Flexible Environmental Monitoring: the case of LSI LASTEM relocatable weather stations for ARPA Campania

The role of relocatable weather stations in environmental monitoring

In the context of **environmental monitoring**, the adoption of **relocatable meteorological stations** is increasingly proving to be a strategic **solution** for **dealing with emergency situations**. LSI LASTEM has provided ARPA Campania, the Regional Agency for Environmental Protection of Campania Region, with this type of station to **map atmospheric conditions** in **real time**, especially in areas where permanent monitoring is not available. Thanks to relocatable meteorological stations, it is possible to detect meteorological effects deriving from events such as fires or emissions of harmful substances, providing **objective and precise data** to prevent and mitigate negative impacts on health and the environment.

Applications of relocatable weather stations

Relocatable weather stations are mainly used in contexts where **temporary and accurate measurement** is necessary, such as in the event of fires, environmental emergencies or odour mapping. These stations make it possible to integrate existing environmental monitoring networks, providing a more **detailed** and **dynamic view** of **localised critical areas**. In particular, they are used in landfills or near industrial areas to monitor odorous emissions that could reach inhabited areas or sensitive places such as hospitals or schools.

Measurement campaigns and monitored parameters

The measurement campaigns carried out by ARPA Campania using **LSI LASTEM portable weather stations** allow the collection of data on key meteorological parameters, such as **wind speed** and **direction**, **temperature**, **humidity** and **atmospheric pressure**. In particular, the use of ultrasonic anemometric sensors guarantees high accuracy in **wind** measurement, an important parameter for evaluating the **dispersion** of **pollutants or odours** in the air. The ability to quickly move stations as needed allows for extremely flexible monitoring that is adaptable to environmental emergencies.

Why does ARPA Campania opt for relocatable stations?

ARPA Campania's choice is based on the need to carry out **measurements in different places according to the case** under consideration, thus guaranteeing greater flexibility and wider coverage compared to traditional fixed systems. The ability to move stations quickly and easily allows emergency situations to be addressed in a timely manner, providing quality data in areas not covered by permanent monitoring. This approach makes it possible to **prevent and manage risky events** such as industrial

waste spills or the spread of odorous emissions that could cause disturbances to the population.

How does a measurement campaign take place?

The measurement campaigns carried out by ARPA Campania with the aid of LSI LASTEM stations follow a well-structured process. First, the **stations** are positioned at **strategic points close to the pollution source or site of interest**, taking into account the specific monitoring needs. Ultrasonic sensors begin **collecting** weather **data**, which is **analysed** in real time to identify potential risks. At the end of the campaign, of variable duration depending on the application, the data is processed to produce **detailed reports**, providing fundamental information for operational decisions and environmental protection.

The current status of the project

ARPA Campania's environmental monitoring project is continuing successfully, offering an innovative solution for controlling weather conditions in emergency situations. Relocatable weather stations and ultrasonic anemometric sensors have proven to be essential tools for ensuring precise and timely measurements.

In conclusion, thanks to this collaboration, ARPA Campania can, with a **flexible** and **cutting-edge system**, respond to the challenges posed by environmental emergencies.