

Virtual Headphones

Developed by Microsoft

Boffins at Microsoft are working on a revolutionary system which combines camera imaging software with audio technology to create speakers which act like virtual headphones – even as you walk around your office. It means workers who use Skype or other voice communication tools will no longer be tied to their computers by a headset and microphone.

Microsoft scientists have been working on ways to direct audio output from a set of computer speakers directly into a person's ears. Someone standing just a few inches away (outside the focal point of the soundwaves) would be unable to hear the sound.

A complex algorithm is required to make this work, but once achieved, the technology would be relatively inexpensive to manufacture.

A monitor-mounted camera is used to determine the person's position relative to the speakers. Image processing software works in tandem with speaker software to synchronise speaker movement with the movements of the user in real time. Several small microphones would be employed to help localise sound and adjust to time differences as soundwaves hit each speaker – helping to improve accuracy and enabling the user to move around without any loss of sound quality.

The concept of sound-focusing is not new. It's the basis of some radar systems and ultrasound equipment. But systems that direct audible sounds require more sophisticated technology to build successfully as they need to work across a wider range of frequencies and can be time-consuming to calibrate. Such systems are available for home hi-fi use but are costly and require unique calibration in accordance with the dynamics of the room in which they are installed.

Although the project is still in its early phase, Microsoft aims to develop their algorithm so it will work well with any speakers and require minimal setting up. If it works, office staff can bin their headsets and enjoy private Skype conversations or video conferences with their virtual headphones instead.



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