



RAINBOW.AI



METEOROLOGICAL TECHNOLOGY WORLD EXPO 2026

Weather intelligence for decisions that cannot wait

Global, high-resolution weather intelligence for faster operational decisions - with minute-by-minute precipitation nowcasts, developer-ready APIs and enterprise deployment options.



PRECIPITATION NOWCASTING

MAP-READY WEATHER LAYERS

WILDFIRE DETECTION

SEVERE WEATHER R&D

From observation to operational intelligence

A hardware-agnostic AI layer that turns heterogeneous atmospheric data into decision-ready products.

GLOBAL

commercial
coverage

1 km²

precipitation grid

1 min

forecast intervals

10 min

model refresh

0-4 h

nowcast horizon

A unified processing pipeline

01

OBSERVATIONS

- Five major geostationary satellite systems
- 700+ radar data sources where available
- Ground sensors, static geospatial data and model inputs

**02**

AI PROCESSING

- Data harmonisation and spatial merging
- ML-based denoising and feature extraction
- Forecast inference, classification and quality controls

**03**

DELIVERY

- REST / JSON APIs and CDN-delivered XYZ tiles
- Custom APIs, webhooks, SDKs and dashboards
- Enterprise, private-cloud and on-premise options

WHY IT MATTERS

Global reach without local hardware deployment.

The satellite layer enables broad geographic coverage; radar and local observations can enhance performance where available. Customers can start with standard APIs and extend into tailored enterprise delivery as requirements mature.

Global Precipitation Nowcast API

Minute-by-minute rain and snow intelligence for time-critical decisions.

REST / JSON

PRODUCTION API

Rainbow.ai delivers high-resolution precipitation nowcasts for any longitude and latitude worldwide. The API returns expected precipitation timing, type and intensity, with confidence information for operational use.

1 km2

spatial resolution

1 min

forecast steps

10 min

refresh cadence

4 h

forecast horizon



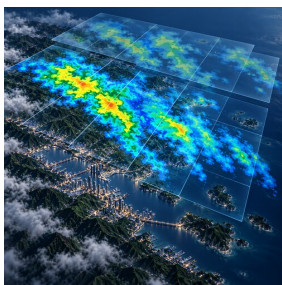
Built for operational workflows

- Aviation and autonomous systems
Weather-aware routing, mission planning and go/no-go support.
- Agriculture and forestry
Field operations, spraying windows and precipitation timing.
- Logistics and mobility
Route risk, delivery timing and field-service optimisation.
- Insurance and risk
Event verification, exposure monitoring and claims context.
- Energy and infrastructure
Maintenance windows, asset protection and demand context.
- Digital platforms
Weather-aware user experiences without building a forecast stack.

Multiple delivery paths. One integration strategy.

Use finished forecasts, map-ready layers or tailored enterprise data services.

XYZ / CDN

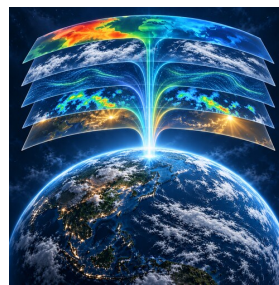


Weather Map Tiles API

Global precipitation nowcasts and cloud cover as map-ready 256 x 256 raster tiles.

Compatible with: Leaflet, Mapbox GL, deck.gl and standard XYZ mapping SDKs.

REST / JSON



Unified Weather API

Hourly and daily forecasts for any location, alongside Rainbow precipitation intelligence.

Parameters: temperature, precipitation, wind, pressure, humidity, UV, visibility and dew point.

Enterprise data and deployment options

REAL-TIME RADAR

Processed radar observations with denoising, blending and low-latency delivery.

HISTORICAL RADAR

Custom regional datasets for model training, research and event reconstruction.

CUSTOM DELIVERY

APIs, webhooks, SDKs, dashboards, white-label layers and tailored data products.

CONTROLLED DEPLOYMENT

Enterprise SLA options, private-cloud or on-premise deployment and dedicated support.

AVAILABLE / CONFIGURABLE

Severe Weather Notifications

Configurable weather alerts can be delivered into user-facing applications and operational workflows. Enterprise implementations can use tailored APIs, webhooks, SDKs or dashboards.

Wildfire Detection API

High-cadence satellite monitoring for earlier operational awareness.



PILOT PROGRAMME

Rainbow.ai is developing a near-real-time wildfire detection service based on high-frequency geostationary satellite imagery.

The system processes observations from GOES-East, GOES-West, Himawari, Meteosat Second Generation and Meteosat Third Generation approximately every 10 minutes.

What the API provides

- Geolocated and timestamped candidate wildfire detections
- Event tracks that group recurring observations over time
- Near-global monitoring across wildfire-prone regions
- Machine-learning analysis of multispectral imagery, surface characteristics and land cover

DESIGNED FOR COLLABORATIVE VALIDATION

Pilot partners can evaluate regional performance, combine detections with agency or sensor feeds, define operational thresholds and shape production API requirements.

Target users: emergency response, forestry, utilities, insurance, infrastructure and defence.

EARLY ACCESS NOTE

The current service is intended as supplementary intelligence for evaluation and pilot integrations. It should not be used as the sole source for safety-critical alerts.

Performance you can verify

Rainbow.ai ranks first globally for short-term precipitation accuracy in the public WeatherIndex.ai benchmark.

Compare our forecasts against real observations using an open and reproducible methodology.



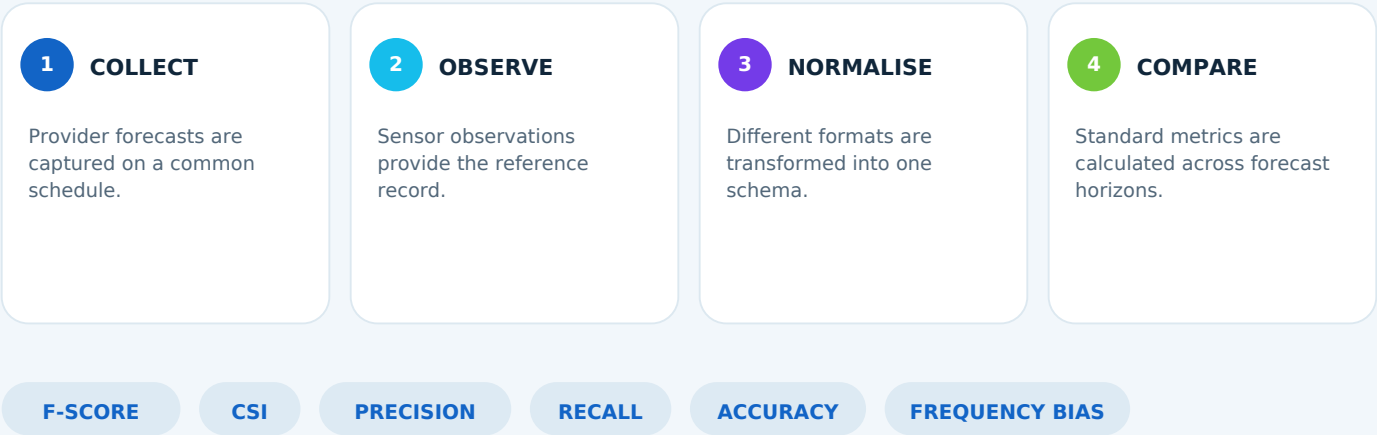
LIVE **OPEN SOURCE**

WeatherIndex.ai Benchmarking Platform

Forecasts from multiple providers are collected at regular intervals, normalised into a common format and evaluated against real observations using one methodology.

Users can compare performance by observation point, country, region and forecast horizon - and see how results change over time.

A reproducible evaluation workflow



Building the next weather intelligence layer

The current nowcasting architecture is being extended into multi-parameter forecasting and severe-weather intelligence.

IN DEVELOPMENT

FOUNDATION NOWCAST MODEL

A unified AI forecasting framework combining multiple weather models, satellite, radar and ground observations, targeting a 24-hour multi-parameter horizon.

IN DEVELOPMENT

LOW-ALTITUDE 3D WIND

High-resolution wind speed and direction for drones, airports, urban air mobility, wind energy and maritime operations, with fine spatial and temporal grids.

IN DEVELOPMENT

HAIL & LIGHTNING

Short-term convective-hazard intelligence combining numerical models, radar, satellite imagery, lightning networks and ground observations.

VALIDATION / R&D

CLOUD & SOLAR INTELLIGENCE

Enhanced real-time cloud masks and solar-radiation forecasting for renewable energy, maritime routing and weather-data services.

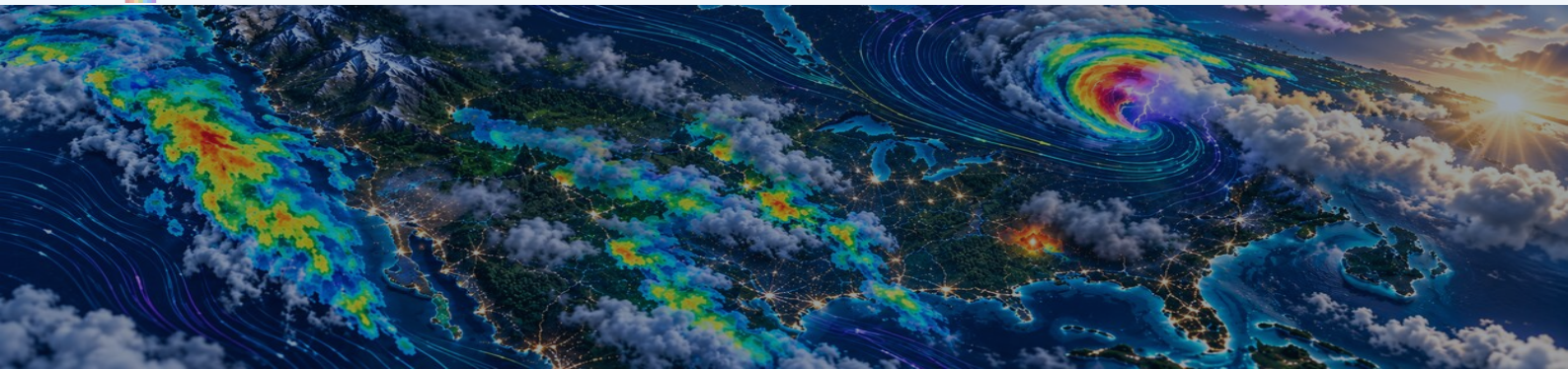
FROM DATA TO ACTION

These capabilities are designed to converge into a severe-weather intelligence platform with event detection, configurable thresholds, notifications and workflow integration.

Roadmap specifications are development targets and may evolve through technical validation and partner requirements.



RAINBOW.AI



Let us build the next operational weather capability together.

Rainbow.ai works with weather-technology companies, data providers and weather-dependent operators to validate, integrate and scale new capabilities.



TECHNICAL EVALUATION

Benchmark Rainbow data against your reference observations and decision thresholds.



JOINT DEVELOPMENT

Combine complementary sensors, radar, satellite data and AI models into differentiated products.



ENTERPRISE DEPLOYMENT

Move from API trial to tailored delivery, regional optimisation and controlled infrastructure.

TEST RAINBOW.AI ON YOUR DATA

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