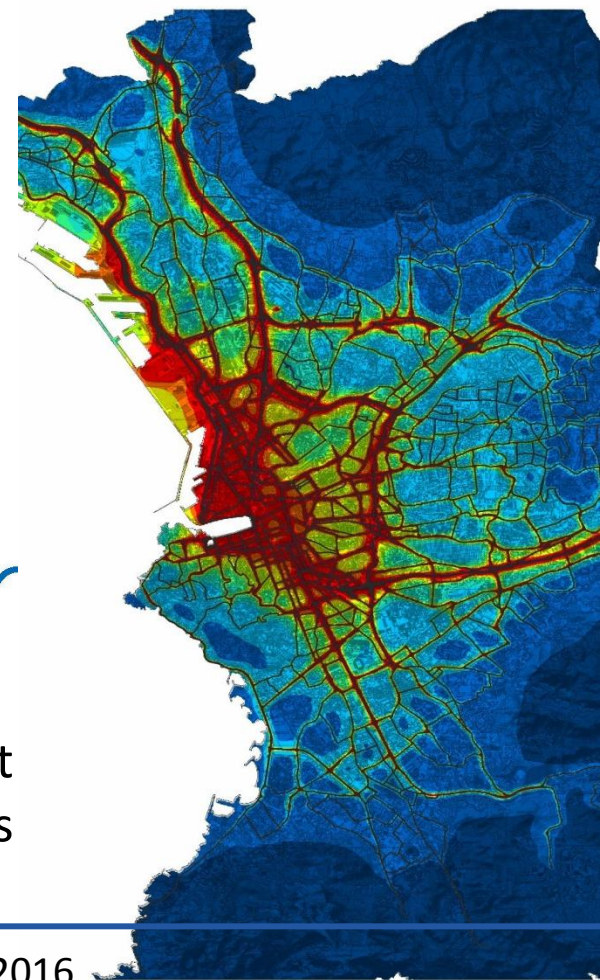
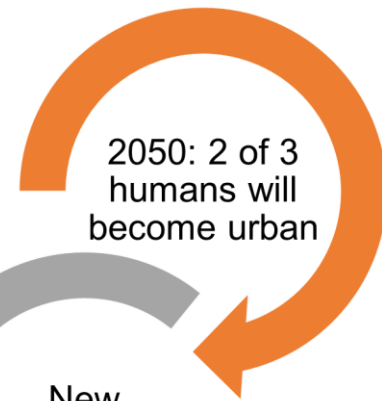




An operational air quality management
tool at high resolution for cities



ATMOSFAIR 2016
October 11th - 12th 2016
contact: julien.galineau@numtech.fr



2050: 2 of 3
humans will
become urban

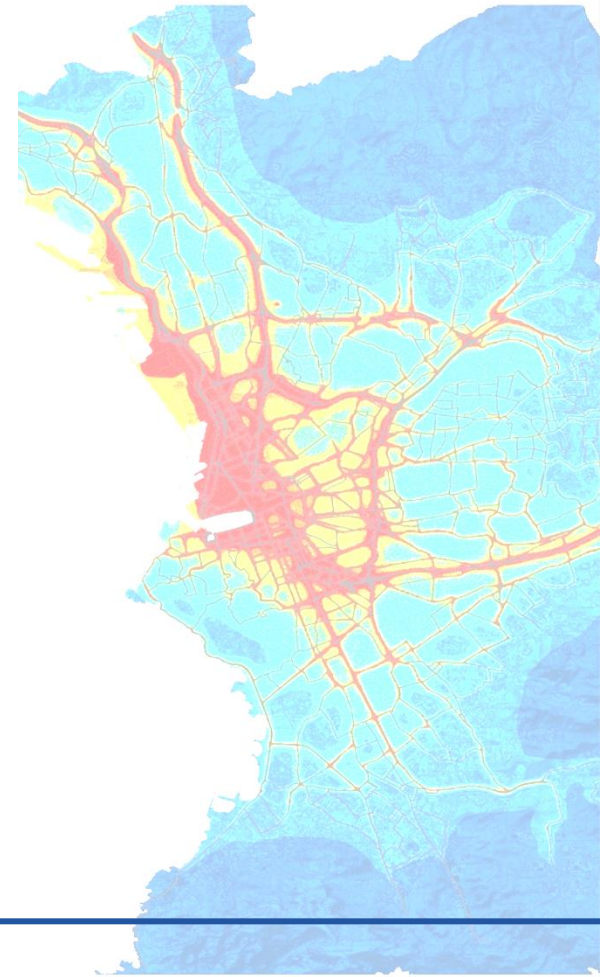


New
challenges to
assume

CITY: exposure to air pollutions

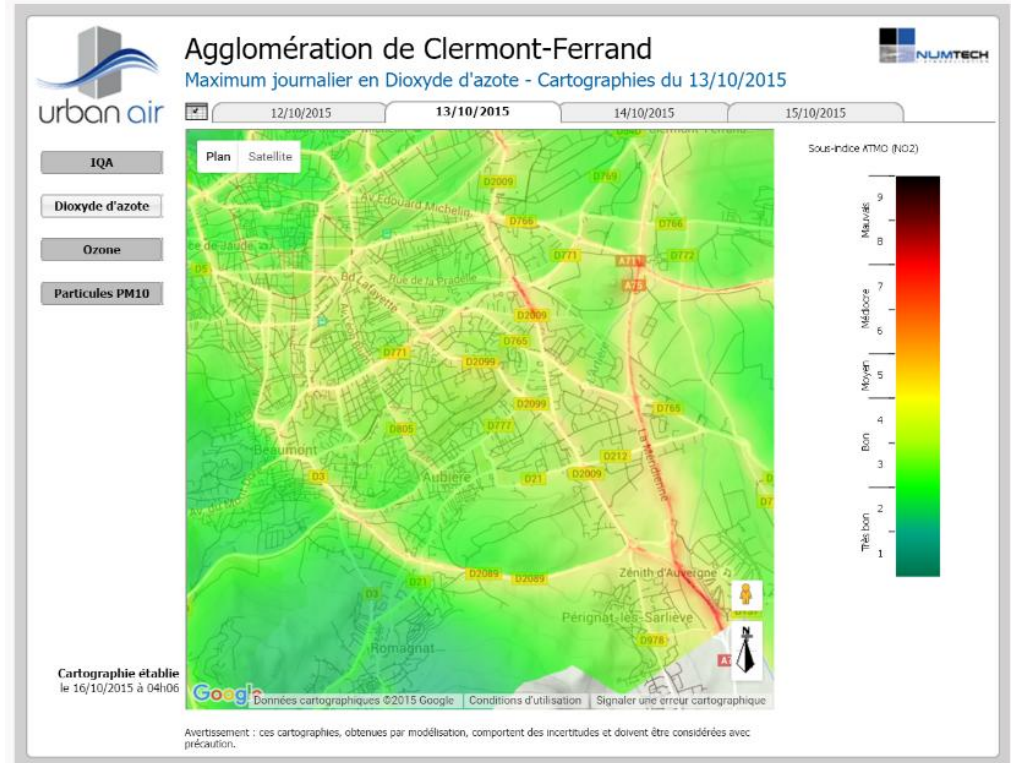
- ⇒ Degradation of the quality of life
- ⇒ Deleterious proven effects on the health
- ⇒ Increase in the overall financial burden due to various nuisances
(health damage, impacts on buildings, ecosystems ...)

What is Urban Air ?



What is Urban Air ?

⇒ an operational platform to map and forecast high-resolution air quality at the scale of an urban area, a town or a district

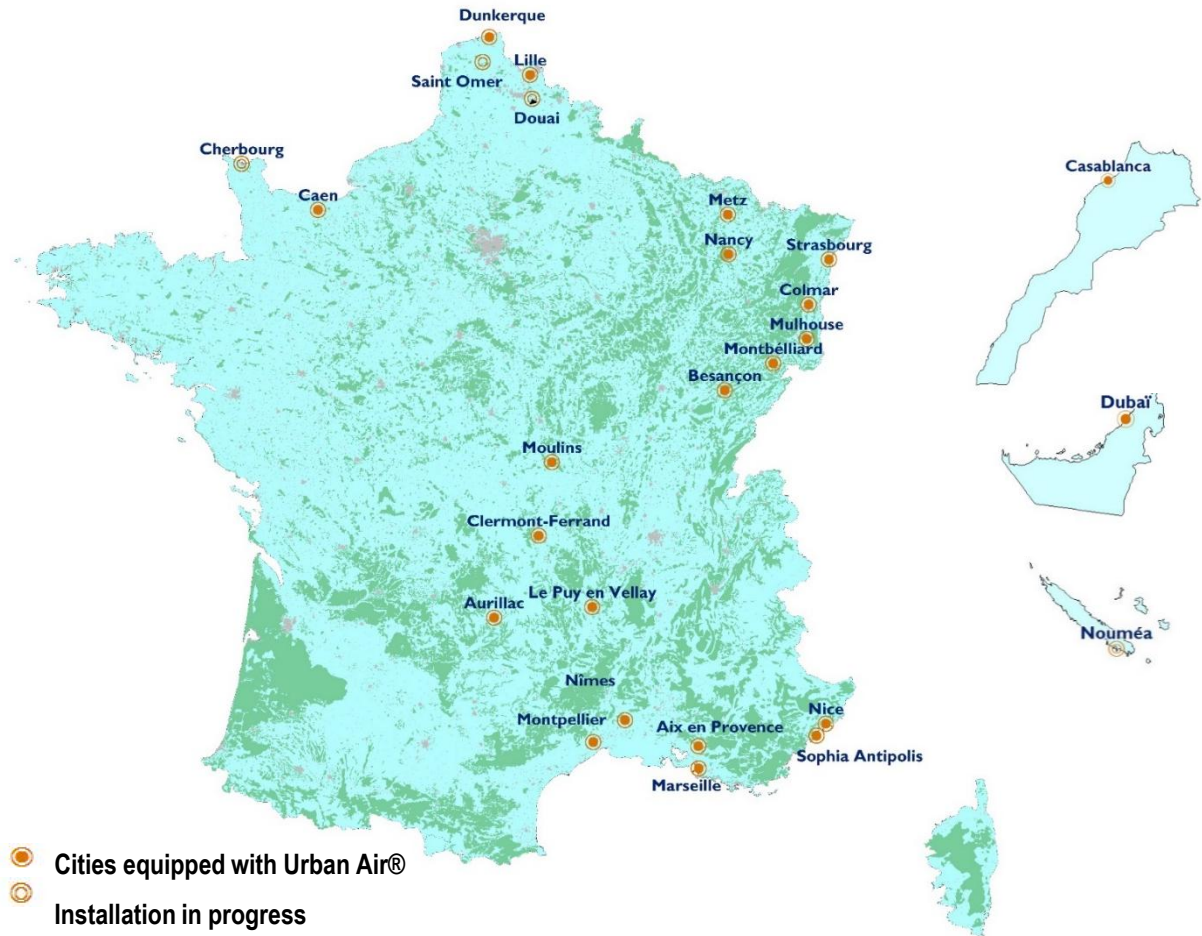


⇒ Publish everyday D-1 (or less) to D+2 maps of concentrations, statistics and/or air quality indexes

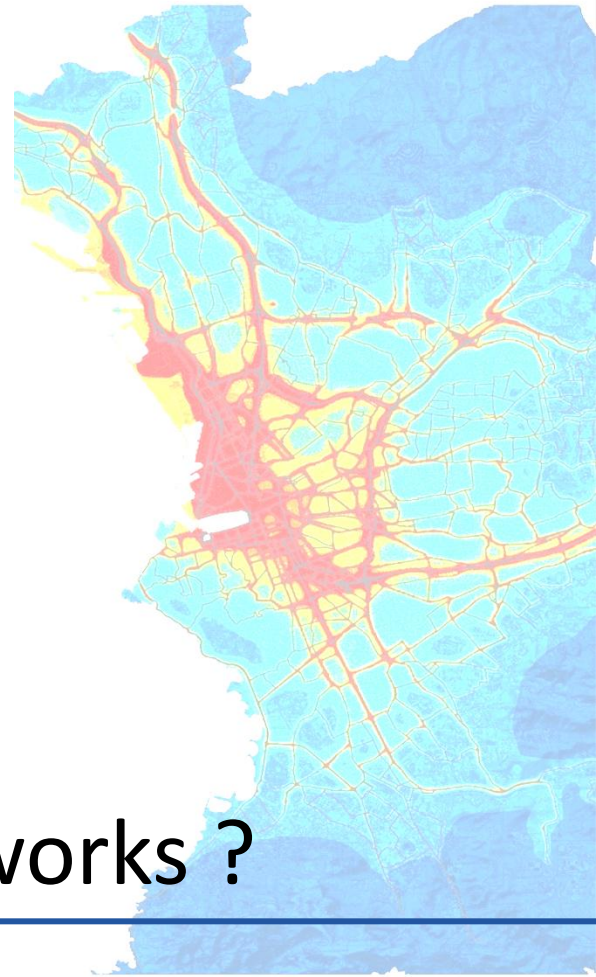
Who is Urban Air for?



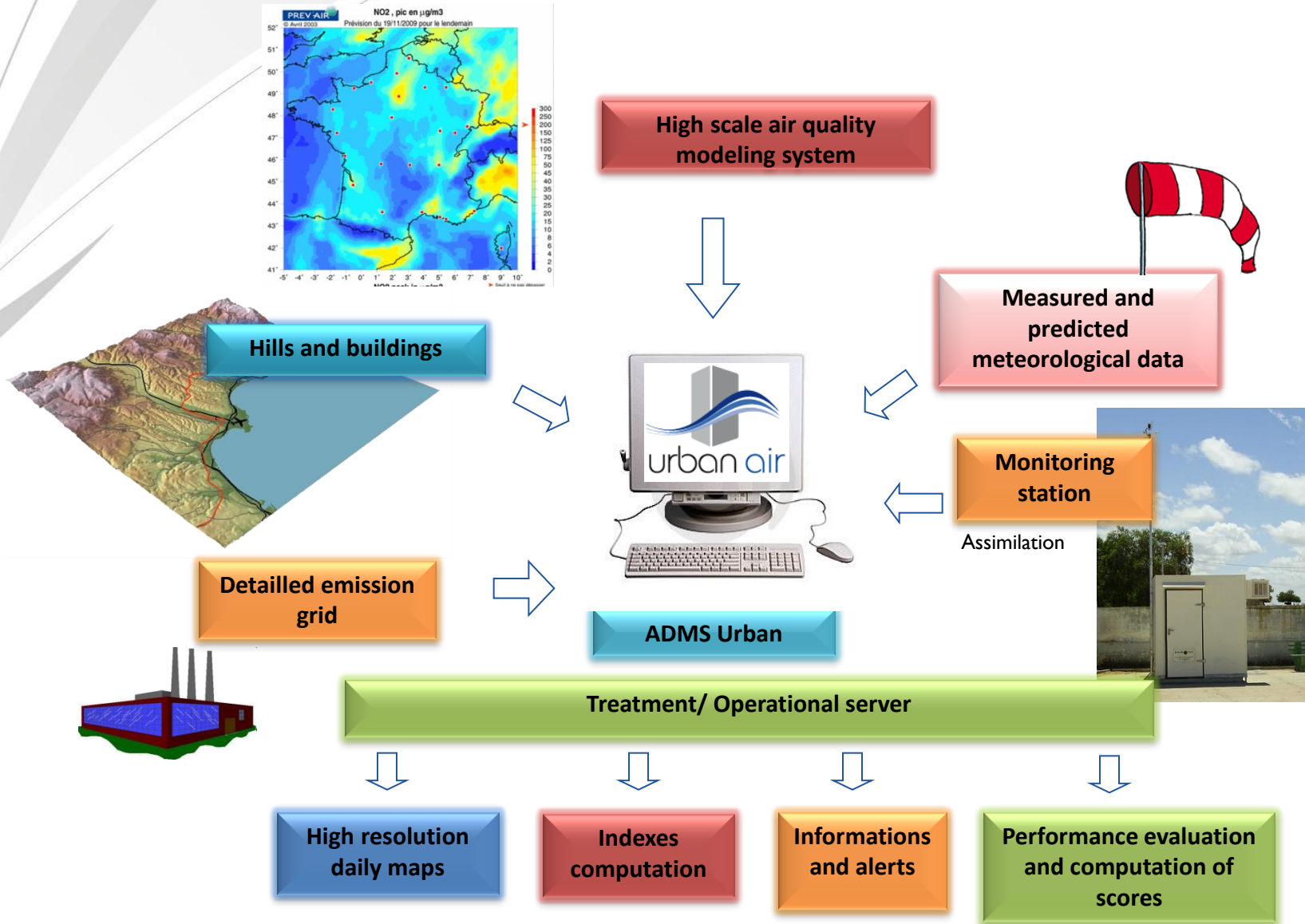
⇒ Urban Air provides daily real-time results and forecasts in more than 20 cities all over the world



How does Urban Air works ?

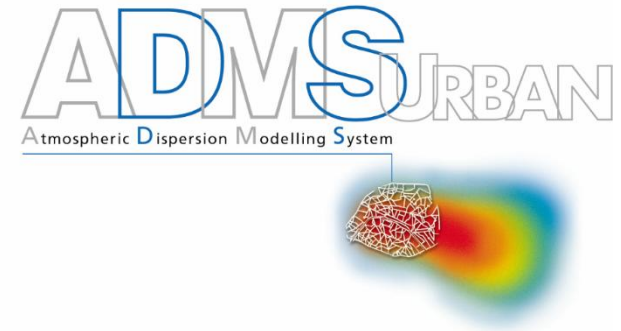


How does Urban Air works ?

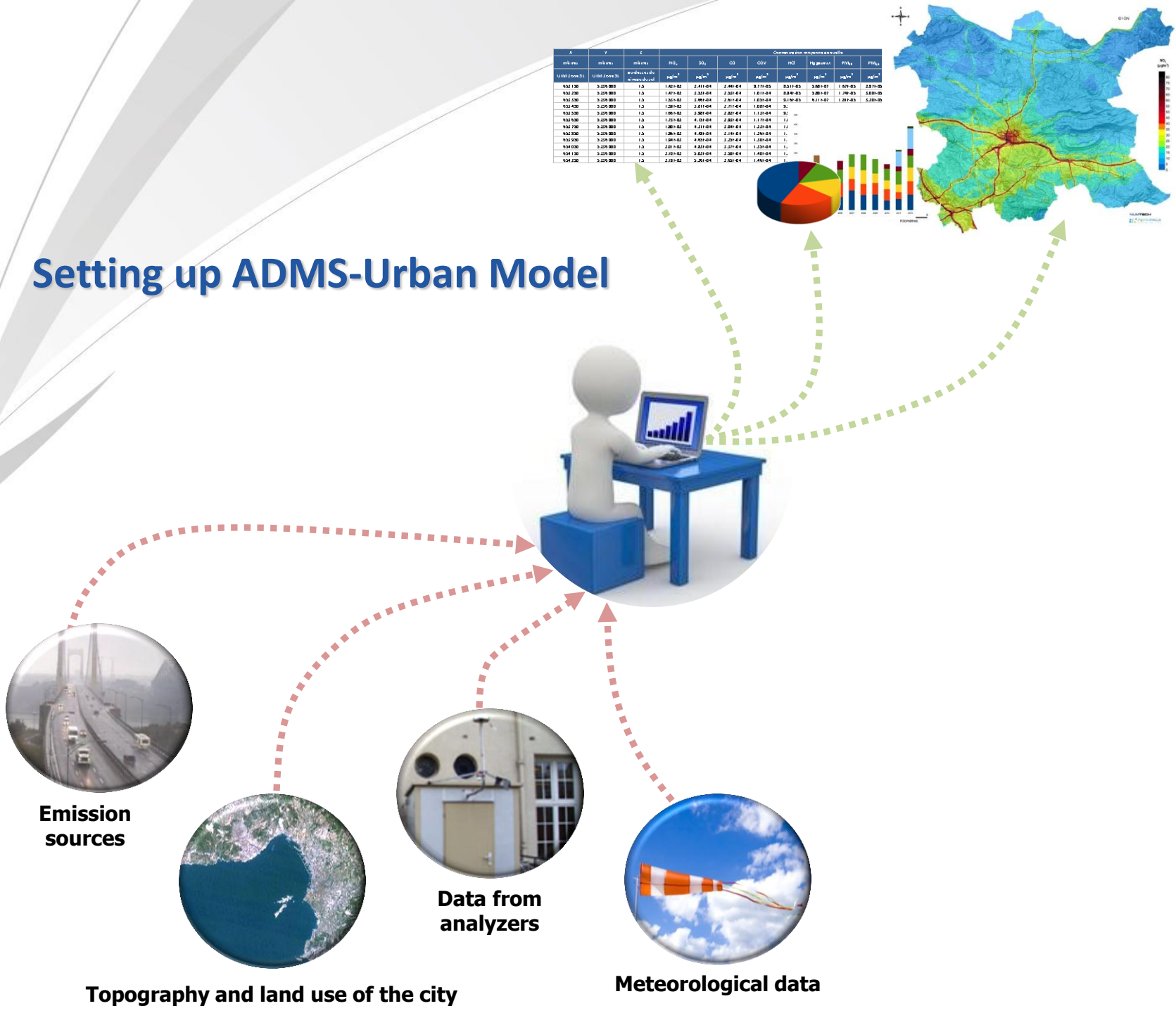


ADMS Urban Model

- **ADMS-Urban** is a state of the art comprehensive Gaussian atmospheric dispersion system for modelling air quality in large urban areas, cities and towns.
- **ADMS-Urban** is developed by CERC (Cambridge Environmental Research Consultants – UK) since 1995.
- **ADMS-Urban** is distributed by NUMTECH since its creation, in 2000.



Setting up ADMS-Urban Model



How does Urban Air works ?

Daily input data
meteo and air quality

collected everyday



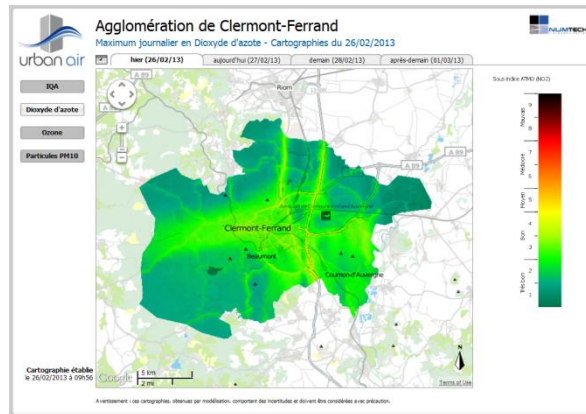
Operational system

Hourly concentration estimation
on the study area, and at monitoring stations (J-1, J, J+1,...)



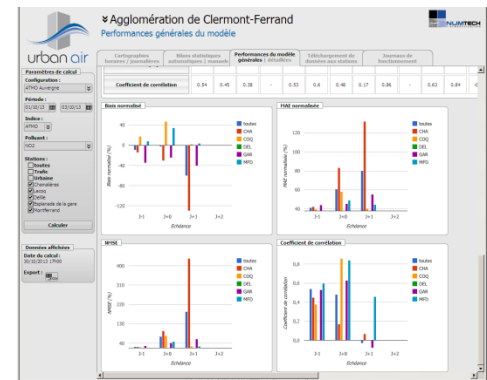
Internet

Indexes and mean concentrations



Intranet

Hourly and daily map visualization
Model performances at monitoring stations
Automatic or manual statistic maps
Data assimilation

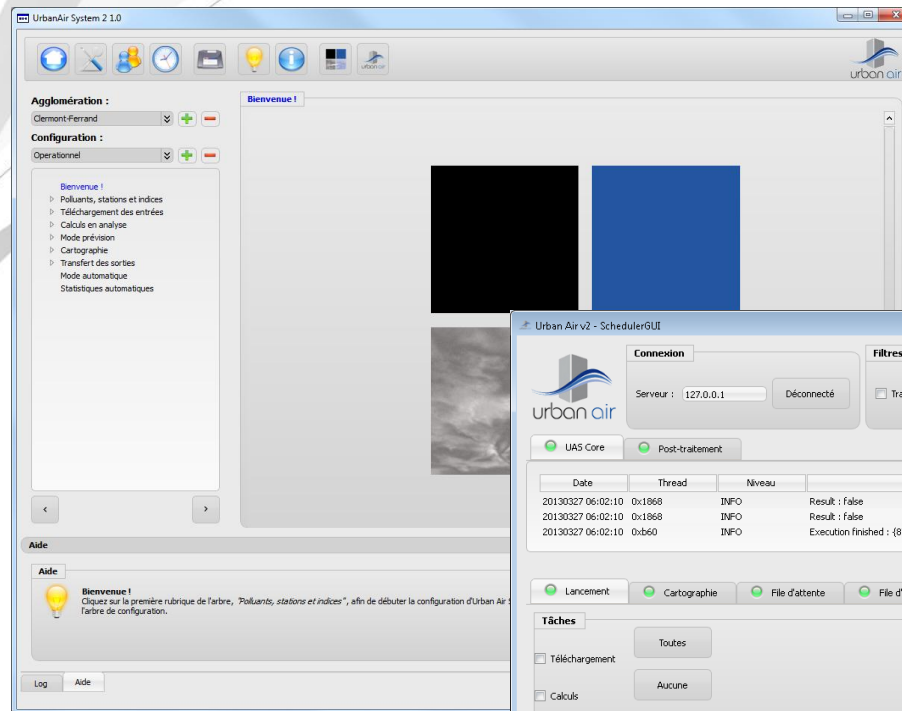


How does Urban Air works ?

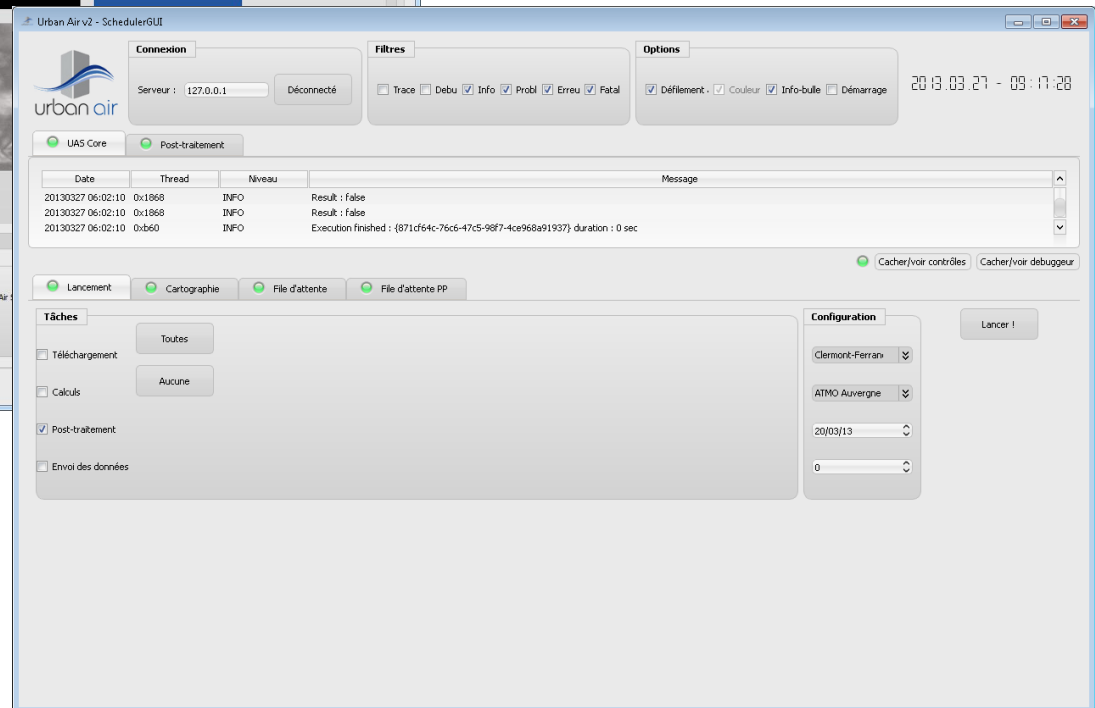


User friendly interfaces

⇒ to configure data collections, outcast and forecast computations, automatic outputs,...



⇒ to manage queues, force new runs,...

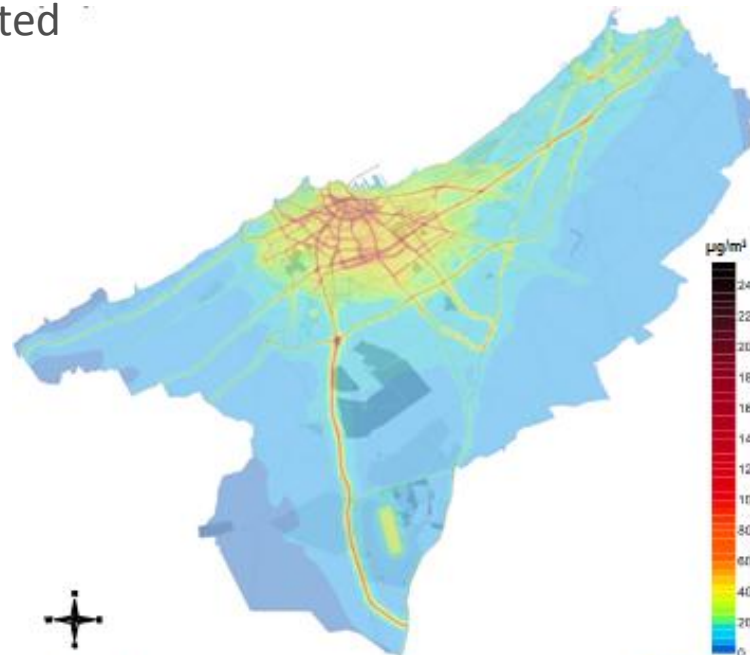


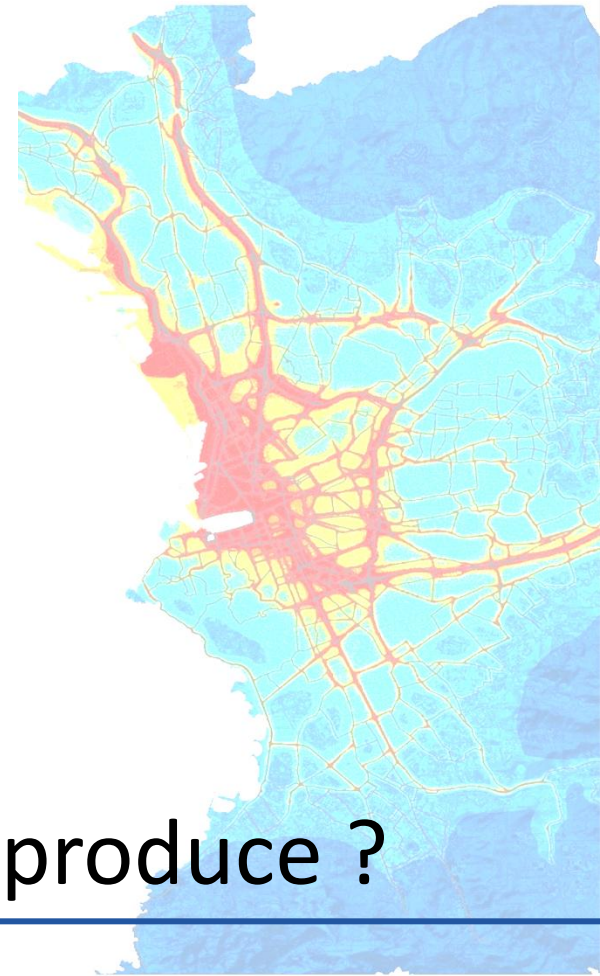
How does Urban Air works ?



Computations should take less than 3 hours (to be able to run 4 dates per day and print it during the day)

- ⇒ Use of multi processor machines : study area is divided, each area is run on a processor
- ⇒ Run are optimized : number of sources and output points per run are adjusted



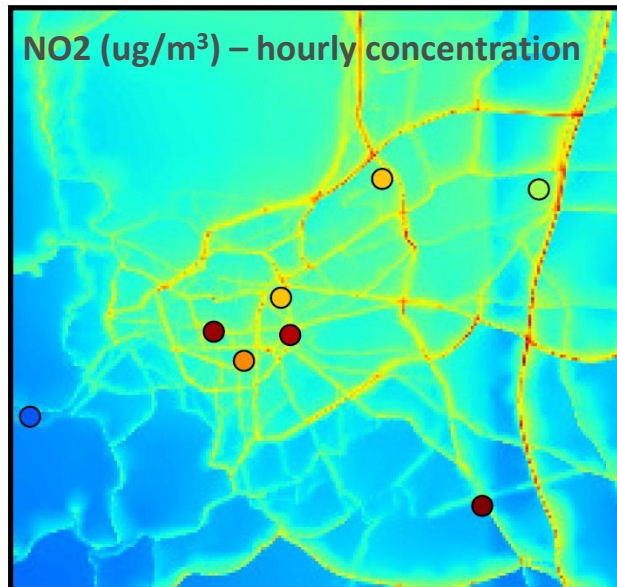


What does Urban Air produce ?

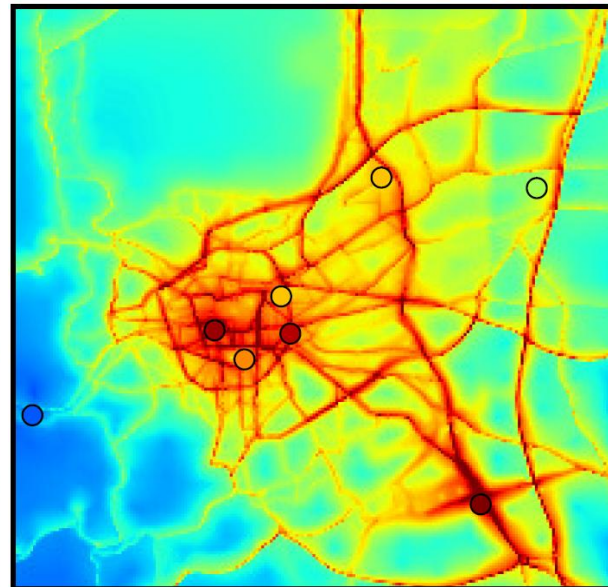
Urban Air Outputs

⇒ Daily maps of concentrations, statistics and/or air quality indexes

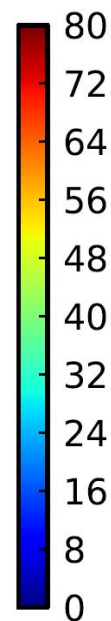
Results can be assimilated : collected measured data are used to correct simulated maps every day



Before assimilation

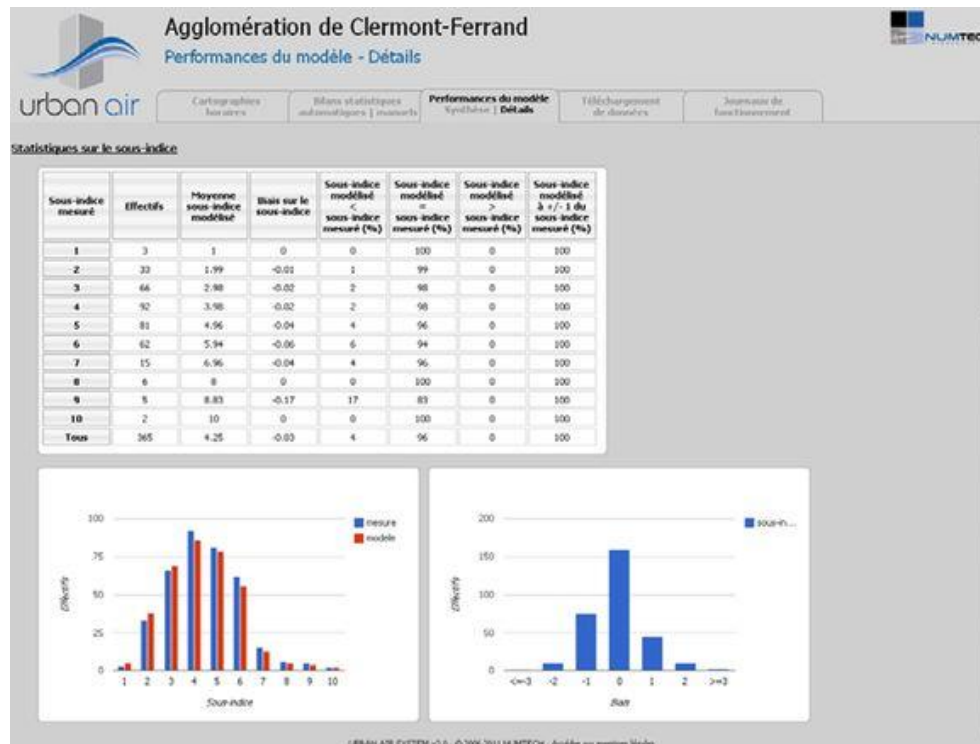


After assimilation

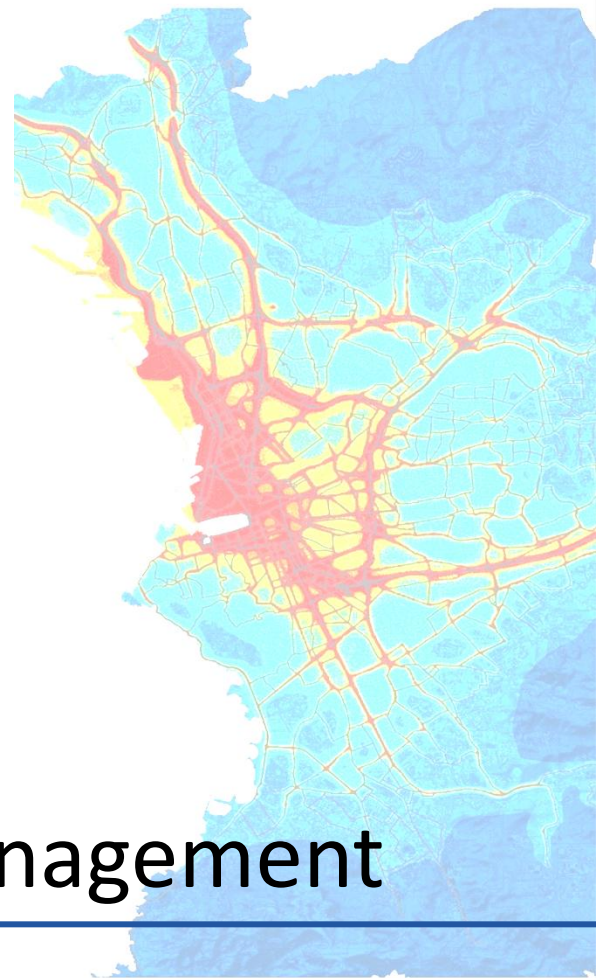


Urban Air Outputs

- ⇒ Calculation of the population and the area of the domain exposed to threshold exceedance defined by user
- ⇒ Model/measure comparison scores



Scenarios management



HEALTHY CITY TRANSITION

Scenarios management



To help public authorities to manage high levels of pollution episodes

- ⇒ Defining different scenarios including emergency measures (low emission zones, alternating traffic, speed limit reduction...)



- ⇒ System performs calculations for each scenarios and determine population exposure in each cases

**AN IMPORTANT DECISION SUPPORT AND COMMUNICATION
TOOL FOR LOCAL GOVERNMENT AUTHORITIES**



urban air

Thank you for your attention !

www.numtech.fr

contact: julien.galineau@numtech.fr

