# MithraSound

## Outdoor urban soundscapes prediction

A unique solution for simulating, listening to and measuring the acoustic impact of an urban development project






MithraSound goes beyond a conventional impact studies, providing a detailed analysis of outdoor noise exposure thanks to auralization.

An immersive listening experience coupled with the calculation of event indicators enables comparison of different scenarios for which average level indicators of conventional mapping tools are ill-adapted.

It is particularly useful:
- at the design phase
- at the consultation phase as a communication and decision aid

- **Immersive, realistic sound reproduction of outdoor urban soundscapes using physical modelling**
- **Auralization of all fixed and mobile urban sound sources, notably road traffic and tramway noise**
- **Interactive 3D visualization of the simulated environment**
- **Dynamic traffic flow modelling of vehicle motion**
- **Scenes by manual data entry Coupling with MithraSIG computation engine to accelerate data entry and ensure consistency of results**

MithraSound

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## MithraSound is a unique simulation tool!

Capable of reproducing external soundscapes with extreme precision, MithraSound integrates 3D visualization of the modelled site, and couples quantitative simulation results with an immersive listening experience.
This design, consultation and decision-making tool allows for accurate assessment of the acoustic impact of an urban development and compares different scenarios.

**Contact us today to learn how SAFE Acoustics can support your business.**

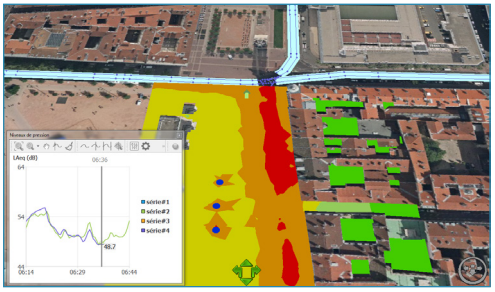
**SAFE Acoustics Ltd is authorized distributor for territories of UK, TR and GCC.**

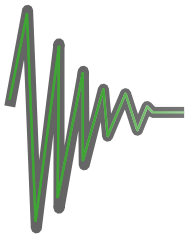
- Contact us for a quotation; info@safeacoustics.com
- **Available as a network license**
- **Available in English and French versions**
- **Best when coupled with MithraSIG.**

MithraSound is the result of several years of research by CSTB acoustic experts. Our team is also available to perform advanced project assessments and other associated services.

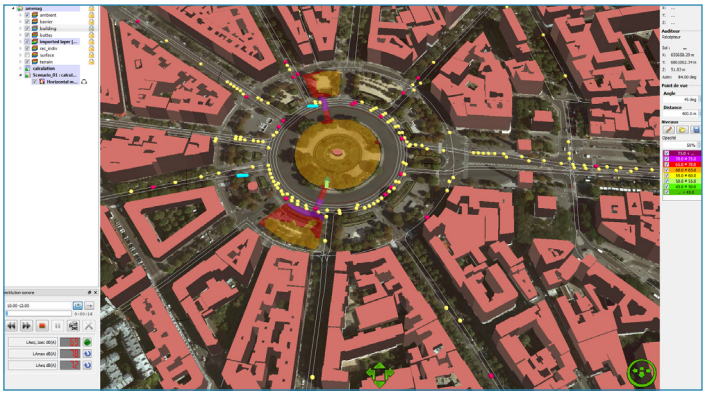
### A true to life sound experience

MithraSound includes both **transportation noise** (light and utility vehicles, tramways) and a **large variety of urban noise-sources** (fountains, cafes, amenities, etc.) which can be supplemented by the user to create his own outdoor urban soundscapes. Urban sound sources can be modelled in several ways: **point or linear sources, moving point sources** along user defined trajectories, or background noise.





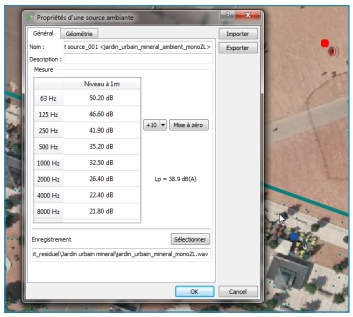
**MithraSound calculates in real time and records the evolution of the instantaneous sound pressure level as would a sound-level meter.**
Standard noise indicators, notably the maximum level LAmax or statistical levels LA10, LA50, LA90 are thus available to characterize the predicted noise exposure.



**Based on a CSTB patented method, MithraSound provides a highly realistic simulation of urban vehicle noise in real time, reproducing the numerous acceleration and deceleration sounds of urban vehicles as they change speed.**

**Vehicle noise is simulated using an integrated real-time traffic engine** which enables numerous parameters to be included, such as management of crossing priorities at intersections, speed restriction zones and of course traffic flow and average speed.

Individual vehicle motion is thus accurately modelled. **Complex traffic networks** built with the coupled MithraSIG software are also available after being imported into Mithra-Sound.



All acoustic calculations in MithraSound use the sound mapping computation engine of MithraSIG. This engine incorporates the standardized methods for outdoor noise prediction. All propagation effects are taken into account in predicting exposure levels and auralizing soundscapes (reflections on buildings, ground effects, road surface type, diffraction through screens).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