Recreate the concert in the living room

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Hear music of concert hall quality at any place in the room from a stereo recording. The device created by EPFL spin-off Illusonic creates an "acoustic space."

Music of the highest quality sound that envelops the listener: the device developed by the start-up Illusonic creates exactly this. "Illusion" and "sonic"? These words best describe the result. Listeners, wherever they are in the room, have the impression of being in a concert hall. Stereo sound is ideal when one is situated exactly between the two speakers, and surround sound creates a 3D effect. The device developed by Christof Faller and his company, a spin-off of the Audiovisual Communications Laboratory, offers an "enveloping" sound anywhere in the room. "Conventional systems can convert stereo surround signals, but with low quality. Plus, these systems do not offer much flexibility in the choice of

speaker configurations and positions. The processor converts any content with unequaled quality to speakers, regardless of placement," explains the creator of the start-up at the Science Park in Ecublens.

The surround system reproduces the placement of unique sounds as they were planned in the recording. The goal of the "immersive audio" processor is to reproduce music and dialogue through a configuration of loudspeakers defined by the user, so that the spatial information contained in the recording is triggered not only in the central listening position, but anywhere in the room.

Breaking down the sound to better reconstruct it

The processor decomposes the recording according to the criteria of sound's natural propagation. The audience in a concert or film hears the direct waves from the instrument or voice, but also those that are reflected off the walls of the room and the diffused sound. With this new device, the first waves are disseminated through the central speakers to give a precise location in space above the second and third waves coming through the other speakers, to create an enveloping surround sound. "The feeling is difficult to describe, since it's about emotion," notes the boss. A similar system developed by Illusonic already equips a dozen 3D cinemas in the USA and Asia.

Intended for the general public, the device connects a stereo and speakers. Two to sixteen of them can be connected and distributed in the room. With a few clicks the user specifies the number of speakers, and the machine does the rest. That is to say, it decomposes the sound to better distribute it.

With a new generation of algorithms fine-tuned especially during his doctorate at EPFL, and from which he pulled twenty patents, Christof Faller develops various technologies to improve the sound from a

computer, a stereo hi-fi, a television, or a video camera. Other projects are underway, such as a microphone capable of recording audio as surround sound.

More information: Film Illusonic: www.illusonic.com/immersive-audio-processor/movie/

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