



Simulation • Auralisation • Measurement



Standards Supported

- ISO 3382 series: Performance places, ordinary rooms, open-plan offices.
- ISO 14257: Workplaces.
- IEC 60268-16: Speech Transmission Index

**The complete
software solution
for room acoustics**

www.odeon.dk

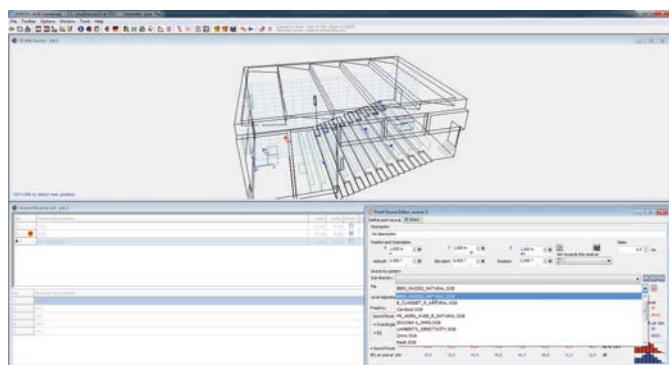
Elegant and user-friendly interface

Easy room import

Rooms can be imported easily and trouble-free from:

- SketchUp, using our free **SU2Odeon** plug-in.
- Most CAD systems, such as Autocad, Rhinoceros, etc. in the .dxf, .3ds or .stl format.

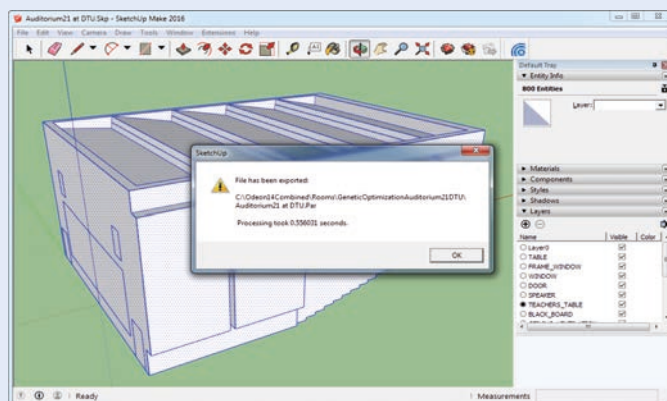
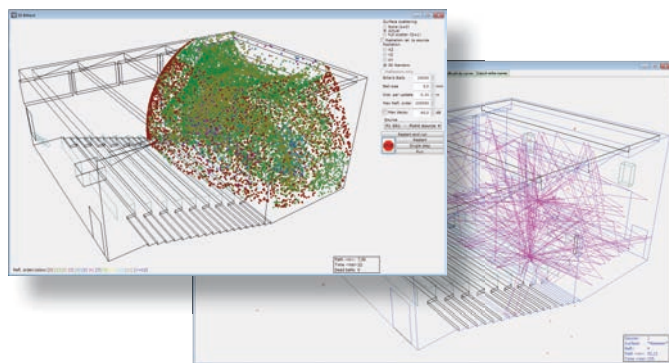
Geometry simplification algorithms can reduce the number of surfaces up to 10 times, resulting to cleaner models and faster computation, without destroying the accuracy geometrical representation.



Materials

A long and expandable library makes it easy to assign materials to surfaces.

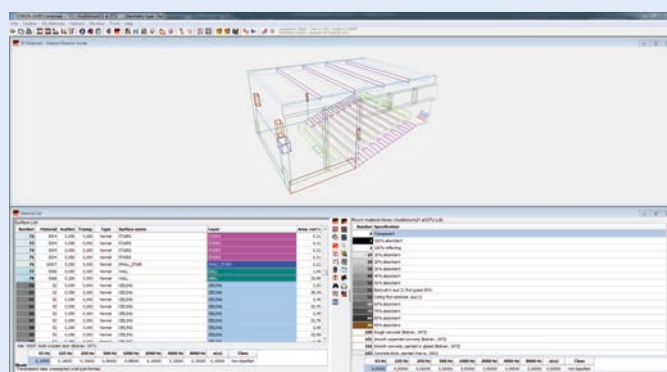
- Materials are described as absorption coefficients from 63 Hz to 8000 Hz.
- Scattering can be applied to each surface, to account for roughness and details that are not included in the model.
- **Transmission** can be applied for sound insulation studies.



Sound sources

Depending on your simulation you can choose among different types of sources:

- Point sources, for definition of loudspeakers or natural sound sources, with a directivity pattern, a power spectrum and a delay.
- Line sources and surface sources, for modelling industrial noise. **I C**
- Array sources, for modelling arrays of speakers. **A C**



Simulation methods

ODEON makes use of hybrid algorithms, optimized for accurate results at modest calculation time:

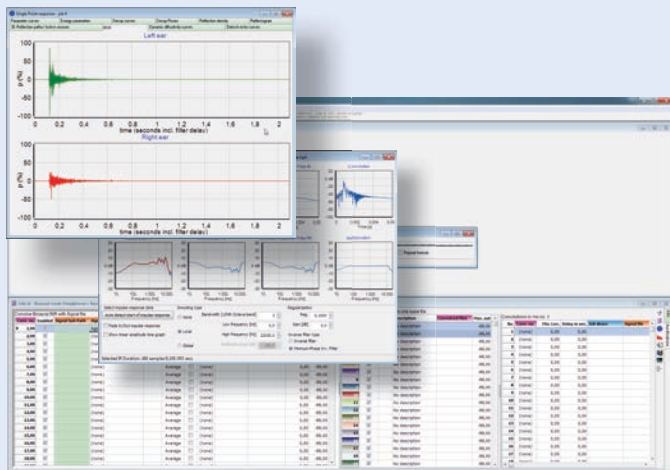
- Image Source Method, for prediction of early reflections.
- Ray Radiosity, for prediction of late reflections.
- Reflection-based Scattering Method, for proper handling of scattering & diffraction.
- One and two point diffraction paths over screens detected for calculation of sound attenuation behind them.

Fast and reliable calculations

Reliable results

Obtain and export astonishing graphics with various results:

- Single-point responses. **A C**
- Multi-point responses with Statistics. **A C**
- Grid colour maps. **I A C**
- Reflectograms and Reflection path analysis. **A C**
- Decay curves and Decay roses. **A C**
- Reflector coverage. **A C**
- ISO 3382 room acoustic parameters.
- Open-plan office parameters (ISO 3382 part 3).



Fully equipped measuring system

Use the same software both for simulating and measuring room impulse responses! All ODEON editions include a powerful measuring system which offers:

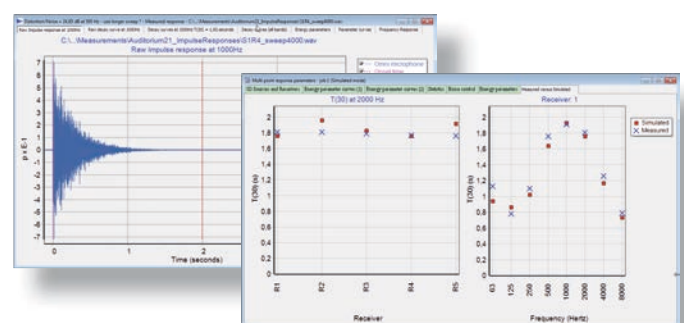
- Recording impulse responses in a room.
- Deriving the ISO 3382 acoustic parameters.
- Comparing measurements with multi-point simulations.



Auralisation **A C**

Listen to your rooms with real audio files and demonstrate acoustics successfully to customers who are not familiar with technical terms.

- Extensive database of .wav files for speech, music and noise.
- Binaural listening through HRTFs.
- Headphone filtering for correcting the frequency response.
- Surround reproduction using 1st and 2nd order ambisonics.
- Mixing facilities for combining up to 300 convolutions and creating soundscapes, which can be saved as .wav files and be presented easily outside ODEON.



Extra tools associated with measurements include: **A C**

- Optimizing materials in a room, using **genetic algorithms**, to match simulations with measurements.
- Calculating any user-defined room acoustic parameter.
- Performing auralisation of audio files with recorded impulse responses.

Note: Unless explicitly mentioned, all features are available in all ODEON editions: **B** Basics, **I** Industrial, **A** Auditorium and **C** Combined.

Available in four editions

for commercial and educational use

B Basics

The edition that includes essential tools for basic room acoustic studies.

I Industrial

Equipped with different types of sources, grid colour maps and noise control facilities, this edition is suitable for industrial acoustic scenarios and basic room acoustics.

A Auditorium

The most comprehensive edition for acoustic simulations of performance places. Includes a full and customisable set of ISO 3382 room acoustic parameters, detailed point responses, auralisation and a genetic material optimizer.

C Combined

The top edition of ODEON includes all available features, combining tools from the Industrial and the Auditorium editions. ODEON Combined is your no-compromising tool for any complex project, from room acoustics to noise control and PA systems.

The software for:
Shopping malls
Concert halls
Auditoriums
Classrooms
Theatres
Meeting rooms
Restaurants
Industrial plants (in/out)
Railway stations
Worship places
Open-plan offices
Urban spaces
and many more...



Start your free trial at
www.odeon.dk

With every new purchase you enjoy 1 year of free technical support and maintenance.



Odeon A/S
Scion-DTU, Diplomvej, Bldg 381,
DK-2800 Kgs. Lyngby, Denmark

www.odeon.dk
info@odeon.dk
sales@odeon.dk