

Elements API



WHAT YOU CAN DO

- Power websites and apps with real-time data and map tiles
- Keep employees, field personnel, and communities out of harm's way
- Track water levels and flood conditions across your watershed
- Monitor wildfire activity and fuel conditions
- Verify snow, ice, and rainfall for contracts and claims
- Use pinpoint forecasts to plan operations and predict outages

A wide net of data to drive your apps and analytics.

Elements API delivers AEM's environmental intelligence directly into your systems, with real-time, historical, and forecast data for lightning, weather, flood, wildfire, rain, snow, and more.

OVERVIEW

Elements API gives developers and data teams direct access to the environmental data behind AEM's monitoring solutions. Pull observations, forecasts, alerts, and map layers on demand, stream live lightning in seconds, or receive data feeds and alerts automatically. Every category is built to plug into your apps, dashboards, GIS tools, and analytical models, so your teams can act as conditions develop.



TRUSTED WORLDWIDE

AEM environmental data supports government, military, utilities, aviation, agriculture, and private sector organizations in more than 100 countries.

Get started: info@aem.eco



Powered by AEM lightning and monitoring networks plus official sources



Forecasts enhanced with real-time AEM station and lightning data



Delivered via REST, WebSockets, webhooks, S3 or FTP



Map tiles and GIS-ready layers for your mapping tools



Automated alerts pushed to your systems when conditions change

Data categories



Lightning

Access lightning data from AEM's Earth Networks Total Lightning Network in near-real time, plus history, alert polygons, and map layers that support safety decisions, operations, and post-event analysis.

- Live lightning data delivered in 15 seconds or less via WebSocket
- Historical lightning for the contiguous U.S., from 90 seconds ago to years
- Lightning alert polygons, including Dangerous Thunderstorm Alerts, using the Common Alerting Protocol (CAP)



Weather

Build on a complete weather feed: station observations, hyperlocal forecasts, official alerts, and map layers. Data includes conditions such as temperature, humidity, wind, rain, solar, WBGT/heat stress, and air quality.

- Current and historical observations from AEM weather station networks plus METAR, SYNOP, C-MAN, and buoy reports
- Hourly and 10-day forecasts for cities, any latitude/longitude, or tuned to a specific weather station
- U.S. National Weather Service warnings, watches and advisories



Flood

Monitor water conditions across your watershed. Flood data delivers real-time hydrologic observations, site camera imagery, alerts, and model-based water level forecasts that show where water is now and where it's headed.

- Current and historical observations from hydrologic and environmental monitoring stations
- Data from remote stations and field devices delivered through satellite, radio, IP, MQTT, file-based, and other telemetry networks
- Forecast water levels for specific locations, based on hydrologic models



Wildfire

See fire risk and activity across the landscape. Wildfire data combines camera imagery, remote station observations, and satellite-derived fuel layers to support monitoring, response, and risk assessment.

- Images and time-lapses from wildfire cameras
- Dynamic fuel type and fuel load layers, updated every 10 days
- 20-meter true-color satellite imagery



Rain

From live gauge readings to certified totals, rain data covers observations, forecasts, and verified rainfall amounts for any location you need to monitor, plan for, or document.

- Current and historical observations from AEM weather stations and global reporting networks (METAR, SYNOP)
- Current and forecast rainfall for specific locations
- Certified rainfall totals for event and insurance verification



Snow

Access certified snow and ice data, including snowfall totals, freeze verification, and historical climatology for contract management, claims, verification, and seasonal planning.

- Post-storm snowfall totals and event data by location, with certified PDF reports available for documentation and verification
- Certified air temperature and precipitation data to verify freezing and icing conditions
- 30 years of historical snow and ice data by location for climatological analysis and seasonal planning