



// Δ COUS PROPA[®]
THE ACOUSTIC ENGINEERING SOFTWARE

SOFTWARE PACKAGE FOR FORECASTING NOISE LEVELS
IN ENCLOSED AND OUTDOOR AREAS

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The software AcouS PROPA® is a simple and adaptable, its applications cover all fields of acoustic engineering :

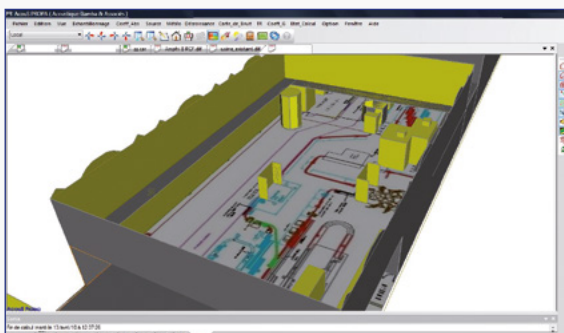
- Industry,
- Environment,
- Construction (room acoustic)

This enables a user to switch from a room acoustics calculation to wall transmission using the same data sources, dimensions and geometry, ...

AcouS PROPA® incorporates various modules that can be used to meet the specific needs of acoustics engineers.
We articulated AcouS PROPA® into different modules that can be combined according to specific needs.

Do you work in different areas of acoustic engineering? All you have to do is to install a particular module adapted to a particular need.

Modular – Adaptable – Open-ended



AcouS PROPA® includes the most powerful calculation modules for forecasting enclosed and environmental sound propagation.

Its user friendly interface and its geometric modeling tools allow the easy creation of all types of volumes.

Its everyday use by our engineers ensures validation calculation / measurement data.

List of AcouS PROPA® modules :

- **Commun core** : Basic module for modeling 3D geometry, the creation of noise sources and the definition of calculation parameters.
- **Transparency walls** : Calculated transmission through the walls, from the calculation of the power incident on the walls and their sound reduction index.
- **Spatial Noise decay** : Calculated spatial sound decay from reference sound sources, comparing measurements and calculations, calculating the slope between 3 and 24 meters.
- **Noise maps** : Calculated noise map in color, in any plane or along a complex topography, with smoothing for a neat appearance.
- **Room acoustics** : Calculations T_r , Echogram, C80, D50, EDT, RASTI, STI calculations comparison measures.
- **Meteorological conditions influence** : Calculations taking into account weather conditions in favorable and unfavorable.

AcouS PROPA® is used by many
acoustic engineers
in France and abroad

3D Modeling

- Integrated 3D software modeler,
- Assistance with object creation : parallelepipeds, extruded sections, point data entry,...
- Topography modeling by automatic triangularization («environment module»),
- Dynamic, 3D single line or surface («hidden surface») display, oriented zooms,
- Image insertion for easier modeling and control,
- DXF import-export format.

Calculations performed

- dB decay, noise and gain mapping, sound power levels at any point,
- Mapping of incidental and reflected sound power levels on walls,
- Calculations of wall structure transmission,
- Diffraction at angles taken into account,
- Atmospheric absorption taken into account,
- Calculations per frequency band and overall level in dB(A).

Influence of meteorological conditions

Innovative calculation module for favorable or unfavorable propagation conditions, taking into account wind speed and wind direction, temperature gradient, ... And/or ISO 9613 calculation (favorable conditions only).

Calculation parameters

- Acoustic levels of noise sources (unlimited number of sources),
- Directivity diagram (omnidirectional, hemispherical or any other, in 10° steps),
- Alpha Sabine absorption coefficients (transformation into transparent alpha «calculations» of users),
- Coefficient of atmospheric absorption,
- Index of noise decay for wall structure transmission calculations,
- Automatic sampling optimization procedure.

Results presentation

- Topographical noise maps with selectable color palette,
- Color noise maps of the incidental or wall-reflected sound power levels,
- Legends, objects, text insertion,
- Noise map presentation model in the form of instant copy plots,
- Full listing of values for separate calculation points,
- Space sound decay in the form of graphs and tables of user-parametered values,
- Insertion of background images of 3D geometric model or noise maps,
- Results exported to desktop / laptop software applications (Word®, Excel®, Open Office, ...).

User-friendly

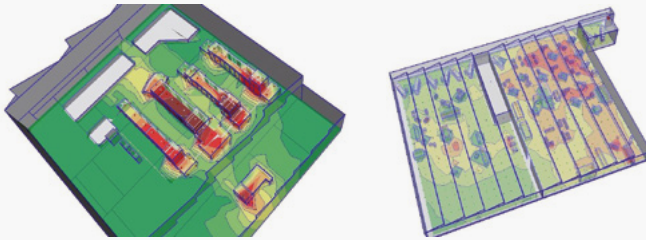
- Simple and friendly interface,
- Databank of noise sources and the characteristics of materials created by the user and transposable as required,
- Characteristics of unknown materials based on in situ measurement of the Tr,
- Listing of ongoing calculations, saved in text format,
- Microsoft Excel® file for transferring noise decay measurements.

Optimization of machine and operator time

- Effective use of multiprocessors with parallel calculation,
- Checking perfect application of all the input parameters before initiating calculations,
- Possibility of batch or parallel calculations,
- Monitoring of real-time calculation progress,
- Background calculations.

Different applications of the software AcouS PROPA® :

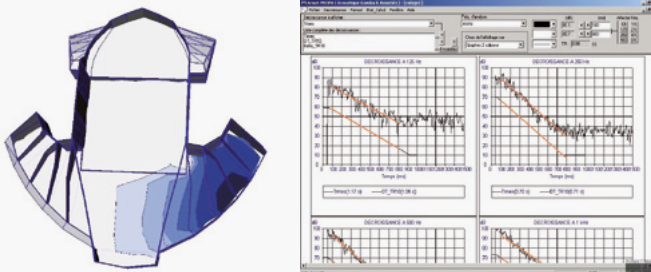
INDUSTRIAL ACOUSTICS



Calculations of dB drop, noise mapping, signal / noise ratio, radiation through walls.

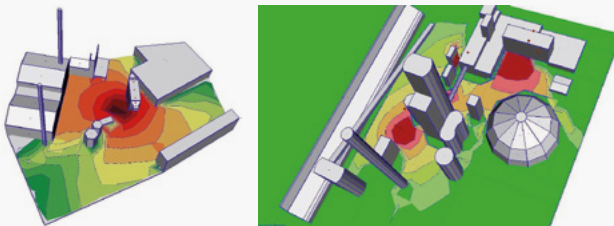
All the functions used in this field of acoustic engineering have been implemented in AcouS PROPA®.

ROOM ACOUSTICS



This module allows the user to calculate the main criteria such as C80, D50, EDT, Tr and echogram with a temporal resolution of 1 ms. Comparison between calculation and measurement data can be facilitated by importing measured temporal decrease from a spreadsheet.

ENVIRONMENTAL ACOUSTICS



Whether working on industrial projects, wind turbines, concert hall or other projects, AcouS PROPA® calculates and plots the noise cartography. It includes an innovative feature covering favorable and unfavorable propagation conditions based on the wind direction and speed, and other data (daytime, nighttime, ...).

