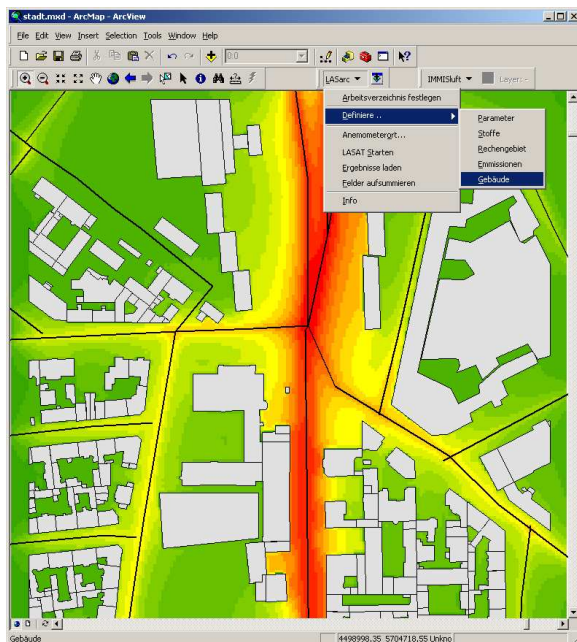


# Dispersion modeling using LASAT<sup>®</sup> in GIS

## LASarc

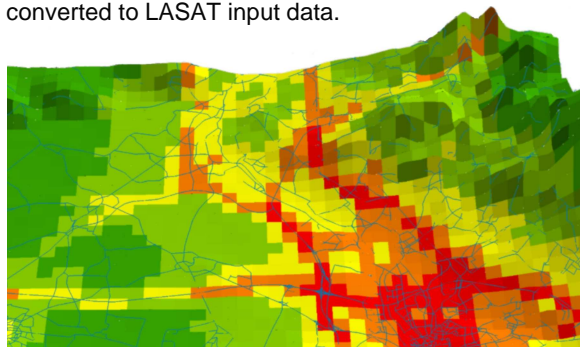
The lagrangian dispersion model LASAT is a complex model for calculating concentrations of air pollutants, taking into account e.g. orography and building structures. LASAT is in accordance with the new German directive on air pollution modeling TA-Luft. With LASarc IVU Umwelt has developed an integration of the model in the geographic information systems (GIS) ArcGIS<sup>®</sup> und ArcView.



Air quality modeling using LASarc in ArcGIS

### Complex source configurations

The setup of calculations using LASAT and complex source configurations is clearly simplified by employing LASarc, since the GIS data can directly be converted to LASAT input data.



Calculation with complex sources and orography

### Modeling using LASarc in GIS

- handling within the known interface of the GIS
- set calculation parameters in dialog
- set pollutant parameter in dialog
- selection and definition of the gridded domain using shape and grid files
- automatic creation of mandatory intermediate grids in case of grid nesting
- cross-project transformation of coordinates for LASAT input and output files to ensure LASAT-compliant coordinate values (e. g. when using GK-coordinates)
- conversion of shape files in LASAT-source files, controlled by the user's specification of important parameters and unit conversion
- automatic conversion of IMMIS<sup>luft/em</sup>-databases into LASAT input files, including the conversion of specific emission data and unit conversion
- direct conversion of GIS data in LASAT building files
- automatic conversion of LASAT results into ESRI-shape files for arbitrary, user defined parts of the investigated domain; conversion of relative and absolute errors is available
- call of LASAT calculations from within ArcGIS<sup>®</sup> und ArcView
- impressive and informative presentation of result, also in combination with existent geo data
- visualization and mapping using the powerful tools of the GIS



Presentation of results overlaid with aerial views



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lasarc.1s.en.doc/02.05.12

More detailed information on LASAT is available on the Ingenieurbüro Janicke home page <http://www.janicke.de/>. Information on IVU Umwelt GmbH is available at [www.ivu-umwelt.de/e](http://www.ivu-umwelt.de/e).

IVU Umwelt offers expertise, studies and consulting for air quality modeling, including data acquisition and preparation, graphical and numerical data representation and documentation, and impact analysis of measures to be taken.