

## Acoustic mapping software

Geomatics understood by acousticians

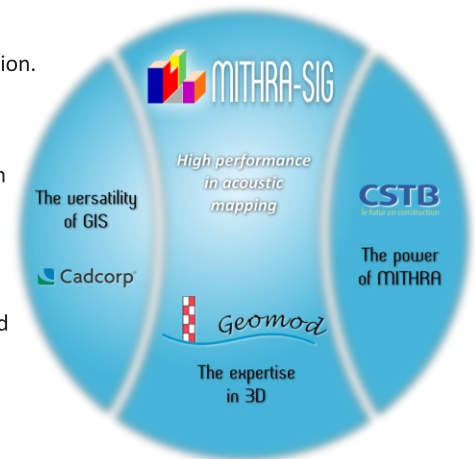
Acoustics understood by geomaticians

**MITHRA-SIG** is designed to compute noise maps up to towns or regions in a single operation.

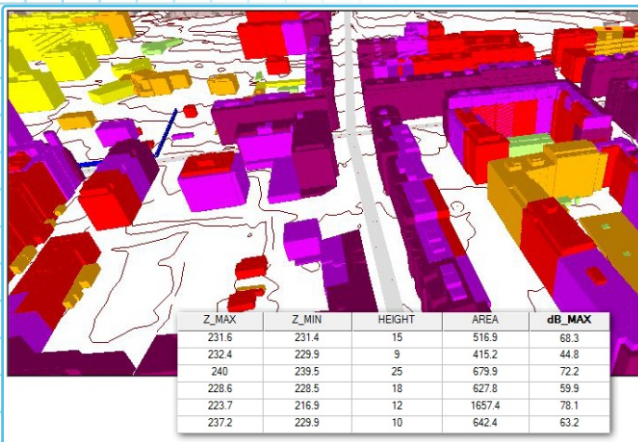
**MITHRA-SIG** results from the collaboration of two specialists:

- ▶ CSTB: well-known specialist with 40 years of research in acoustic - the MITHRA code,
- ▶ Geomod: GIS (Geographic Information System) expert, with a strong reactivity in development and support.

**MITHRA-SIG V3** includes a new calculation engine even more powerful and accurate which allows ray and beam tracing with both horizontal and vertical diffractions. The new version brings a high level of usability, dynamic maps, the 1/3 of octave, an advanced reporting tool...A new benchmark for acoustic in environment!

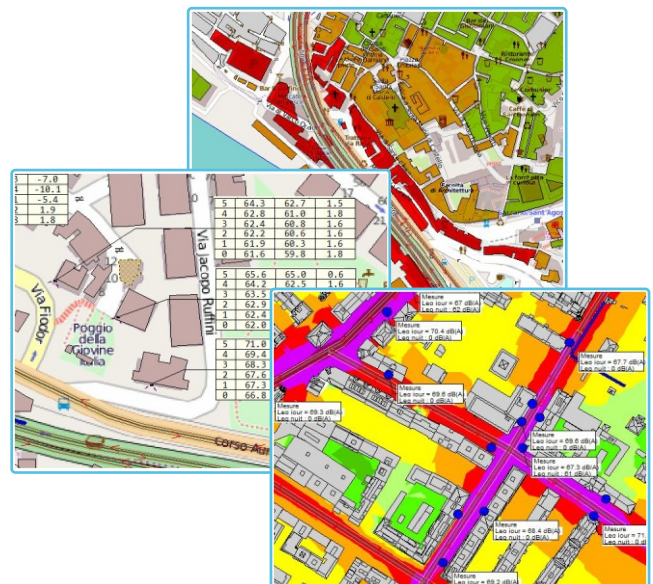


## Main functions



- ▶ Simulation of noise sources: from road, rail (train and tramway) and industry.
- ▶ Calculation of noise levels conforming to EU directive 2002/49/CE.
- ▶ Choice of calculation method: NMPB2008 (octave and 1/3 of octave), ISO9613, NMPB96 (XP S 31133), Harmonoise (1/3 of octave).
- ▶ Creation of dynamic maps: maps on receivers placed by the operator, 2D maps, 3D maps showing noise distribution on building facades and vertical sections. Dynamic maps can also display results "on the fly" as gridded data, equal-loudness curve or polygons.

- ▶ Choice of degree of accuracy: beam shot, ray shot, fast ray shot.
- ▶ Computation of index: Lden, Ldn, Lnight, Levening, Lday, or by hour.
- ▶ Display of labels showing prediction results and measurement campaign data.
- ▶ Data analysis showing maps before and after implementation of noise reduction procedures, e.g. acoustic barriers or traffic rerouting.
- ▶ Creation of threshold maps.
- ▶ Calculation of population affected by noise and calculation of areas by noise levels.
- ▶ Exploitation of the Imagine database (European Imagine project) providing more than one thousand of industrial noise sources.
- ▶ Reading and/or writing of over 160 GIS, CAD, database and graphic formats.



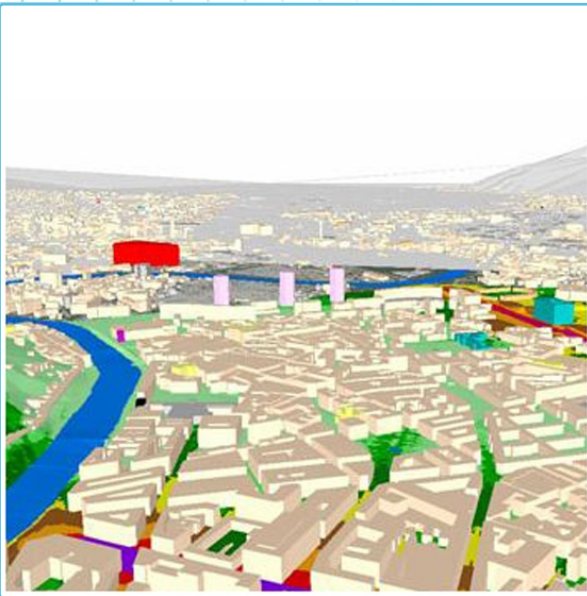
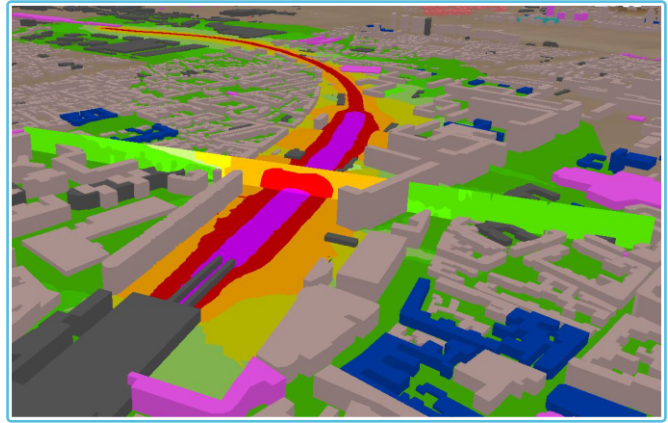
# Modularity

MITHRA-SIG is organised in 4 modules:

- ▶ Road,
- ▶ Rail (train and railway),
- ▶ Industry,
- ▶ Analysis (labels management, combination of gridded data).

3 levels are available:

- ▶ LIGHT: up to 5 km<sup>2</sup>,
- ▶ MEDIUM: up to 20 km<sup>2</sup>,
- ▶ FULL: unlimited.



## Helping decision-making and Communication

**MITHRA-SIG** enables the measuring of the acoustic impact of proposed development indicating the population affected by changes.

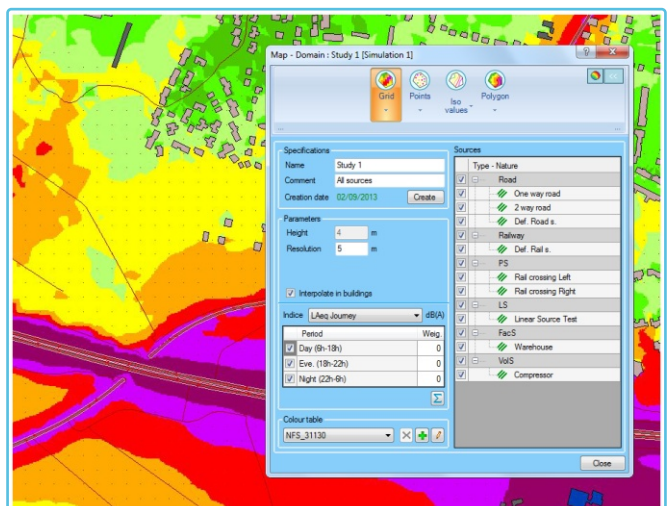
2D maps and 3D visualisations can be used to aid communication and dialogue. They provide clear information for public consultations relating to proposed development.

**MITHRA-SIG** enables the creation of sophisticated maps in PDF format, the export of data for web display, visualisation in Google Earth™ using KML, real time simulation in virtual models.

## Users

**MITHRA-SIG** is used by:

- ▶ Acoustic research professionals,
- ▶ Technical services of local authorities responsible for statutory noise mapping,
- ▶ Technical services of County and Regional Councils, to assess the acoustic impact of construction projects,
- ▶ Government agencies responsible for mapping noise from road and rail.



**MITHRA-SIG** is part of **MITHRA-SUITE** which also contains **MITHRA-REM** for the prediction of population exposure to electromagnetic fields.



- ▶ Distribution
- ▶ Training
- ▶ Technical Support



INGENIA S.R.L.  
via N. Costa 7r - I 16139 Genova  
Tel: (+39) 010 0016466  
Fax: (+39) 010 0016298

[www.ingeniasrl.it](http://www.ingeniasrl.it)  
[segreteria@ingeniasrl.it](mailto:segreteria@ingeniasrl.it)