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AUDIO STREAM BLENDING IN MULTI INPUT STREAM HEADSETS

The idea described here is as follow.

With the multiplication of personal devices, individual users are now using more and more devices simultaneously: one or more phones (business and personal), computers, tablets, Television sets...

This change in use led to changes in communication protocols used by accessories to these devices (such as Bluetooth multipoint) so that a single accessory could be connected to more than one device at the same time.

The invention described here relate to headset as accessories to personal devices.

Bluetooth multipoint allows a single headset to be connected to 2 devices at the same time. Although only one device can actively stream audio at a given point in time, nothing would stop a company to create a headset with 2 Bluetooth controllers allowing 2 simultaneous audio connection, and it is very possible that the Bluetooth norm will be extended in the future to allow 2 simultaneous audio connections at the same time. Furthermore, most such headset also have a USB connection.

This means that, as of today, it is already possible to have a single headset technically capable to stream audio simultaneously from 2 or more devices. In the near future, it is very likely that we will be able to connect a single headset to even more devices and stream audio from these various devices simultaneously.

At this point in time, headset will only play one audio stream to the user, with some priority enforced by the device (such as first come, first served, or phone call take priority over audio sound).

This however does not match what we experience in real life where audio sources “merge”. You are watching TV, your husband asks you a question from the office, you will hear both sounds simultaneously.

What we are proposing is for these devices to act in the same way as “real life” and merge the various audio streams directly. The user would then be able to make his own decisions as to what he wants to listen to (if appropriate) by turning off/pausing the less important audio streams.

Furthermore, like in real life, the headset can use the build in DSP to generate virtual sound source position for both streams. This will help the user separate the streams in his mind and process them as needed. Making it easier for him to understand what is happening and making the decision process easier.

Disclosed by Cyrille de Brébisson and Deepika Hegde, HP Inc.