

CASE STUDY



Air quality monitoring networks

Regional air quality monitoring network, Andalusia, Spain

The Regional Government is responsible for the protection of the environment. Thirty years ago it started the deployment of an air quality monitoring network to cover the whole territory. Today, it has more than 100 monitoring stations, that measure more than 1,000 environmental parameters, making it the biggest air quality monitoring network in Spain.

“ The DTN Air Quality Team has more than 25 years of experience in deploying, upgrading and maintaining Air Quality Monitoring Networks, following international reference standards, according to EPA, MCERTS, and TÜV. ”

More than 100 monitoring stations, geographically distributed in 85,000 Km², are maintained following strict procedures according to ISO/IEC 17025 standard. //

What they were up against.

Andalusia, with an area larger than countries like Austria, The Netherlands, or Denmark, is the biggest region of Spain. It is a geographically diverse territory, ranging from the biggest mountains in the Iberian peninsula to the warm valley of the Guadalquivir river. It owns a vast biodiversity, as well as several natural reserves like Doñana National Park.

Andalusia has two important industrial chemical centers (Cadiz and Huelva) and a population above eight million, that lives in more than 130 cities with over 10,000 inhabitants.

The Regional Government is responsible for the protection of the environment. Under international standards and regulations, it needed to deploy a regional air quality monitoring network to accurately measure, according to reference certified methods, the different pollutants in the atmosphere.

What we did to help.

The network deployment started 30 years ago and since, DTN has deployed, upgraded and maintained extensive technology, including: air immission measuring stations, chimney gas emissions, measuring stations for water emissions and immissions, control centers, and public information panels in urban stations and in downtown areas of large cities.

The monitoring stations include weather stations and continuous analysis equipment such as: Analyzers of suspended particles (PST, PM10, PM2.5, etc.), Sulfur dioxide (SO2), Nitrogen oxide (NO, NO2, NOX), Carbon monoxide (CO), Hydrogen sulfide (SH2), Hydrocarbon (HC), Volatile Organic Compounds (VOC), Volatile aromatic compounds (Benzene, Toluene, Xylene, etc.), among others.

What the impact was.

Today the network has more than 100 monitoring stations, which measure more than 1,000 environmental parameters, making it the biggest air quality monitoring network in Spain. All these measurements are stored, processed and transmitted every 10 minutes to the Regional Control Center.

The final responsibility of DTN is to provide the data collected by the network, assuring its quality and integrity. Every piece of equipment installed in the stations is subject to periodic preventive maintenance checks, calibration control checks, and quality control audits following strict procedures according to ISO/IEC 17025 standard. The environmental information provided by the network is used as a high-quality reference to:

- Determine in real-time if the air quality is within the legal limits.
- Observe the evolution on time of pollutants in the atmosphere and detect potential alert situations.
- Develop action plans to improve the air quality.
- Improve and/or develop forecast models.
- Inform the population about the air quality level.

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