SOFTWARE PACKAGE FOR FORECASTING NOISE LEVELS IN ENCLOSED AND OUTDOOR AREAS
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.

List of AcouS PROPA® modules:

- **Commun core**: Basic module for modelling 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 Tr, Echogram, C80, D60, EDT, RASTI, STI calculations comparison measures.

- **Meteorological conditions influence**: Calculations taking into account weather conditions in favorable and unfavorable.

**Modular – Adaptable - Open-ended**

**AcouS PROPA® is used by many acoustic engineers in France and abroad**
AcouS PROPA® is a powerful tool for use in all fields of acoustic engineering

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

### 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, …).

### 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).

### 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.

### 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.

### 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.
**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, ...).

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