



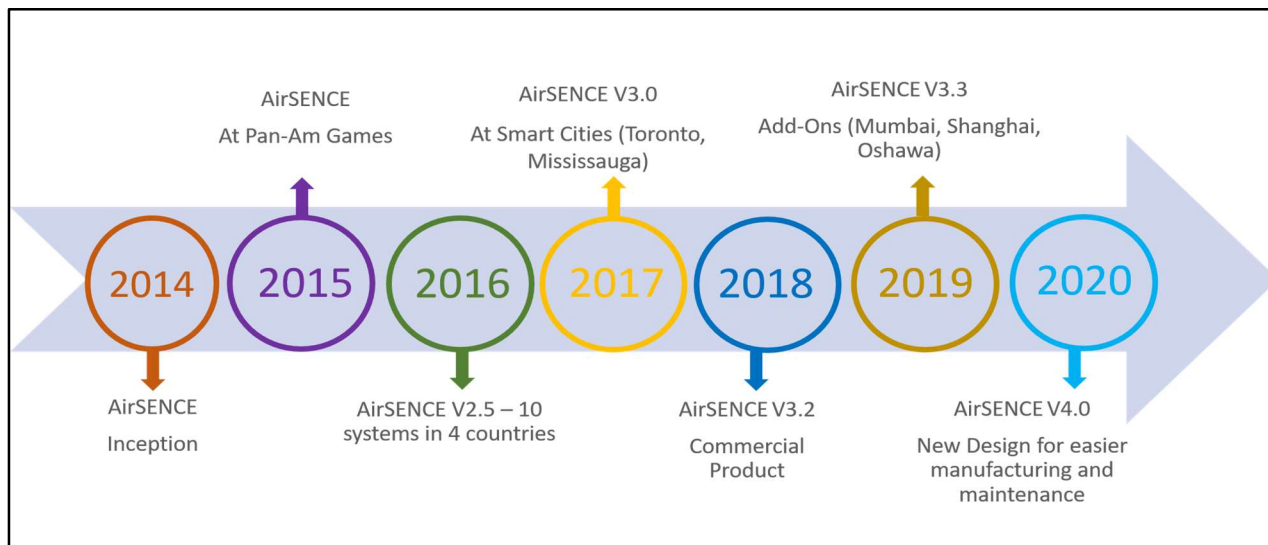
AirSENCE: Tested by Academics, Trusted by Customers

New technologies and products often gain wider acceptance when they are developed, tested, and verified in collaboration with academics. The innovative and rigorous scientific contribution of academia plays a significant role in products' commercial success. In the last decade, several well-known research institutions have taken a keen interest in improving sensor technology. This contributed significantly to developing sensor-based air monitoring systems which are perpetually improving in accuracy and reproducibility, thus befitting practical use.

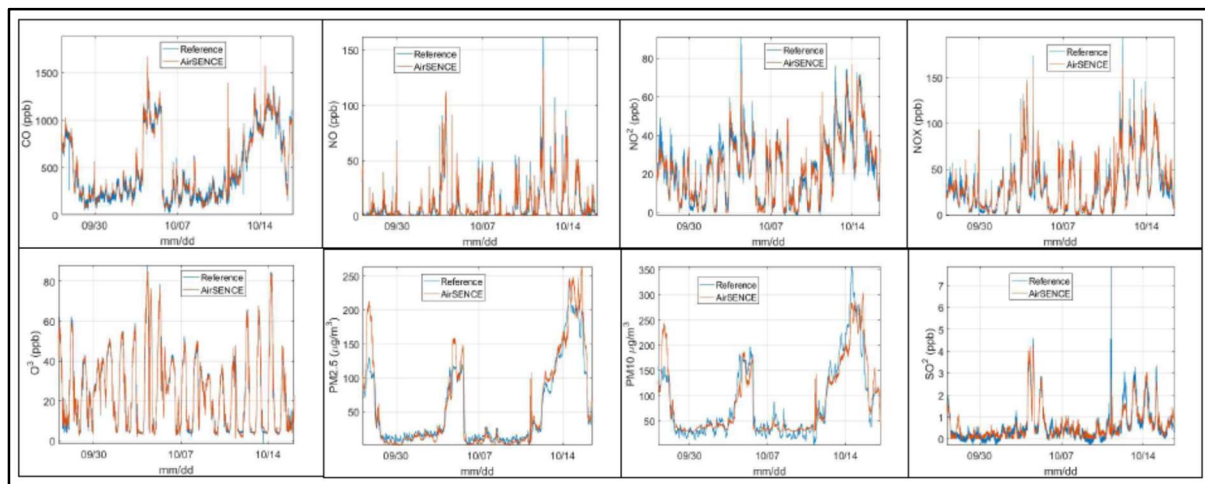
Originating from the renowned interdisciplinary air research centre, SOCAAR – Southern Ontario Centre for Atmospheric Aerosol Research at the University of Toronto – AirSENCE was developed by A.U.G. Signals Ltd. (AUG) into a technologically advanced commercial product through a series of academic collaborations in Canada and globally. Bringing together medical personnel, atmospheric chemists, and environmental engineers, SOCAAR's air quality research has led to the invention of the low-cost air quality monitoring technology where signals from an array of sensors are intelligently fused to yield the levels (concentrations) of individual pollutants and integrated metrics of air quality. This innovative technology was further advanced through an AUG led international endeavour, where AUG applied their 35 years of signal processing and product design expertise with the air science knowledge and experience of SOCAAR, as well as the air pollution control expertise of College of Environmental Sciences and Engineering at Peking University (PKU), China. This joint effort along with a series of AUG led industry-academia collaborations evolved AirSENCE to the commercially viable advanced, accurate and affordable caaqMMS (continuous ambient air quality Micro Monitoring System) available today.

Before commercialization, several AirSENCE prototypes were constructed and continuously tested at various key locations across Toronto. Air quality data were gathered by AirSENCE and presented during the 2015 Pan-American Games. As part of Toronto's King Street Pilot Study, AirSENCE continuously collected real-time air quality data at strategic locations and on streetcars to support city's urban development decision-making.

AirSENCE evolved with every generation in advancement of enclosure design, electronics, sensors, communication and AI/ML based data processing capabilities. With the help of SOCAAR's scientists, each version of AirSENCE was rigorously tested and its data duly compared to a collocated conventional reference system. AirSENCE has been verified to have a high degree of correlation with reference data. AirSENCE version 3.0 achieved stable design with accurate data and was taken to Beijing, China for testing and verification under vastly different air quality conditions through the collaboration with PKU.



China has always been preferred for testing and system evaluation due to its high air pollution levels. Multiple AirSENCE units were installed at different locations on PKU campus in 2018, with one unit collocated with reference equipment. The graphs overlaying November 2018 AirSENCE data with reference for various pollutants are provided as example to demonstrate AirSENCE’s excellent compliance and close correlation with the reference system:



AirSENCE continues to provide reliable and accurate air quality data. AUG will continue its strong collaboration with academia to ensure innovative scientific breakthroughs and advancements.

AirSENCE - Advanced Accurate and Affordable caaqMMS