ACOUSTICS AND SOUND DESIGN

LEA is the premier software solution for sound simulation, analysis, perceived quality and playback.

PLACE THE HUMAN AT THE CENTER OF YOUR PRODUCT DEVELOPMENT
LEA allows recording sounds and studying how humans perceive them using standardized and state-of-the-art indicators of sound quality and perception.

IMPROVE YOUR PRODUCT’S PERCEIVED VALUE
LEA provides user-friendly solutions to identify the key elements in the perception of your sound. It allows you to efficiently create and play the perfect sound, ultimately developing an emotional brand attachment.

LEA is the perfect tool to study the perceived value of your products through the sound. Open LEA, record your sound and explore its perception with specialized toolboxes and design tools.

Stéphane Molla - Product Manager | GENESIS
LEA is a one-stop solution for the study and improvement of your product’s sound: audio and telecom systems, home appliances, automotive engine sound, fly-over noise, airplane cabin and cockpit, simulators, noise identification for railways, industrial and defense engines...

Sound is everywhere, bringing us information and emotion, alerting us to potential threats and giving us the feeling of quality and comfort.

To consumers, the sound of a product triggers a sensorial and emotional response, which has a direct impact on their buying decisions.

A product’s sound provides information about the quality of the materials used and its craftsmanship. This is a selling point for your product and it is crucial to be able to control its impact.

WHY DOES LEA MAKE THE DIFFERENCE?

- Identify the components of the sound and investigate their influence on human perception, individually and as a whole.
- Analyze recordings, determine acceptability and build an indicator of quality.
- Seamlessly integrate into your current process.

Sound level is just one parameter influencing the sound comfort. Measuring and controlling it is a step further. It is more effective to reshape a sound rather than simply trying to reduce its level.

LEA allows you to control and improve the perceived sound quality of your product while modeling its sonority. LEA gives you the ability to try many “what if” scenarios and make the right decision much earlier.

POWERFUL: Time-frequency sculpture helps us in obtaining a precise and clean sounds database in a simple and quick way, avoiding costly recording sessions on the test track.

Manager - Acoustics Perceived Quality dept. | RENAULT

LOOKING FOR THE PERFECT SOUND

- Tailor the picture of your sound
- Create distinctive sound signatures
- Enhance customer experience
UNDERSTAND
PERCEPTION

TOWARDS A CLEARER, MORE POWERFUL AND LARGER-THAN-LIFE SOUND EXPERIENCE.

Calculate crucial metrics affecting overall quality and perception of the sound of a given environment or product. LEA calculates international standardized indicators and mainstream models from the scientific literature.

Assess the overall perceived sound quality through a single indicator: LEA offers the possibility to define a quality index, taking into account loudness, sharpness, roughness, fluctuation strength.

I use LEA to quickly calculate a wide range of psychoacoustic indicators. It is important for us that LEA integrates specific indicators, as tonality indicators for example, to convince our suppliers to integrate it in standards.

Acoustic Comfort Expert - Innovation & Research Department | SNCF ACOUSTICS
Explore sound and vibration signals from rotating or reciprocating machinery (engines, turbines, pumps...). Understand how each part of these machines individually affects the sound and vibration pattern of the whole machine.

With ORDERS, you can identify and isolate these sound and vibration patterns to analyze the performance and quality of each machine part. A supervised graphical method for detection of rotating speed profile is also included.

OPTIMIZED ANALYSIS FOR HARMONIC SOUNDS

Explore sound and vibration signals from rotating or reciprocating machinery (engines, turbines, pumps...). Understand how each part of these machines individually affects the sound and vibration pattern of the whole machine.

With ORDERS, you can identify and isolate these sound and vibration patterns to analyze the performance and quality of each machine part. A supervised graphical method for detection of rotating speed profile is also included.

A STEP FURTHER

Real-time sound modeling
Realistic engine sound synthesis
Easy comparison between various setups

We use LEA everyday, mainly for target sound design, psychoacoustic indicator calculations, time-frequency sculptures and playback. LEA also allows us to create new signals to share with the decision makers to validate comfort modifications. In addition, GENESIS has equipped our studio with a playback system that perfectly reproduces the 3D Sound environment inside the cabin. We appreciate the adaptivity of LEA, allowing us to integrate our own indicators for the study of sound quality in helicopters.

Acoustics Engineer - Internal Noise Department | AIRBUS HELICOPTERS
I use LEA to analyze transient electric starter signals, which are short and random. I also use the tool for signal post processing, quantification of acoustic signals, vibration, voltage, temperature, etc. I also study sound quality. In fact, I use LEA for 90% of my work. The same tasks that used to take me half an hour using two or three programs now takes me only two minutes to do with LEA.

Head of Acoustics and Vibration dept. - Powertrain systems R&D center | VALEO

With just a few clicks, you separate the components of the sound, play them and extract the harmonics. Remove the noise from your sound, isolate the perceived shocks and combine them with the harmonics to create a new target. Easily reach the perceived quality and acceptance targets.

**A COMPLETE TOOL**

- Easy operation
- State-of-the-art algorithms
- Denoising
- Partial tracking
- Transient detection
- Mixing board

**DISSECT YOUR PRODUCT’S SOUND**

**UNDRESS YOUR SOUND**

**ACOUSTICS AND SOUND DESIGN**
SPATIALIZE
BINAURAL TO TRANSAURAL SYSTEM

3D Sound Transaural allows the restitution of binaural recordings, in lab or in your office, using only 2 loudspeakers.

Study the perceived sound quality while ensuring maximum restitution accuracy.

LIBERATE YOUR EARS FROM UNCOMFORTABLE HEADPHONES DURING BINAURAL LISTENING SESSIONS.

A UNIQUE SOUND RENDERING TOOL

PERFORMANCE
Highly realistic and natural perception with the feeling of immersion

COMPATIBILITY
Use your existing equipment (dummy head / binaural microphone)

HUMAN-CENTERED
Recommended for listening and jury testing
LEA bridges the gap between sound synthesis, simulators and virtual reality platforms.

STUDIO
Benefit from an accurate spatial sound restitution in your dedicated listening room or lab with GeneSTUDIO.

VIRTUAL REALITY
Shape your sound and integrate it in a VR environment for a fully immersive experience.

DRIVING SIMULATOR
Measure, characterize and model your vehicle sound. Get the most accurate rendering in your driving simulator with GeneCARS.

ENGINE SOUND ENHANCEMENT
Improve and design the interior and exterior sounds of any vehicle type (ICE, EV, HEV) to maximize safety and comfort with ASD. Test it in your vehicle on the road, thanks to GeneBOX.

Through project collaboration aimed at reducing transportation noise and developing energy-efficient technologies, Genesis demonstrates its commitment to a cleaner environment and quieter communities.

GENESIS CONTRIBUTES TO A BETTER WORLD