

3D acoustic impulse response – measurement and visualisation.

The IRIS measurement system, developed by Marshall Day Acoustics, enables 3D impulse responses to be captured through a single tetrahedral microphone array and a USB audio interface. Measurements are analysed immediately through powerful and user friendly software.

IRIS plot

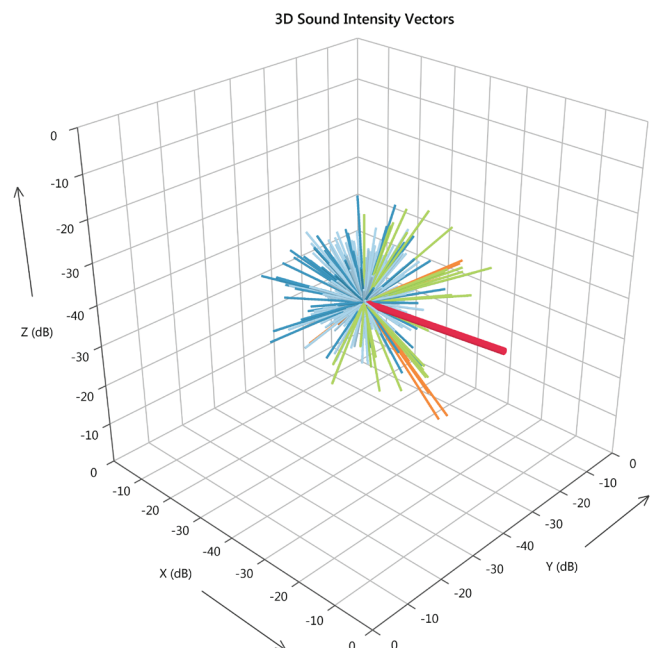
- 3D colour-coded representation of sound rays
- Length indicates relative sound intensity level, angle is the ray direction, and colour represents time of arrival
- 3D rotation and zoom
- Dynamic range and time resolution adjustment
- Specific angle and level information for individual rays
- Broadband and octave band filtered views

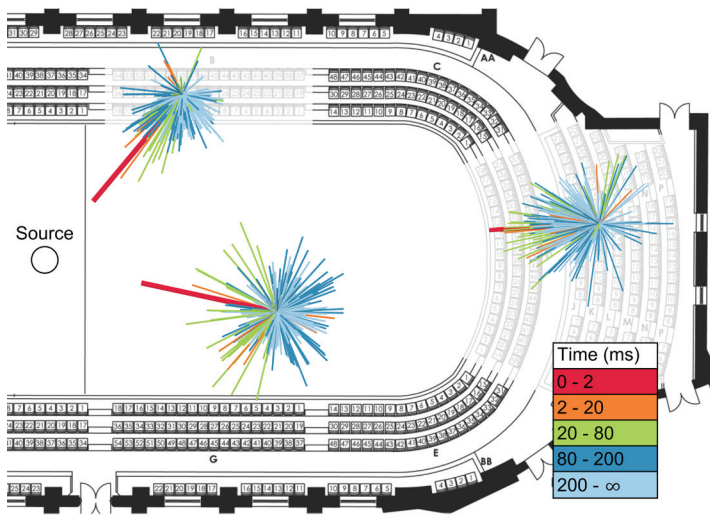
Impulse response

- Traditional omni-directional waveform view
- Interaction between the IRIS plot and waveform view
- Automatic detection of onset time with manual adjustment
- Calculate standard acoustic parameters according to ISO 3382-1

Simplified measurement process

- Integrated software and hardware measurement system
- Reliable, user friendly and efficient





See what you have been hearing

The IRIS plot can be used to relate sound rays to physical features of the room, observe the directional distribution of early and late sound energy, and identify surfaces causing problematic rays. The graphical nature of the IRIS plot enables easy comparison between different seats in a room.

Numerical magnitude, direction and time information may be obtained for a comprehensive analysis of individual rays. A standard impulse response waveform is provided, and the timing of individual sound rays from the IRIS plot may be identified in this view.

Elegant measurement process

The IRIS measurement system utilises a compact tetrahedral microphone array. The four channel signal is carried by a single cable to a USB audio interface. All information including level, direction and time is captured with a single sine sweep recording. The system has been designed by practising acousticians for reliable and efficient measurements in real-world situations.



For more information contact: daniel.protheroe@marshallday.co.nz

