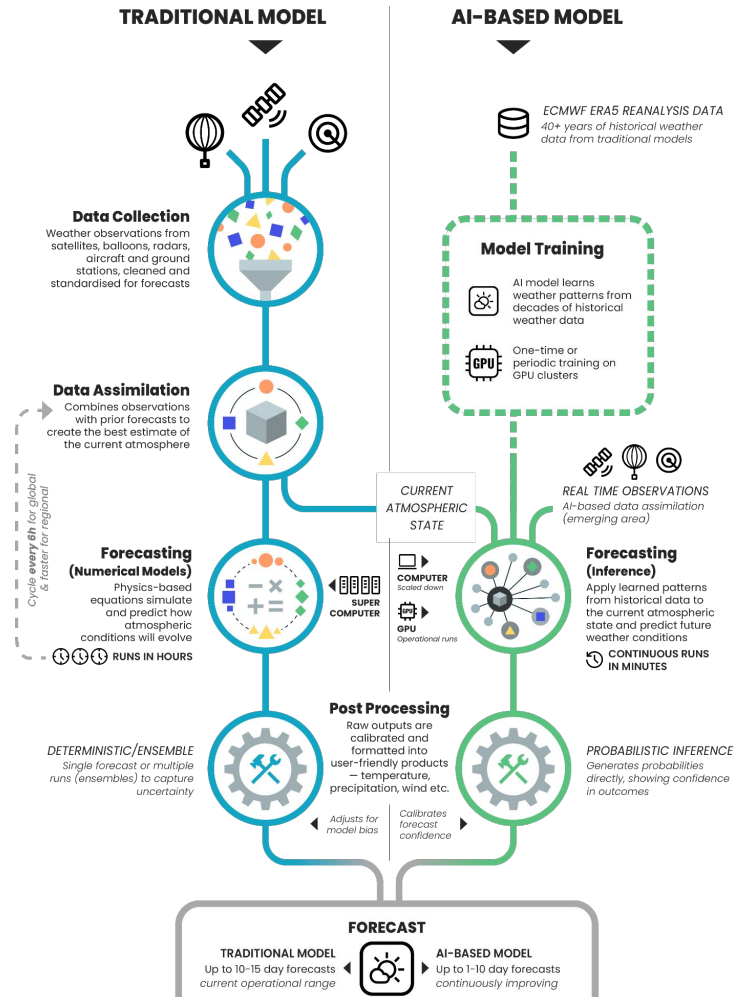
Source: TerraWatch



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AI Weather Models Continue to Advance



ECMWF: The Pioneer in AI Weather Models

First to operationalise AI in weather forecasting



Limits and Open Questions



INTEGRATION

How do AI models fit into
NWP-driven ops, data
assimilation, workflows?



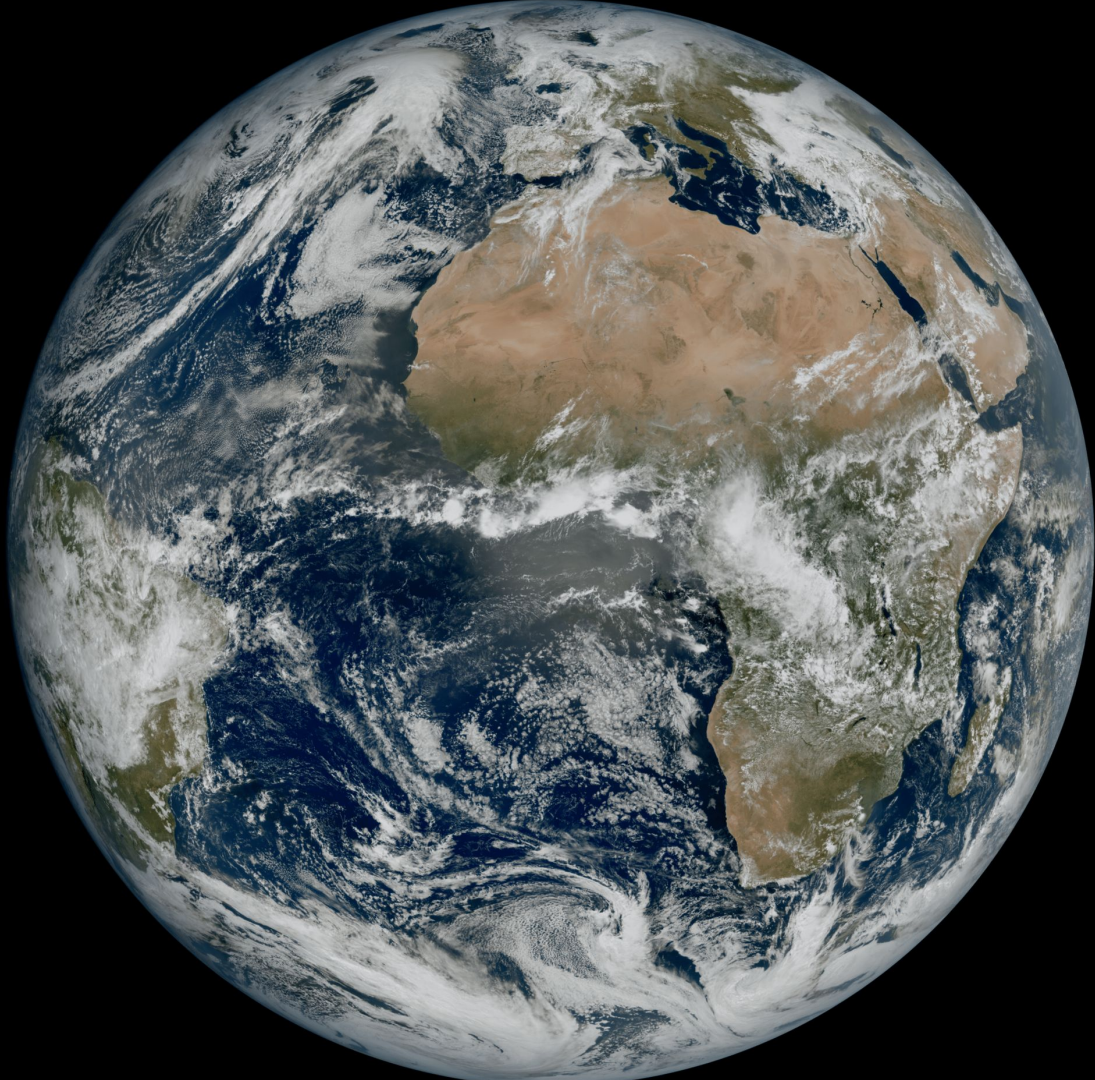
TRUST

Can AI forecasts earn the
same trust built over
decades for NWP?



GOVERNANCE

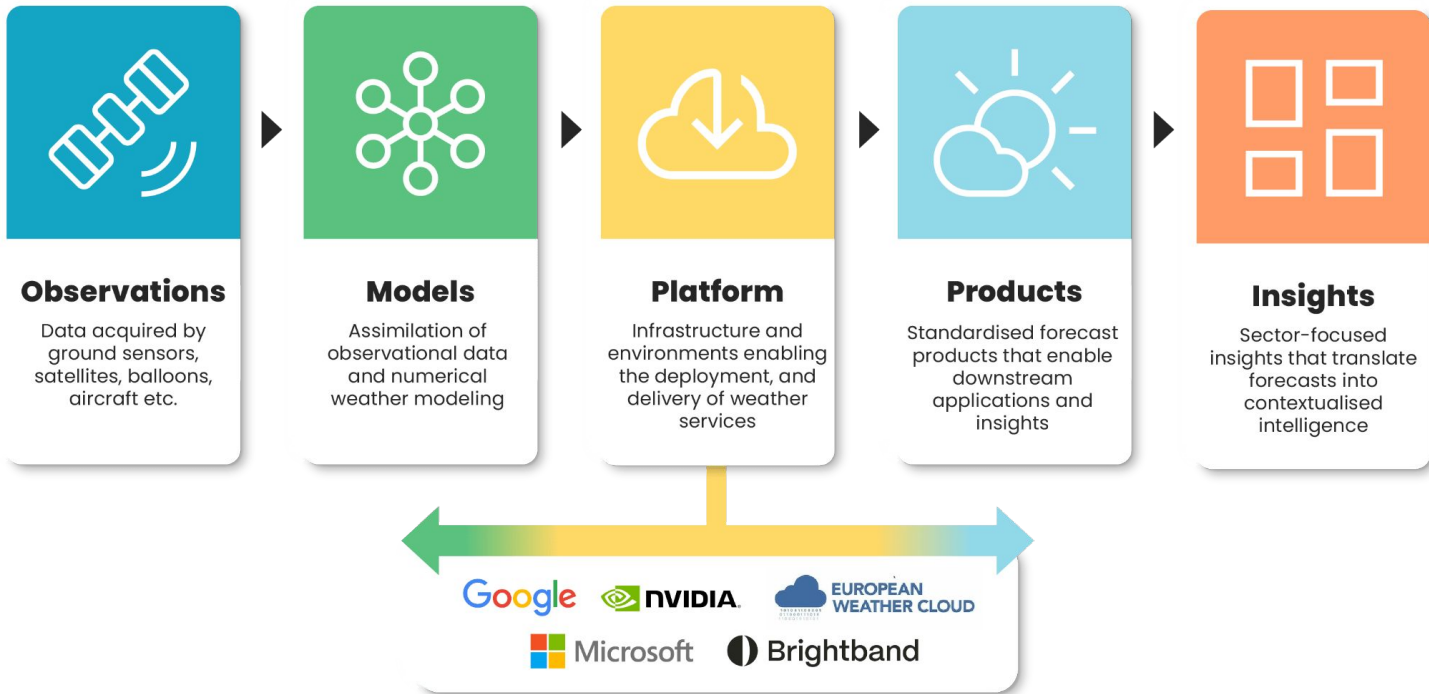
Who owns, regulates, and
shares AI models/data
globally?



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A New Paradigm is Emerging – Platforms



Platforms provide access to compute and proprietary models, making forecasts on-demand and customizable. They transform weather into a service layer that can integrate into existing workflows

The Platformization of Weather

Why are Microsoft, Google and NVIDIA Investing in Weather Models?

Model + Infrastructure Integration

Bundling proprietary models with compute environments, e.g., GraphCast on Google Cloud, Earth-2 on NVIDIA

Enabling Data Assimilation

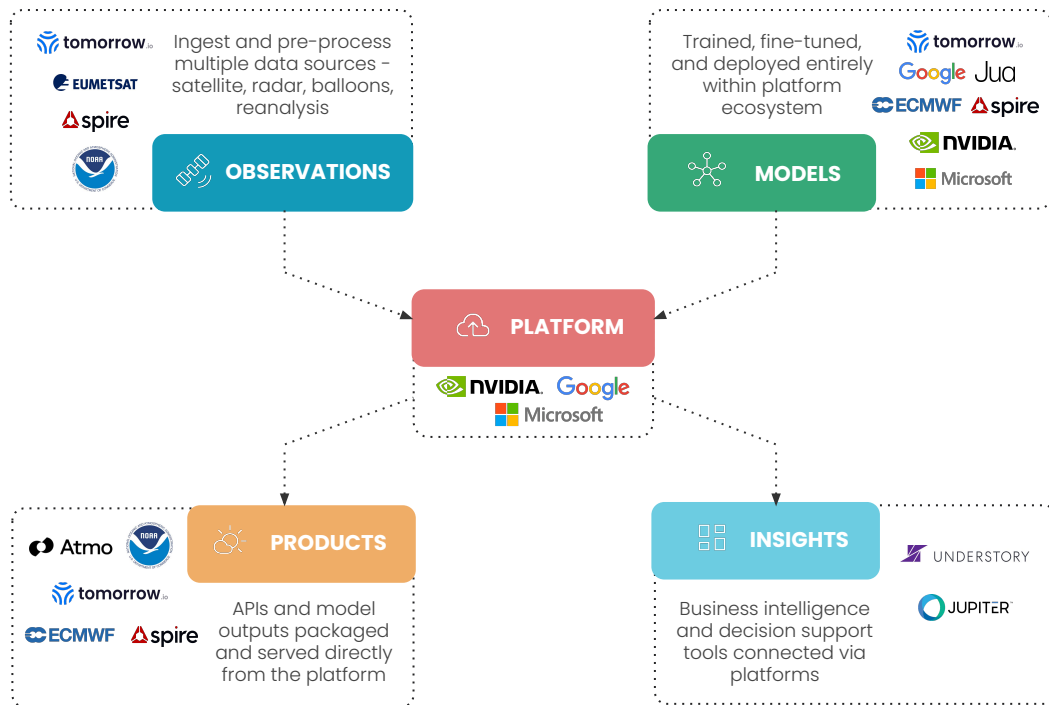
Support ingestion and fusion of weather observations solving a long-standing gap

From Infrastructure to Insight

Facilitate weather modeling and delivery of forecasts, APIs, and decision-support tools directly to end users

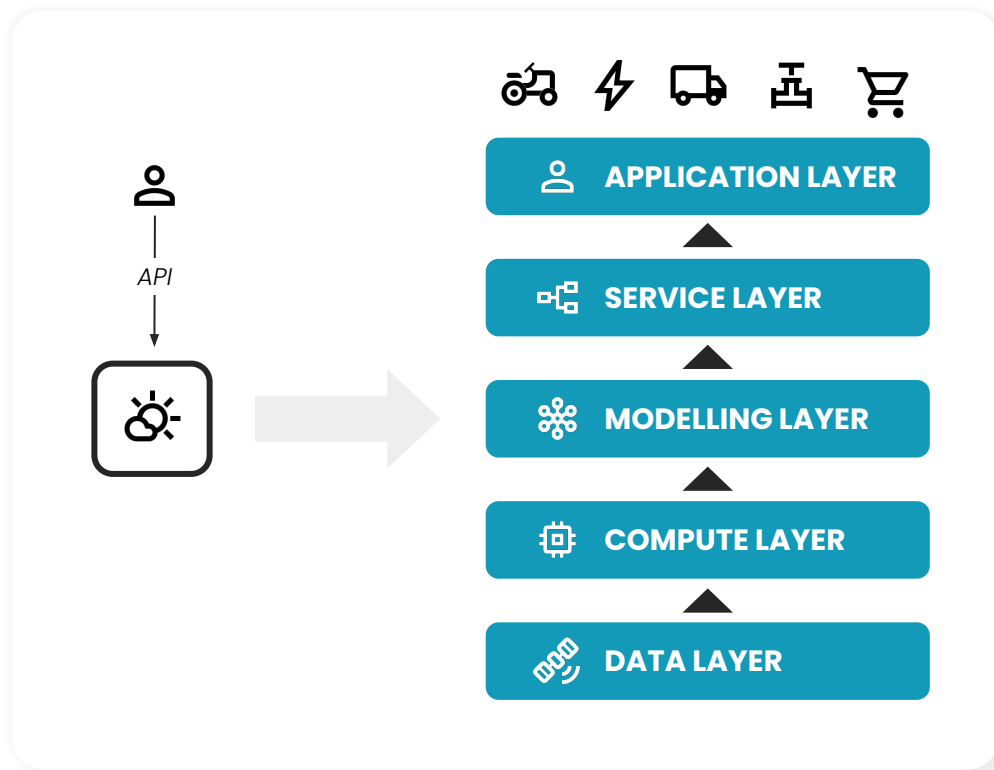
Full-Stack Adoption

Integrate data, models, compute, and delivery, reducing friction and making it easier to stay within one ecosystem



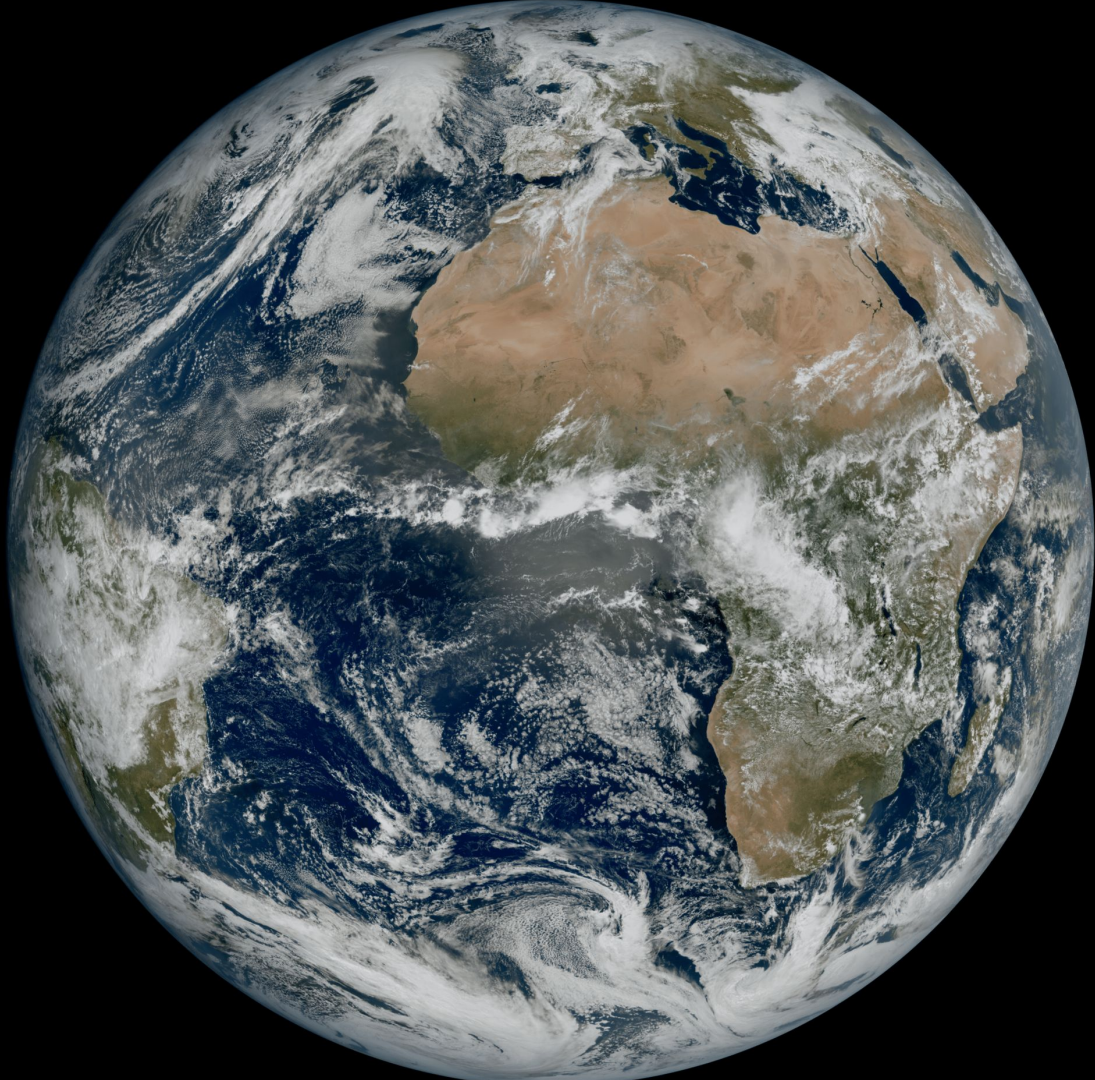
Towards Making Weather an Infrastructure

From Forecasts to Workflows



- From accuracy to infrastructure
- From information to platform → maps (Google Maps), payments (Stripe), data warehousing (Snowflake)
- Weather as a service, embedded into user workflows

"Weather is no longer a standalone output, it is part of a bigger technological stack for enterprises"



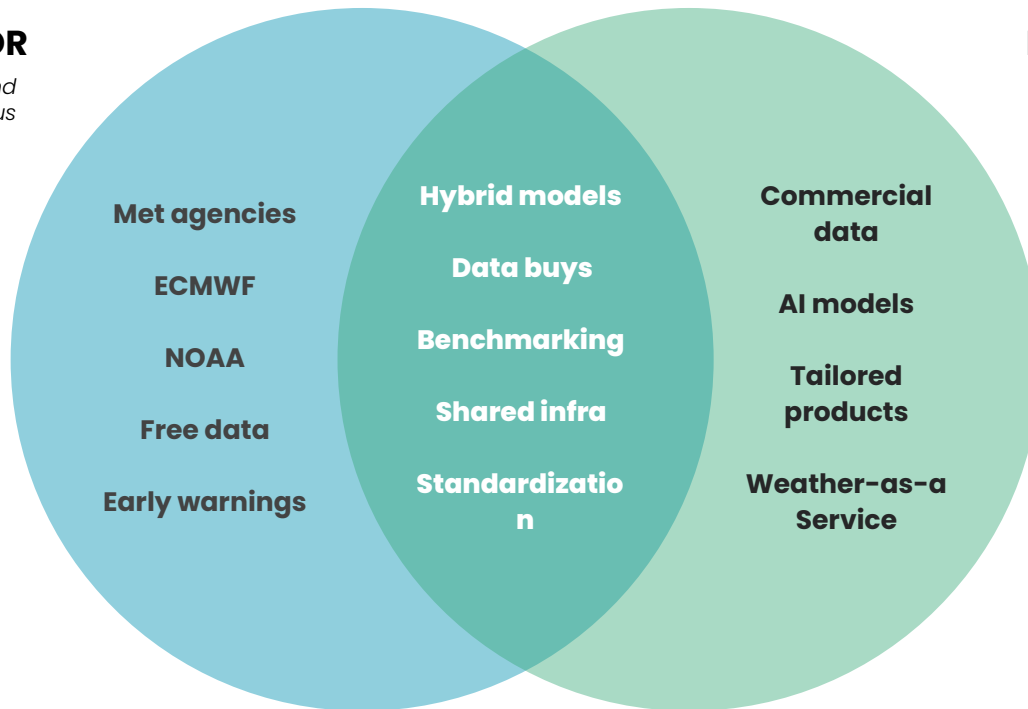
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Future of Weather: Coexistence & Convergence

PUBLIC SECTOR

Public good, reliable and continuous



PRIVATE SECTOR

User-focused, fast and customisable

Thank you!

aravind@terrawatchspace.com

