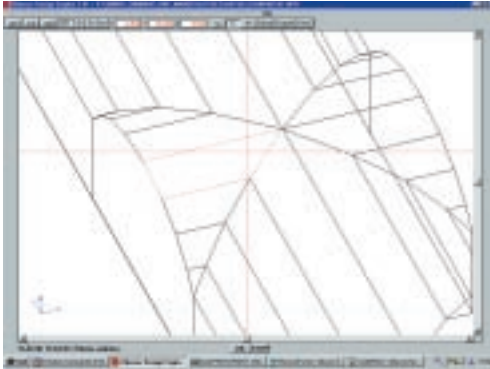


ULYSSES

Acoustic and Sound
System Design:
Simple, precise and swift

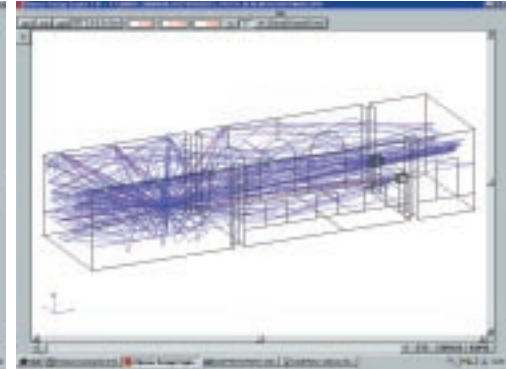
Ulysses' Simulation Parameters



The graphic design of the Ulysses interface enables even the uninitiated to enter rooms and loudspeakers easily and quickly



Assign Absorption to faces by a simple click



Locate surfaces that may cause annoying reflections

Today, detailed predictions on actual performance are indispensable when planning a sound reinforcement system. Ulysses is a highly efficient, powerful tool for sound architects that quickly and precisely simulates room acoustics and electroacoustic performance.

» SPL (Sound Pressure Levels)

Sound pressure levels throughout the listening area are calculated in 7 octave bands from 125 to 8,000 Hz. Direct sound and reverberant field levels, their total and their difference are shown in individual colors. Early reflections may be assigned to direct sound. Total SPL may be calculated by amount or amplitude and phase corrected (complex summation).

» Reverberation Time (RT_{60})

Reverberation time is calculated in 7 octave bands from 125 to 8,000 Hz according to the Sabine, Eyring or Fitzroy methods. Results including or excluding air absorption are shown graphically on top of the frequency bands.

» Time Calculation

The time required by direct sound to reach the listening area is calculated and shown in colors throughout the listening area.

» Intelligibility

The articulation loss of consonants (% Alcons) and the corresponding STI values are calculated and shown in colors throughout the listening area.

» Raytracing

Raytracing up to the 40th order (up to 3rd order by mirror source imaging, higher orders by particle model) may be accomplished at any node of a room. The results are shown in a 3D model. The corresponding energy response is shown graphically in the level-time-curve.

» Auralisation

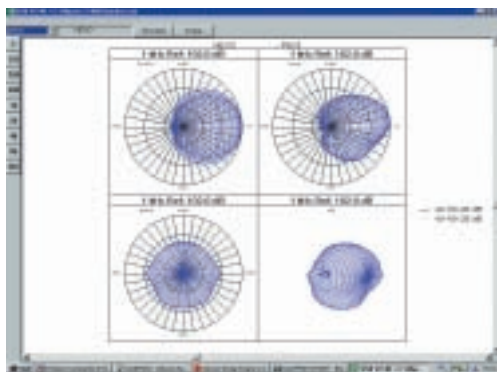
Any wave file may be transformed by the energy-time-data and for listening purposes. Clicking any node within the listening area starts a real time auralisation with a simplified algorithm.

» Cluster Calculation

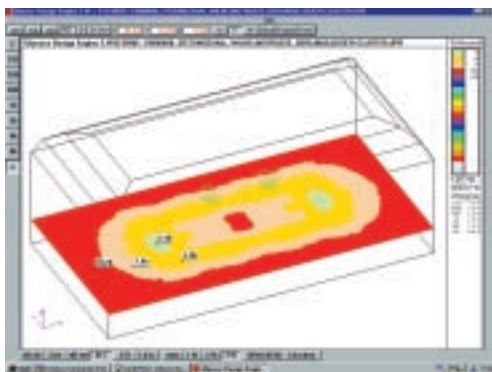
Selected loudspeakers can be combined into a single virtual speaker that can be saved as an individual loudspeaker data file for further processing.



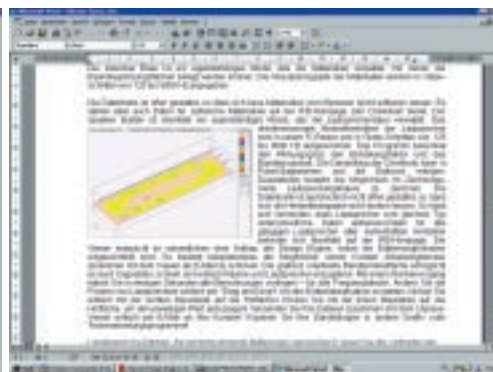
Ulysses' Modules



The Speaker Builder shows polar plots or 3D balloons of newly calculated loudspeaker clusters



A single operation provides all calculations within a few seconds – for all frequency bands



Copy your presentations into other graphics and word processing programs



Design Engine

The Design Engine is the main program to draw models. This is also where materials are assigned to surfaces and loudspeakers are integrated. All calculations for all octave bands from 125 to 8,000 Hz can be accomplished in a single operation.

The results of level and time calculations are shown as individually colored zones within the listening area. Individual buttons switch easily between frequencies and corresponding values to be shown. Results may be printed directly or copied into other graphics or word processing programs.



Absorber Base

The Absorber Base is an independent module which manages materials for covering room surfaces. Their absorption characteristics are listed in octaves from 125 to 8,000 Hz.

For easy user editing of new materials the Absorber Base has been designed with an open architecture. In addition, the IFB homepage provides a multitude of material data for download.



Speaker Builder

The Speaker Builder is also an independent module which manages loudspeaker data.

Their 3D coverage is listed in a 5° step grid in octaves from 125 – 8,000 Hz. The program calculates efficiency, directivity factor and off-axis rejection. Directivity is shown in both polar plots and 3D balloons. In addition, loudspeaker enclosures may be drawn in the drawing menu.

To prevent accidental changing of manufacturers' specifications this data base maintains a closed architecture. Thus, identical data will always be shown for loudspeakers of the same type. The IFB homepage provides data for all current models of more than 50 loudspeaker manufacturers.



Viewer

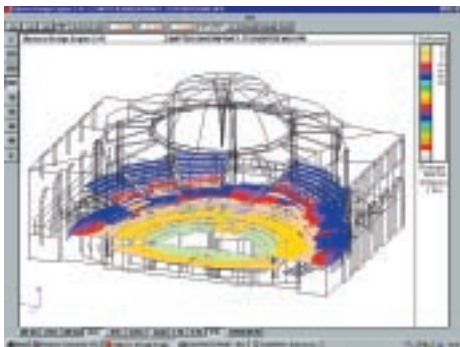
The Viewer architecture is essentially identical to that of the Design Engine albeit with limited editing functions. Processing results including the Viewer may thus be sent by e-mail to your customers.

Technical Specifications

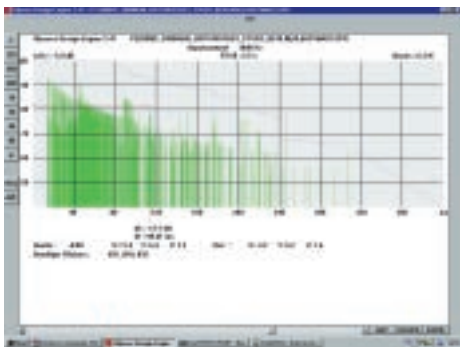
HARDWARE AND SOFTWARE REQUIREMENTS

Detail	Minimum Requirements	Recommended
CPU	80486DX	Pentium, MMX, K6...
Clock Frequency	—	>166MHz for auralisation
System	Windows, 95	Windows, 95/98/NT/2000/Me*
RAM (Win 95)	16MB	>=32MB
Graphic Resolution	640 x 480	>=800 x 600
Colors	256	>=65.536 (High Color)
Graphic Input	Mouse, Trackball, Digitizer	
Soundcard	16-bit, 44.1kHz (for auralisation only)	

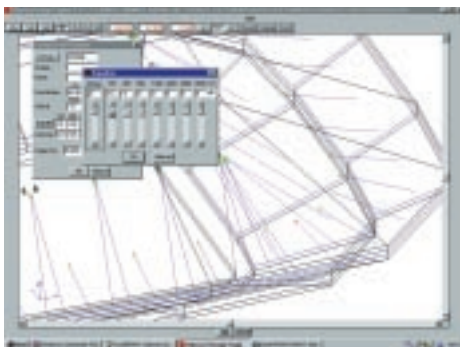
*also Macintosh, with Win-Emulation



ULYSSES allows fast and easy handling even on very complex models



Impulse Response including Schroeder-Plot for in-depth analysis of architectural acoustics and sound system design



Convenient editing of speaker position, aiming, level, delay and equalisation



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