

Air Mapping made “Easy, Economical and Efficient”

It is commonly believed that pollutants originating from industrial sources are the predominant contributor to poor air quality, but the reality is that urban air pollution (mainly vehicular emissions) has reached alarming levels and is a major cause of diminished air quality worldwide. Understanding the causes, patterns, and human health impacts of urban air pollution has therefore become crucial for smart city planning and management, which makes extensive and accurate air quality monitoring a necessity.



Measuring urban air pollution poses significant and unique challenges because of several factors like varying vehicular and population density, infrastructural developments, changing weather patterns, etc. It requires different measurement and monitoring approaches than the existing conventional air monitoring techniques which lack temporal and spatial resolution. As clearly stated by USEPA in 2013 in its document titled “New Generation Air Monitoring Roadmap”: “Current sophisticated, expensive ambient air pollution monitoring technology is not economically sustainable as the sole approach and cannot keep up with current needs, specifically new monitoring networks and special purpose monitoring”.

This urgent need paved the way for a new concept in air monitoring known as **air mapping**, where a network of localized monitoring systems is set up across the city to measure community level air pollution in real-time with high spatial resolution. This data is a key component of effective and intelligent smart city planning and smart traffic control.

Effective **air mapping** networks require large numbers of air monitoring systems to be deployed providing accurate and reliable data. Air pollution monitoring devices must therefore be relatively low cost for networks to be economically viable, while also delivering high data accuracy and integrity with robust performance.



Easy & Economical Air Mapping using

ADVANCED • ACCURATE • AFFORDABLE

Continuous ambient air quality Micro-Monitoring System



AirSENCE is a comprehensive *caaqMMS* that provides data for all critical gaseous pollutants, particulate matter, and relevant environmental parameters. It is particularly well suited for air mapping applications with its affordability, compact size, and light weight. Most importantly, AirSENCE accurately measures air quality levels and has demonstrated high correlation with conventional reference monitoring systems. It has a weatherproof and corrosion resistant enclosure and has been installed in extreme environments ranging from cold Canadian winters to hot and humid Indian summers.

With its various communication capabilities, including 3G & 4G cellular, Wi-Fi, and LAN, AirSENCE is an easy fit in any mode of network. Its cloud-based data storage and access allow users to view and download data anytime, from anywhere using any network-enabled device such as a PC or smartphone. As an IIoT ready device, its onboard processing capability can communicate air quality data from every device directly and securely to any server designated by the user. AirSENCE is economical to operate and maintain as it requires only 7W of power and doesn't need any regular replacement of consumables. Proprietary intelligent data processing algorithms are applied to extend the useful lifespan of its highly sensitive electrochemical sensors, which further reduces recurring maintenance costs.

AirSENCE provides accurate air quality data with low initial investment and minimal operational and maintenance cost, making it an essential tool for creating air mapping networks. AirSENCE is the future of *caaqMMS* available today.