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# How accurate is AirVisual's air quality data?

 Written by AirVisual  
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AirVisual reports data from governmental and non-governmental monitors. All data are constantly monitored and validated by **AirVisual cloud-based Artificial Intelligent (AI) system, which uses billions of air quality data points and pattern recognition** to flag what it considers inappropriate.

## Government monitoring stations

Government monitoring stations are typically high-cost "reference monitors." These are generally considered the most accurate and reliable source of measured air quality data. However, government sensors can sometimes run into problems and report inaccurate data, such as a sudden high pollution reading. Reasons for this may include temporary periods of maintenance or defects, or temporary hyperlocal emission sources near the sensor.

**The AirVisual system therefore puts all government sensor data through a data validation system before publishing.** One example of this validation process: if AirVisual's cloud-based system identifies any potential anomalies published by a station (for example, a sudden high spike in PM2.5 from 10ug/m3 to 100ug/m3 from one hour to the next), it will cross-check the data with other nearby measurements to verify whether such a spike is representative, or an anomaly. We also cross-check against historical patterns, and other parameters such as weather conditions. Based on the results of the cross-checks, the value will be published or discounted accordingly.

## Non-governmental monitoring stations

Other sensors are also subject to a data calibration and correction process, in addition to the validation process described above.

This calibration system takes into account nearby conditions such as temperature and humidity, and **applies a data calibration algorithm based on environmental conditions.** For example, high humidity levels may under some circumstances lead to low-cost sensors over-reporting levels of PM2.5. Therefore, this calibration and correction algorithm takes local humidity levels and other environmental parameters into account, in addition to regional historical patterns, and adjusts the PM2.5 measurements accordingly.

**The adjustment level is determined by the cloud-based system** which is built on artificial intelligence and machine-learning. The **AirVisual system learns from its years of aggregating billions of global air quality data points** from reference sensors, AirVisual sensors, meteorology data, and pollution composition from satellite imagery.

## If you think a station has a problem

**All data that is ultimately published on the AirVisual platform has gone through a rigorous checking process.** Throughout the years, **AirVisual has built the most advanced air quality data validation system to ensure the best data accuracy and reliability** possible. However, should the data still be in doubt, AirVisual offers users the possibility to report a potential problem with a station. This ensures double data validation: from the system and from the community.

Did this answer your question?