



# SOFTWARE SOLUTIONS **ADMS Urban**

## URBAN AIR QUALITY MODELLING SYSTEM

### Easy to use

User-friendly interface.

Has links to display systems and GIS packages, i.e. Surfer®, MapInfo®, ArcVIEW®, ArcGIS®.

Import of emissions inventories (in ACCESS or CSV database format).

Integrates its own visualization system: Mapper.

Converts meteorological data and topography datasets.

### A validated model with global recognition

Worldwide recognition; several model/measurement comparisons have been published.

Used in several european (SATURN, HEAVEN, EDEN, Air4EU, HEARTS, FUMAPEX, PROMOTE, etc.) and International research projects.

Used in France and over 200 cities worldwide including London, Beijing, Johannesburg, San Diego, New Dehli, Budapest, Rome, Casablanca, etc.

ADMS-Urban is an air quality modelling system incorporating several models designed specifically to calculate urban air pollutant concentrations. Designed to work at a range of scales, from street-scale to city-wide scale, ADMS-Urban is the benchmark system for quantifying population exposure to urban pollution sources, i.e. road traffic and transport, industry, domestic commercial, etc.

### Air quality in urban and peri-urban environments

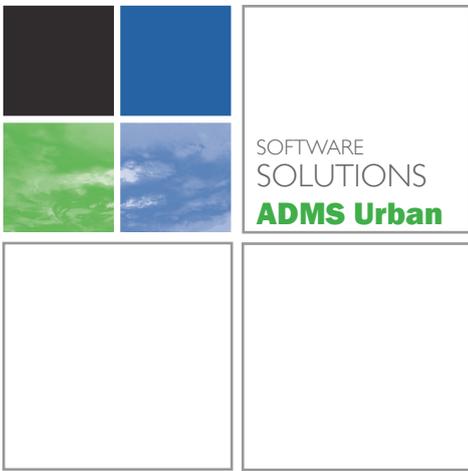
- Air quality at the scale of a road, a neighbourhood or a town.
- City-wide quantification of point exposure to pollutants.
- Reconstruction of pollutant concentrations from traffic or urban background emissions.
- Production of city-scale annual mappings covering a range of pollutants, including NO<sub>2</sub>, benzene, particulates, ozone, etc.
- Calculation of exposure to pollutants around industrial facilities.
- Environmental and health impact studies.
- Monitoring and forecasting of air quality at urban scale (incorporated into the Urbain Air® operational system).
- Link to regional and national modelling systems.



NO<sub>2</sub> concentrations at city-wide scale.

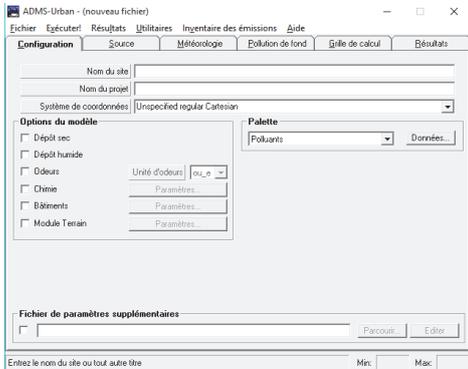
### A decision support and communication tool for local government authorities

- Impact assessment of urban development on air quality.
- Production of mapping documents.
- Air Protection Plans.
- Urban development and urban travel plans.
- Information to urban populations on town-wide air quality (real-time and forecast).



## Technical support

Our engineers provide online technical support, tutorials, and customized advice on how to conduct even the most complex of your studies.



A user-friendly interface



High resolution modelling on the scale of a neighbourhood and until street level

## Recommended configuration

The ADMS-Urban model runs under Windows 7, Windows 8 and Windows 10.

RAM: 1 Go.

Available disk space: 60 Go.

ADMS-Urban is developed by CERC, Cambridge Environmental Research Consultants Ltd.

## A comprehensive modelling platform

### Meteorology

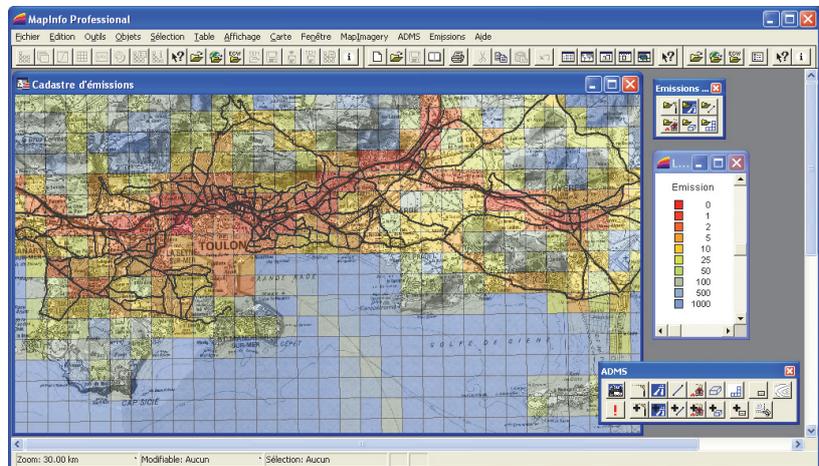
- Vertical and continuous representation of the atmospheric boundary layer (meteorological processor based on the similarity theory).
- Use of statistical or hourly sequential meteorological data. Data can be collected from observed data or from regional met models (MM5, RAMS, etc.).

### Models tailored to urban-scale calculations

- Simple (based on OSPM) or advanced "Street Canyon" model.
- Pollutant dispersion assessments take into account complex terrain and land use.
- Urban photochemical model covering NO<sub>x</sub>, ozone and VOC.
- 3-D wind field and turbulence predictions using the FLOWSTAR diagnostics model.
- Modelling of the ground deposition of gases and particulates.
- Integral modelling of plume trajectories from industrial sources.
- "Building" model designed to take into account the effect of obstacles on the dispersion of industrial plumes.
- "Urban canopy" module allowing to adjust flow depending on urban occupation.
- Effect of noise barriers and tunnels on pollutants dispersion.
- Integration of background pollution at the hourly resolution: observations or output of regional/national models.
- The resolution of the calculation grid near road sources is automatically adjusted to improve mapping results ("intelligent gridding").
- Statistical post-processing module for numerical output: annual averages, rolling averages, percentiles, number of threshold exceedences, etc.

### Extended capabilities

- Simultaneous calculation on 3000 roads (i.e. up to 150,000 road links), 1,500 point, line, area or volume sources, and on a global emission inventory containing up to 3,000 grid cells.
- Option of dividing the assessment area up into several calculation sub-areas for large cities.
- Option of placing receptor points (houses, sensitive buildings, air quality measurement stations, etc.).
- Emission factor time profiles.
- Estimation of the simultaneous dispersion of several gaseous and particulate pollutants, i.e. NO<sub>2</sub>, particulates, benzene, metals, PAH, VOC, etc.
- Incorporation of user emission data or direct link to the EMIT emission management system.



Display of modelled sources via the GIS link