Overview of Xweather products

For more detailed information and to contact us, explore our website
xweather.vaisala.com.

VAISALA Xweather

Lightning

The most accurate and reliable global lightning measurement data in the world

Lightning strikes pose a significant hazard to life and property. With lightning data, companies can locate and track storms, issue safety alerts as lightning moves closer to a recreational or commercial area, monitor and analyze potential damage to assets.

In addition, lightning indicates specific atmospheric conditions, and is a valuable tool for meteorological forecasting and monitoring, particularly in data-sparse regions.

For more information, check the Thunderstorm Manager website and the Lightning website.

The service offers:

- Real-time reporting of detailed lightning activity anywhere on the globe, with reliable and accurate information enabling critical safety and asset protection decisions

- Expanding set of science-based actionable insights derived from real-time lightning data to support customer decisions, from real-time lightning safety alerts to forensic analysis of lightning damage potential

Applications include:

- Aviation – Protect passengers, flight crews, on-ground personnel and aircraft

- Maritime Applications – Keep ports and other maritime operations safe while avoiding costly operational disruptions

- Meteorology – Rely on the best available lightning detection for improved forecasting and safer communities

- Renewable Energy – Protect your people, and key solar and wind farm assets

VAISALA Xweather

Automotive

Highly accurate weather and road weather solutions to enhance driver safety and passenger comfort

As automotive technology evolves, manufacturers must find ways to meet customer and regulatory expectations for assisted and automated driving and in-car access to value-added infotainment content — while also supporting driver safety and passenger comfort.

Vaisala's automotive technology delivers highly accurate weather and road weather conditions data to support these targets.

For more information, check our website.

The service offers:

- Infotainment – High-quality and accurate weather and road weather data to optimize system functionality, end-user experience, and safety

- Advanced Driver Assistance Systems (ADAS) and Automated Driving (AD) – Vaisala road weather for ADAS and AD delivers highly accurate information about road and driving conditions to support safer advanced driving programs

- EV Range calculation, for exact planning of Your electrical drive.

- Road Weather API – High-resolution road weather forecasting to improve safety, efficiency, comfort and convenience for drivers and vehicles

Customers we are already working with:

- BMW

- Hyundai

- Mercedes-Benz AG

- Rand McNally

- TomTom

VAISALA Xweather

Renewable energy

As global energy demand increases and climate change demands decarbonization of the global energy system – renewable energy is being built and operated at an ever-increasing scale and pace. Weather is the "free" fuel of renewable energy projects, but it is also inherently variable from location to location and from one moment in time to the next.

A better understanding of past, current, and future weather allows companies to build better renewable energy projects, deploy the right technologies at the right locations, and then operate them more efficiently, maximizing production and return on investment.

Accurate wind and solar data and forecasts allow our customers to build better renewable energy projects and optimize their operations, increasing their return on investment.

For more information, check our website.

The service offers the ability to:

- Obtain accurate historic weather data that are critical for renewable energy projects (such as wind speed and solar irradiance) at any location on earth instantly (at the click of a button or API request).

- Obtain accurate forecasts of renewable energy production at individual projects and for entire electricity markets.

- **Applications include:**

- Selecting the best locations for the development of wind and solar projects

- Designing renewable energy projects, together with battery storage, to optimize generation and value

- Monitoring the performance of renewable energy projects to detect under-performance and take corrective action

- Scheduling maintenance at renewable energy projects

- Scheduling renewable energy production into power systems and markets

- Energy trading

VAISALA Xweather

MapsGL, AQI, and Lightning and Weather APIs

The world's best global environmental data – available as data via AerisWeather API or using AerisWeather MapsGL for Business and Enterprise

The AerisWeather API provides a broad range of hyperlocal environmental data sets which can be leveraged to plan, build, and grow smarter. Global Air Quality and the world's best Lightning network are available alongside cutting-edge archive, observation, and forecast products. Hyperlocal precision helps measure the environment street-by-street and minute-by-minute.

True insight and understanding is gained from visualization and animation. MapsGL puts the viewer in front of fast interactive environmental animations, framed in the context of their assets and their branding to seamlessly show prominent threats.

For more information, check the weather API website, and the Maps and MapsGL websites.

These services offer the ability to:

- Monitor and forecast severe weather globally – advisories, precipitation, tropical storms, conditions, local air quality, and lightning strikes, with the ability to measure street-by-street microclimates minute by minute

- Combine past archive, present, and forecast weather data beyond just temperature and precipitation, enabling industries to operate more efficiently and more safely

- Customization allows companies to interactively visualize what is affecting their business

- Provide a new level of meteorological information accuracy for data scientists, powered by Vaisala

Applications include:

- Logistics
- Agriculture
- Emergency services
- Visualizing environmental threats
- Risk and property damage consulting

VAISALA Xweather

Wx Beacon powered by AtmoCast

Actionable insights powered by the most accurate weather data

The better we can represent the atmosphere, the better our weather forecast will perform.

Remote sensing capabilities measure larger portions of the atmosphere, but struggle to see all variables, especially near the surface. While surface-based networks are numerous, they can be limited at the local scale when higher resolutions are needed.

With Wx Beacon and AtmoCast, we can further enhance the local forecasting accuracy by installing sensors in areas of interest and connecting that data to our ever evolving weather forecast. Instead of forecasting weather at the city level, it's possible to provide street and block level forecasts.

Companies can connect the data directly to their systems but also create rule-based alerts to act upon. For example, energy companies require local weather forecast accuracy for the next 48 hours in areas where energy is consumed as they optimize the supply based energy demand.

For more information, check our website.

The service enables:

- Most accurate weather data for business operations by leveraging Xweather™ technology and dedicated Vaisala Cast™ sensors

- Tracking weather conditions where it matters to run operations efficiently and safely

- Operational security and data quality via Observations-as-a-Service

- Instant access via API and UI

Applications include:

- Energy Demand Forecasting

- Facility & Utility Management

- Power Transmission

- Urban and Industrial systems

- Port Operations

- Construction

- High value crops

VAISALA Xweather

Wx Horizon powered by GroundCast and TempCast

Bring the best actionable insights and predictions to road maintenance and the future of driving

Delivering road maintenance is expensive. Climate change and shifting weather patterns mean that past experience is no longer a confident guide for the future. Companies need to know the current impact of hazardous weather on the entire road network and how hazardous weather will impact the network in the future.

Wx Horizon not only provides global weather forecasts and radar maps but also pavement forecasts that are enhanced by local measurements. TempCast and GroundCast sensors use proven measurement technologies and provide critical information like surface temperature and residual salt levels in locations that matter the most.

Check our website for more information about Wx Horizon powered by GroundCast, and TempCast

The service enables:

- The opportunity to keep roads safer with better and more efficient road maintenance

- Cars and autonomous vehicles can both plan and react to rapidly changing driving conditions

Applications include:

- Winter road maintenance

- Autonomous vehicles

- Advanced automotive display and safety systems

VAISALA Xweather

RoadAI

Perpetually updated road network data

Traditional road pavement condition surveys are mostly performed manually, subjecting the process to human errors and delays, and further draining limited resources.

Analysis of pavement conditions is crucial for managing safety risks of both commercial and private traffic, generating network-wide pavement condition data, long-term and preventive road maintenance decisions, and keeping roads in the best possible shape with available resources.

For more information, check our website.

The service offers:

- Combination of a user-friendly artificial intelligence (AI) technology tool, high-quality video data, and reliable methodology to quickly and accurately assess pavement surface conditions

- Four times the data at half the cost of a manual road survey

- Network-wide, continuously updated information on road conditions enabling data-driven early intervention road asset management

- Unlimited data availability and automated processing to drive safety, efficiency and environmental gains across planned and reactive maintenance activities

Applications and customers include:

- Public road networks

- Municipal and country-wide infrastructure management

- Road and infrastructure maintenance companies

- SEAGO (US), Town of Parker (US)

- North Yorkshire (UK) and Transport for London (UK)

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