



Environmental quality measurement module

in the Metropolis system is a comprehensive solution ensuring the acquisition, analysis and presentation of data from weather stations and numerous environmental sensors placed in the urban space. The platform is equipped with a set of connectors for the for sensors of various classes. In particular, it allows for the measurement of key indicators associated with the quality of air within the area covered by implementation, such as:

- air temperature,
- air humidity,
- pressure,
- CO/CO₂,
- SO/SO₂,
- NO₂,
- Dusting [PM₁, PM_{2.5}, PM₁₀].
- Ozone [O₃].

Measurement of air quality

as well as collection of data for the analysis of the impact of factors responsible for excessive dusting are the necessary elements of the smog fighting strategy.

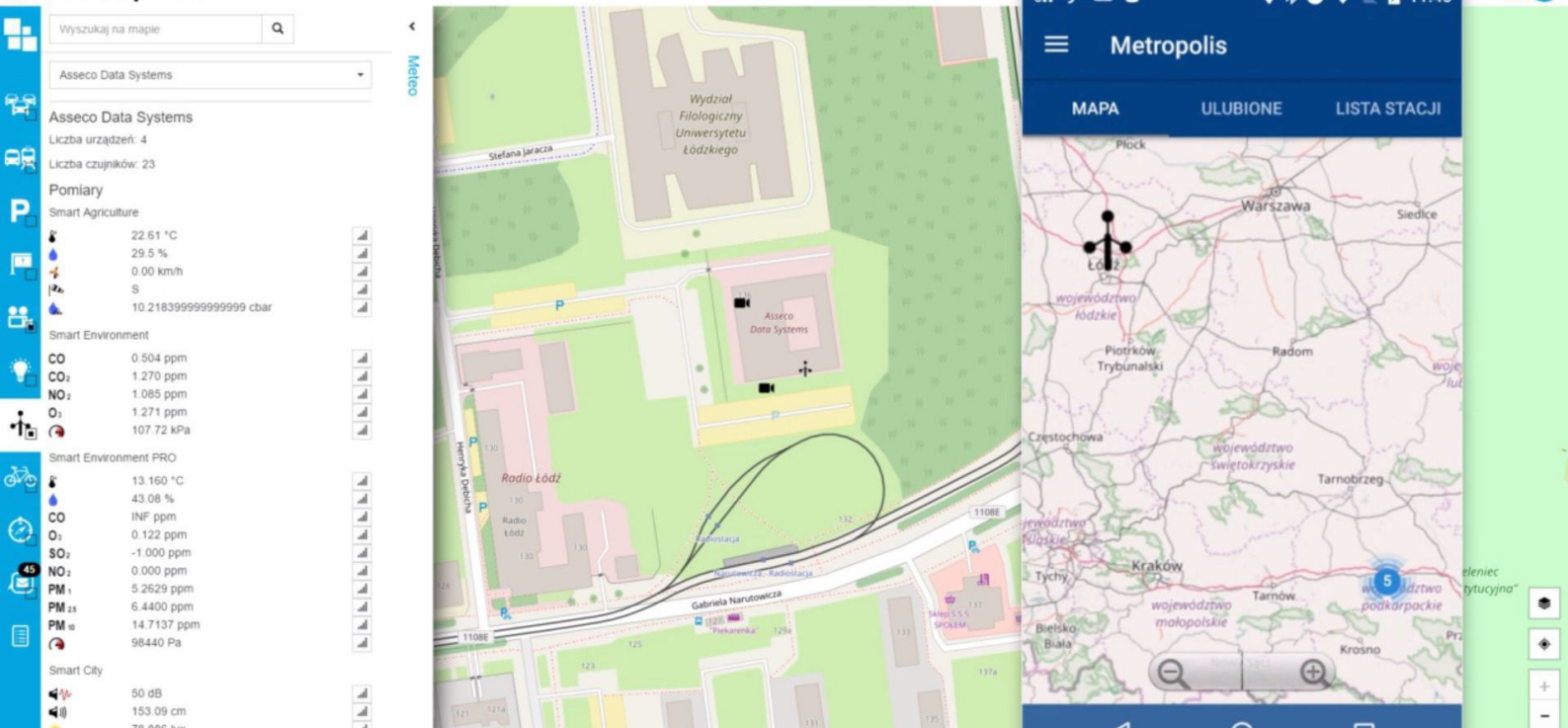
It is also possible to supplement the metrics associated with air measurements with further aspects associated with the environment:

- water level measurement,
- noise measurement,
- light intensity measurement,
- soil moisture measurement,
- precipitation measurement,
- measurement of wind speed and direction.

Measurement sensors

transmit the data to the central part of the Metropolis platform using Internet of Things class solutions. Data transmitted by sensors is supplemented with metadata, in particular the time stamp and globalization information, ensuring its subsequent efficient analysis.

Metropolis

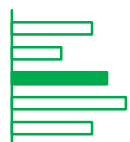


Key analytical mechanisms provided by the Metropolis platform include:



SPATIAL ANALYSES:

data coming from the environmental sensors can be visualized on maps, enabling further spatial analyses to be carried out using GIS tools; they allow for the creation of, e.g. a noise map, a dusting [smog] map or a CO2 emission map;



MEASUREMENT OF INDICATORS:

Metropolis makes it possible to define a number of indicators, for the measurement of which the analytical platform is responsible;



TREND/REGRESSION ANALYSIS:

key mechanisms for data analysis allowing for further predictive analysis of the metropolitan environment.

The central application collects data from measurement stations and creates dedicated maps and reports from the statistics. Moreover, it provides content for the dedicated mobile application.

