ACOUSTIC SIMULATION SOFTWARE

FOR OUTDOOR APPLICATIONS

MithraSIG

GEOMOD by COEXYA

CSTB
le futur en construction
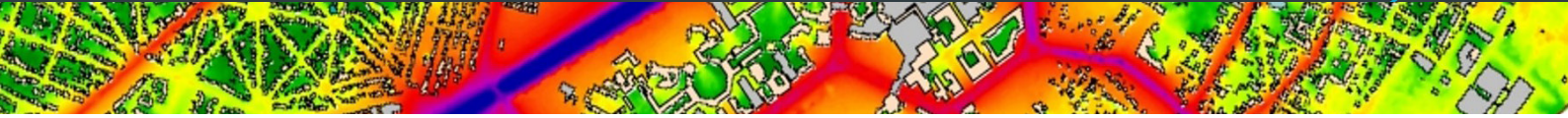
MITHRASIG

MithraSIG is the result of the collaboration between two specialists, the CSTB and Geomod, who have combined their respective expertise to develop a powerful acoustic simulation software.

The **CSTB**, Scientific and Technical Center for Building, renowned expert with over 40 years of research into acoustics, provides state of the art simulation engines in terms of both precision and performance.

Geomod, renowned expert in geomatics, brings its expertise in development and integration, its experience in training sessions, its high reactivity and the quality of its support.

SIMPLE CONSTRUCTION OF YOUR MODEL

**Create easily your model using intuitive interfaces** :

- **Importation and conversion** of data from various organisations and in different formats (SHP, MIF/MID, TAB, DXF, DWG, DGN, etc.).
- An **automatic creation of a project** from SRTM and OpenStreetMap data allowing to create quickly your acoustic project.
- Advanced tools for creating and editing objects.

CLEAR AND COMPLETE RENDERINGS
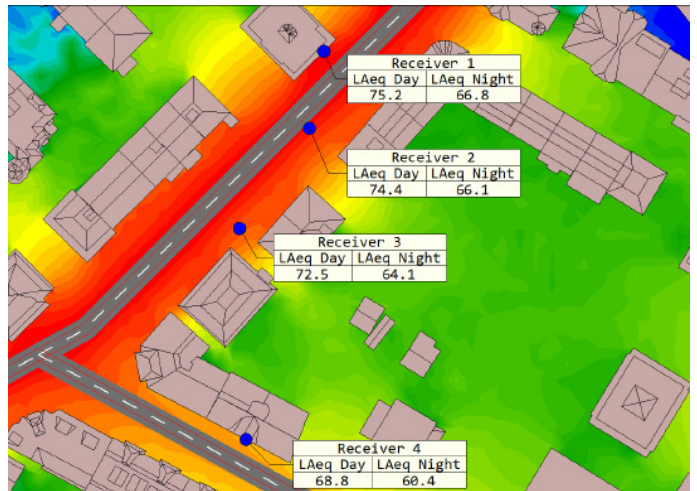
Create **easily** and **quickly** your renderings using sophisticated map creation tools. Simple checkboxes allow you to define all the parameters of a map: indicators, sources, frequencies, color table, rendering type, precision. The visualization of **the map is updated in real-time** when these parameters are changed.

- Presentation of results in tables, polygons / points / lines / grids maps, 3D views.
- 4 map types: **vertical** sections, **horizontal** sections, building **facades**, and punctual receiver maps.
- Creation of differential maps: before/after implementation of an infrastructure, speed changes, tables of value on receivers.
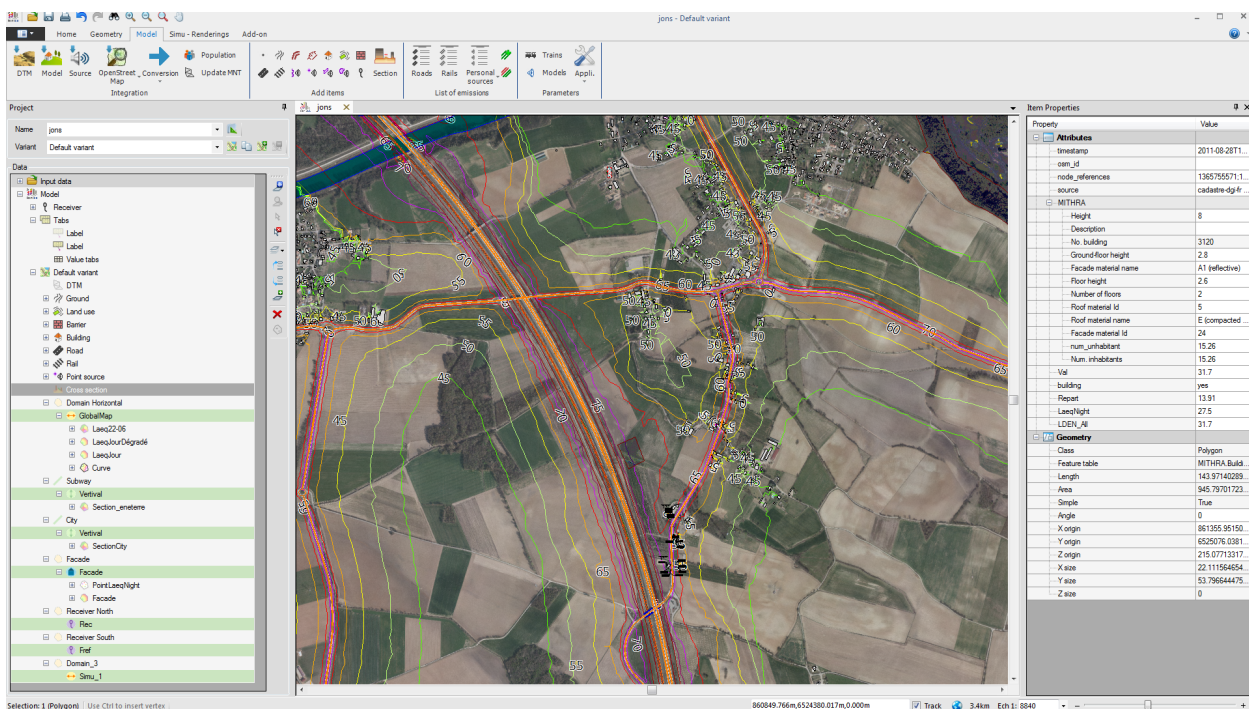
FAST AND ACCURATE SIMULATIONS

MithraSIG is based on the knowledge of the CSTB and combines **speed and accuracy in simulation**.

The simulations of the propagation of the acoustic waves of MithraSIG are performed using powerful algorithms based on asymptotic methods, such as ray propagation and adaptive beam propagation.

These algorithms are equally suitable for prediction in:

- An enclosed environment like a **urban area**.
- An open environment with **vast spaces between buildings**.
- A non-flat areas where the **terrain topography affects propagation**.

COMPLIANCE WITH STANDARDS

The physical simulation engine of MithraSIG computes noise propagation according to the requirements of current regulations, taking into account the effect of **meteorological conditions**.

- Geometric engines ranging from rapid ray propagation to beam propagation enabling diffraction on the vertical edges of objects.
- Calculation methods: CNOSSOS-EU, NMPB2008 (octave and 1/3 octave), ISO9613, NMPB96 (XP S31-133), Harmonoise (octave and 1/3 octave).
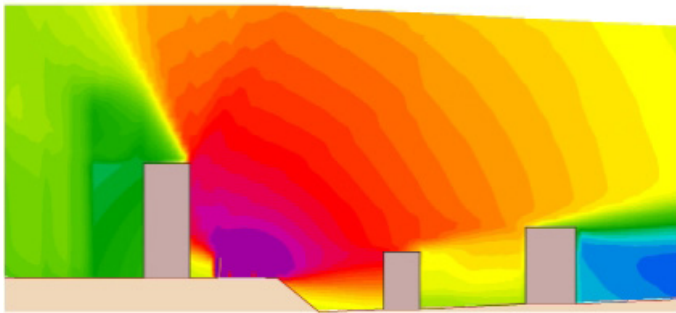
PRICING : SIMPLICITY AND CLARITY

For simplicity and clarity, MithraSIG is distributed in only one version, integrating all the features. The pricing of the licence remains only on the maximum number of objects allowed in a model: 100 / 1,000 / 10,000 / 100,000 or unlimited.

Only acoustic sources count: buildings, acoustic barriers (walls / retaining walls) and land uses. All the others the objects, in particular the objects generating the terrain, do not count.

Is the size of your projects increasing? Simply upgrade to a higher licence level.

THE SOLUTION FOR ALL YOUR PROJECTS

MithraSIG is suitable for the acoustic simulation of a **city**, an **urban area** or a **department** as well as for carrying out an **impact study** and a local **noise prevention plan**.

The software **includes all the types of sources from the first licence level** (road, rail and industrial), all the functionalities and uses the **"multithreading" technology** and runs in 64 bits.

The railway and tramway sources exploit the **base of the railway convoys of the SNCF**.

Industrial sources (point, line, facade or surface) use the **Imagine** database (European project) and offer more than **1,200 sources**.
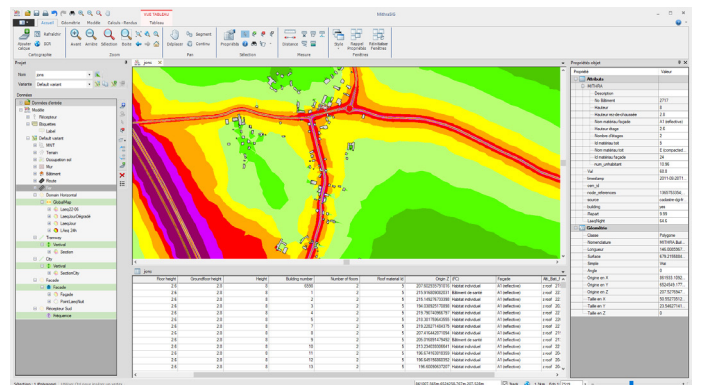
DECISION AND COMMUNICATION SUPPORT

MithraSIG can produce documents of quality for acoustic simulation. **2D and 3D maps are great communication vectors**. They provide an objective advice in public meetings related to new infrastructure or new development.

MithraSIG also allows the distribution of maps produced in various forms, such as:

- **Dynamic PDFs** (with layers, diagrams and geo-referencing)
- **KMZ files** allowing the **visualisation in Google Earth ™**.
- Export to real-time virtual mockup softwares.
- **Export to more than 50 formats**, both vectors and rasters (SHP, TAB, ECW, JPEG, TIFF, BIL, …).