

A dashboard for near-real-time air pollution episodes analysis and support to decision making

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Aim

In Italy environmental monitoring is carried out by the environmental agencies of each region (ARPA) or autonomous province (APPA), with the coordinating role of ISPRA. This network-shaped organization assures an extensively branched and flexible deployment of resources, but still requires an effort in order to guarantee **effective data collection, sharing, harmonization and publication** at a national level, in particular when dealing with **up-to-date data**.

In order to fill this gap, providing an up-to-date overview on Italian air quality, the web platform **calicantus** (<https://sdati.arpae.it/calicantus-intro/>) has been developed. The platform helps AQ experts in the interpretation of high pollution episodes and in the validation of observed data.

Data collection

To face the heterogeneity of data formats, metadata availability, protocols used, data supply timing, etc., the observed data collection phase of *calicantus* (top left side of Figure 1) was developed with an adaptive approach: flexibility is required to the data gatherer, rather than to the data providers.

Furthermore, **air quality forecasts** for today and three days ahead are collected, provided by seven chemistry-transport models of the Copernicus Atmosphere Monitoring Service (CAMS).

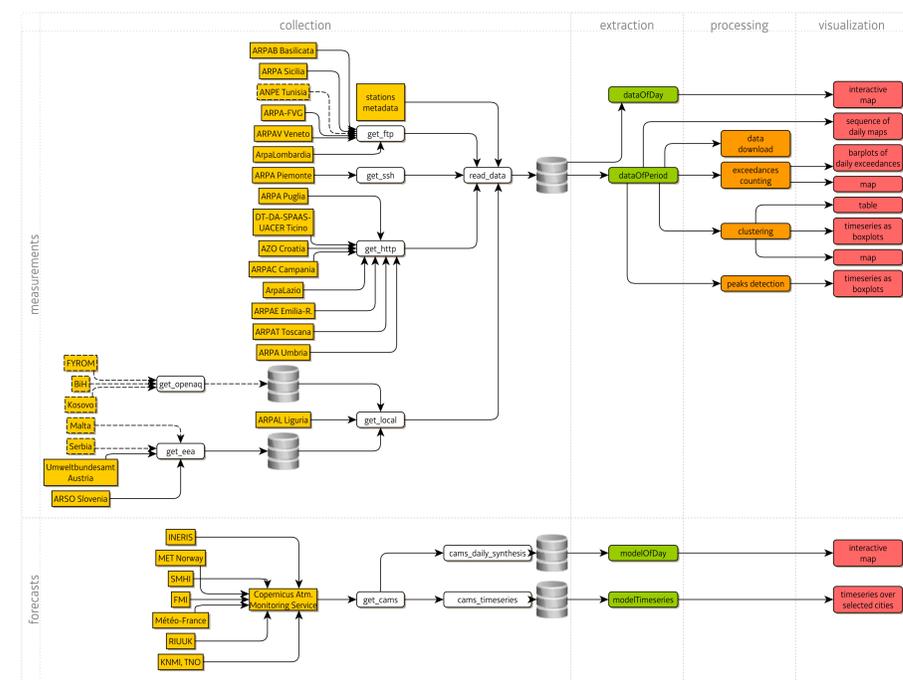


Figure 1: Flowchart of the *calicantus* platform

Interactive web interface

After the automatic data collection processes, the following phases – extraction, processing and visualization (right side in Figure 1) – are **interactively triggered and customized** by the user through the web interface. Products are shown in Figures 2 to 6. Furthermore, the cluster analysis tool (Maechler *et al.*, 2017) can identify areas where air pollution was relatively homogeneous during a selected period.

