

SMART  
GREEN

# AIR QUALITY MONITORING SYSTEM

Protecting the atmospheric environment involves control of atmospheric emissions as well as an understanding of pollutant dispersion, monitoring emission levels, i.e. concentration in ambient air. To monitor these levels there are Air Quality Monitoring Networks.

The main objective of these Networks is to record the concentration levels of atmospheric pollutants in order to define air quality levels and establish action plans if high levels of contamination are detected.

Other objectives are:

- Locating contamination problem areas and understanding their space-time changes.
- Complying with atmospheric air protection legislation
- Obtaining the necessary information to define Action Plans as stipulated by European directives or other international regulations if alert thresholds are breached.
- Informing citizens regarding local air quality status.

SICE has significant experience in the implementation, maintenance and operation of Air Quality Monitoring Systems.

## INFORMATION SYSTEMS

SICE develops **environmental information systems** for citizens (web, smartphone apps, variable message signs (VMS), etc.), with data obtained from monitoring stations.

These data are also supplied to **Prediction Systems** to provide information on changes to atmospheric contamination over time.

Knowing beforehand that an incident could occur is a vital tool to protect the population and the environment, as it allows the implementation of preventative measures.

## MONITORING STATIONS

Air Quality Monitoring Networks allow the measurement, operation and predictive analysis of the evolution of air pollution in different areas (urban areas, industrial areas, special nature conservation areas, etc.)



Monitoring stations have equipment to measure the following parameters:

- NOx, SO<sub>2</sub>, CO, O<sub>3</sub>, BTX, etc.
- Particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>)

Some stations are equipped with meteorological sensors and/or noise level meters to measure noise levels.

These Networks are complemented with user information systems (web, SMS, variable message signs-VMS, etc.).

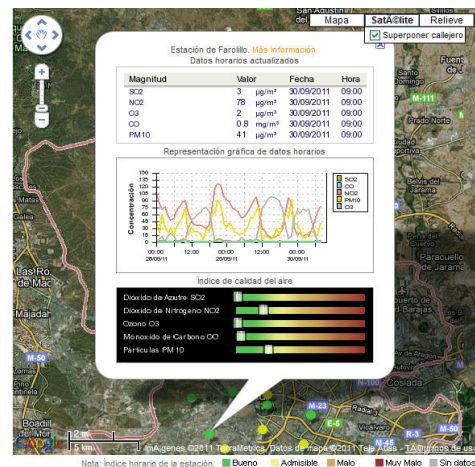


## CONTROL CENTRE SOFTWARE

SICE has extensive experience in the operation and maintenance of Air Quality Monitoring Networks, which means it has a deep understanding of the various types of data management applications.

Furthermore, SICE has developed an interactive application for the management, administration and control of obtained data as well as the condition of measuring devices.

The user accesses the web application using a username and password, and its functionality responds to management operations (information log, modification and deletion, control operations, etc.).



## DATA ACQUISITION SYSTEM (AIDA II)

A key component of the monitoring stations is the Data Acquisition System (DAS), which is in charge of acquiring and recording the data collected by the analysers and sending it, along with any generated alerts, to the Control Centre.

SICE has developed its own DAS, called AIDA II, based on a rack-mounted industrial PC with standard market components (HW and SW), which makes it easy to maintain and make changes and/or upgrades. It has a monitor which can display any type of report relating to the status of the remote station in situ. It is able to support various types of communication.

Amongst other characteristics, AIDA II complies with EEC regulation, the standard communications protocol between the Control Centre and the monitoring stations (TCP/IP) and it has data files in standard format (ASCII).