

How NuWave's AirSentric environmental sensor system integrates with the SMOCAI platform for Indoor Air Quality and HVAC performance solutions

SMOCAI™ + AirSentric™

Building Holistic Solutions Together

Where the whole is greater than the sum of its parts

The endeavour of an innovative technology...

Aire Limpio for more than two decades has been a pioneer in ventilation and filtration technologies in Spain, providing cutting-edge technologies such as photocatalytic purification and active polarization filtration.

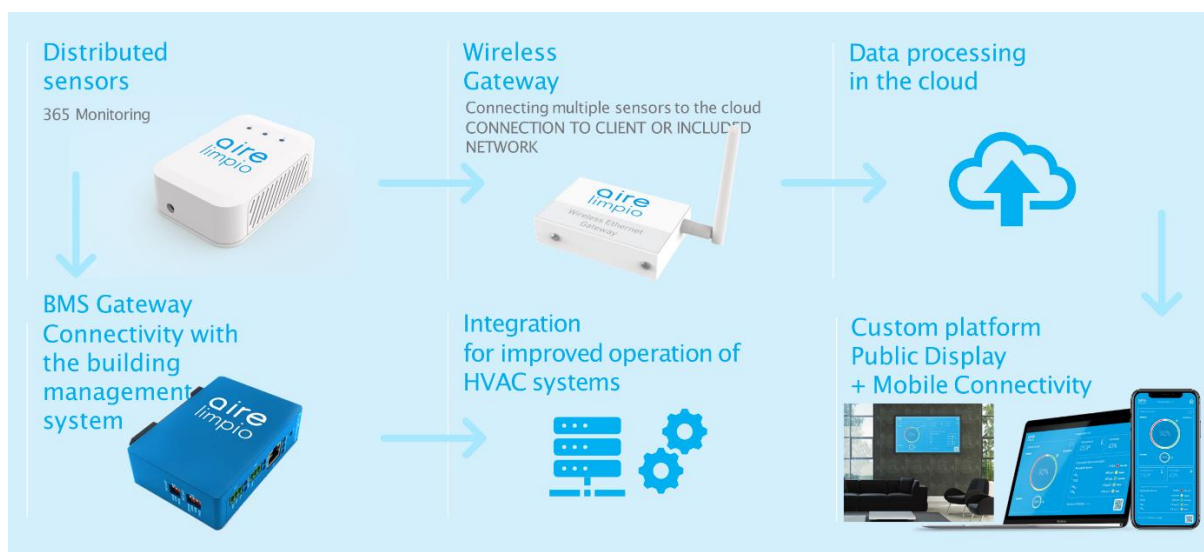
In 2019, in the search to keep up with the demand for technological systems associated with indoor air quality, Aire Limpio decided to go a step beyond electromechanical systems and enter the development of information technology systems that under the same umbrella would cover continuous monitoring, awareness and methods of taking automatic actions.

When Aire Limpio decided to carry out the development of an integral indoor air quality platform, the thinking was to seek a partner with a reliable and accurate monitoring platform as the fundamental basis for the entire development. This is the key point that would allow the development of a cloud system, with information regarding the quality of indoor air, that was useful for the occupants in the buildings, while automatic control actions could be executed to have a ventilation and filtration on demand scheme.

This is how SMOCAI™ (Sistema para la Monitorización de la Calidad del Aire Interior), the indoor air quality monitoring system, was born. A key point for the project was always to have reliable systems that were easy to implement and that allowed easy integration into the ecosystem of the platform being developed. That is why, after multiple tests of numerous existing systems in the market, market analysis and review of different companies, Aire Limpio decided to collaborate with NuWave Sensors. NuWave's proven ability to deliver, to work hand in hand to provide hardware solutions, the ease of integration, and the speed in which the installation of its devices can be carried out with minimal interruption have allowed the AirSentric™ system to be a fundamental part of our SMOCAI™ platform.

SMOCAI™ today consists of a cloud system, which allows real-time monitoring of multiple parameters of air quality and the output to be displayed on screens distributed in the building. This allows users to know at all times the quality of indoor air, as well as enabling integration with clean air purification and filtration systems for automatic activation of ventilation and purification in real-time and on-demand.

This has been possible thanks to the ease of integration of NuWave's HEX platform that allows data to be easily incorporated into our cloud. In addition, the collaboration with NuWave has allowed the development of connectivity under the BACnet and Modbus protocols, key protocols today for inclusion within BMS systems in buildings, allowing ventilation schemes on demand within any existing platform in buildings. All this has allowed us to deploy in more than 800 thousand square meters of surface of buildings in Spain and Andorra, including buildings in the sectors of offices, hospitals, hotels, and real estate.



Rapid development and proven effectiveness in project after project have given us extensive experience in the market. Our customers are really satisfied with how complete the platform is and how fast we can deploy. Our deployments take an average of three days for installation and commissioning - this is another advantage of having a partnership with NuWave as the wireless connectivity allows an outstanding quick deployment in every project.

Another critical point for our customers is the ESG framework, for them the importance of having systems that can help with the environmental, social and governance aspects in their building is key. Relying on NuWave's system which is compliant with standards like the WELL Building Standard and RESET Air certification, gives us the confidence for delivering a platform that can indeed match many ESG criteria.



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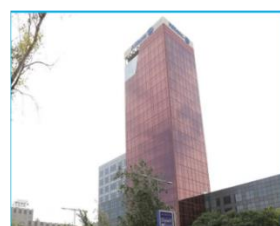
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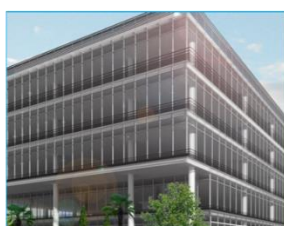
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Shown above are some of the buildings in which the system is currently in operation. Through the last three years we have gained outstanding deployment timing. For a specific case we deployed 52 sensors, including devices for monitoring temperature, humidity, carbon dioxide, particulate matter, volatile organic compounds, and formaldehyde across a single building. The requirement was to deploy a system that complies with the

WELL Building Standard and the scope was to cover all office areas for the tenants. This included working with many stakeholders since there were more than 15 tenants in the building.

We successfully installed and commissioned the entire system in two days' time. This was achieved by having reliable wireless technology and the right partner to back it up. Together, Aire Limpio and NuWave have created something greater than the sum of the parts.

"Aire Limpio and NuWave Sensors share a vision for healthy air becoming accepted practice in the workplace. Our collaboration has already enabled the large-scale deployment of air quality and HVAC solutions to help customers achieve Indoor Air Quality and energy performance goals. With the planned introduction of new technologies, we are hugely excited about the next phase of the partnership."

Lisa Ainsworth, CEO, NuWave Sensors