AcouS PROPA ®

Software for Acoustic Propagation Modeling Indoors and OutdoorsAcouS PROPA®

SOFTWARE FOR ACOUSTIC PROPAGATION MODELING INDOORS AND OUTDOORS

The AcouS PROPA® software is a simple and adapted tool that allows, through its applications, to cover all fields of acoustic engineering:

- Industry,
- Building,
- Environment.

It is thus possible to transition from room acoustics calculations to environmental radiation calculations while fully retaining data on sources, geometry, etc.

AcouS PROPA® is a modular tool that specifically meets the immediate needs of engineering firms.
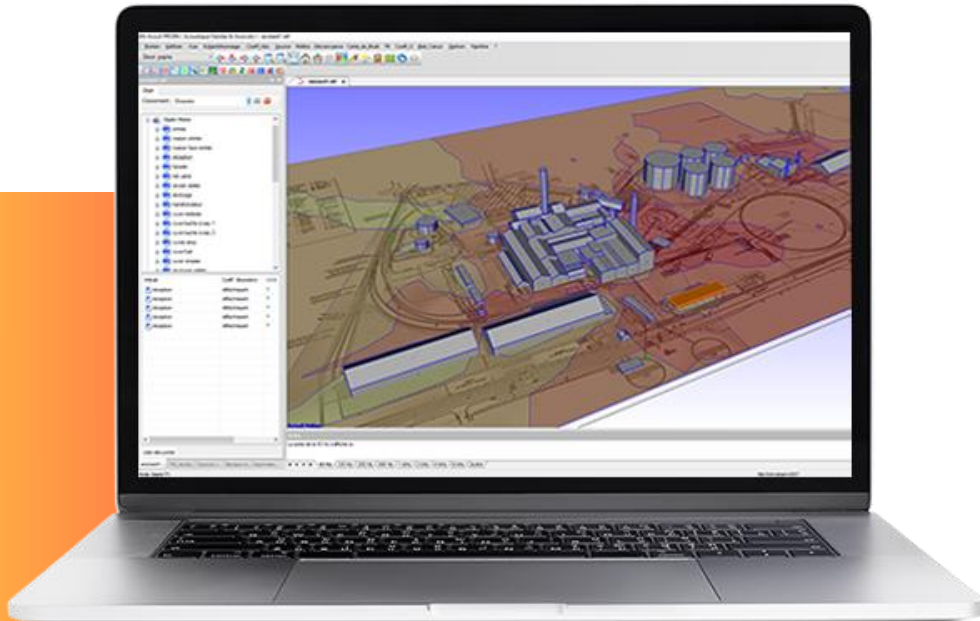

Modular

Adaptable to Your Needs

Scalable

Its user-friendly interface and geometric modeling tools allow users to create any type of volume with great ease. Our daily user experience enables continuous validation through calculation/measurement comparisons.

List of AcouS PROPA® Modules :

- **Core Module:** Basic module (3D geometry modeling, creation of noise sources, definition of calculation parameters).
- **Wall Transparency:** Calculation of sound transmission through walls.
- **Spatial Decay:** Calculated from reference sound sources, comparing calculations to measurements and determining slope between 3 and 24 meters.
- **Noise Map:** Noise map calculations in color, simple or complex topography, with smoothing for a polished presentation.
- **Room Acoustics Criteria:** Calculations of Tr, Echogram, C80, D50, EDT.
- **Long-Distance Propagation:** Calculations considering meteorological conditions in both favorable and unfavorable scenarios.

# THE DIFFERENT APPLICATIONS OF AcouS PROPA® SOFTWARE
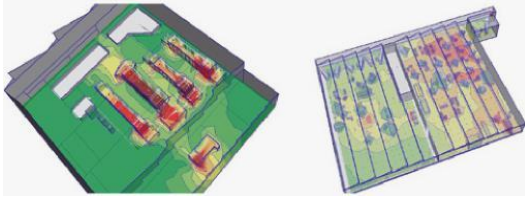
WORKPLACE ACOUSTICS

Calculations of spatial sound decay, noise maps, signal-to-noise ratio, and radiation through walls. AcouS PROPA® has always been equipped with all the necessary functions for this field of acoustic engineering.
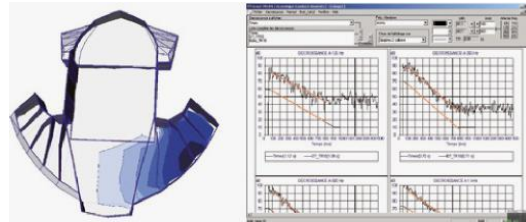
ROOM ACOUSTICS

This module allows the user to calculate key criteria such as C80, D50, EDT, Tr, and echogram, with a time resolution of 1 ms.Calculation-to-measurement comparison is made easier with the ability to import measured time decays and paste them into a spreadsheet.
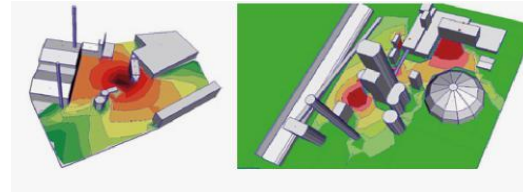
ENVIRONMENTAL ACOUSTICS

AcouS PROPA® calculates outdoor noise maps and includes a unique optional module for computing propagation under favorable and unfavorable conditions, considering wind orientation and speed, as well as atmospheric state (day, night, etc.).More than 100 licensees in France and abroad use AcouS PROPA® daily.

MORE THAN 100 LICENSEES IN FRANCE AND ABROAD USE AcouS PROPA®

AcouS PROPA® is a tool suited to all areas of acoustic engineering

Supported Calculations

- Sound decay, noise maps, gain maps, sound levels at any given points.
- Calculations of incident and reflected power maps on surfaces.
- Transmission calculations through walls.
- Consideration of diffraction at edges.
- Consideration of atmospheric absorption.
- Frequency band calculations and global dB(A) level calculations.

User-Friendliness

- Simple and customizable interface.
- User-manageable database of sound sources and material characteristics, easily transferable.
- Ability to adjust unknown material characteristics based on in-situ Tr measurements.
- Calculation process log, exportable as a text file.
- Microsoft Excel® format file provided.

Consideration of meteorological conditions

Unique optional module for calculating propagation under favorable and unfavorable conditions, considering wind orientation and speed, as well as atmospheric state (day, night, etc.).

Calculation Parameters

- Acoustic power levels of noise sources.
- Directivity diagram (omnidirectional, hemispherical, or custom, in 10° steps).
- Absorption coefficients alpha Sabine (automatic conversion to "calculation" alpha for user convenience).
- CLF format import.
- Atmospheric absorption coefficient.
- Acoustic insulation index for calculating transmission through walls.
- Automatic sample optimization procedure.

3D Modeling

- Integrated 3D modeler.
- Object creation assistance function: parallelepipeds, extruded profiles, point capture by snapping to vertices, etc.
- Topography modeling through triangulation.
- Dynamic 3D visualization, wireframe or surface ("hidden faces"), targeted zooms.
- Image insertion for easier modeling and validation.
- DXF format import-export.

Results Presentation

- Noise maps adapting to topography, in color with customizable palettes.
- Colored noise maps of incident or reflected power on surfaces.
- Noise map presentation modeled as layers that can be instantly replicated.
- Spatial sound decay graphs and customizable value tables.
- Image insertion as background for 3D geometric modeling or noise maps.
- Exportable results.

Optimization of Operator and Machine Time (Parallel Calculations)

- Efficient use of multiprocessors with parallel calculations.
- Verification test before calculation launch to ensure correct implementation of all input parameters.
- Ability to execute batch calculations (successive runs) or parallel calculations.
- Real-time calculation progress monitoring.
- Background processing of calculations.