

Title (en)  
METHOD AND DEVICE FOR THE SEPARATION OF SOUND SIGNALS

Title (de)  
VERFAHREN UND VORRICHTUNG ZUR SEPARIERUNG VON SCHALLSIGNALLEN

Title (fr)  
PROCEDE ET DISPOSITIF DE SEPARATION DE SIGNAUX SONORES

Publication  
**EP 1595427 B1 20061213 (DE)**

Application  
**EP 05707893 A 20050131**

Priority  
• EP 2005050386 W 20050131  
• DE 102004005998 A 20040206

Abstract (en)  
[origin: US2007003074A1] In a method of separating acoustic signals from a plurality of sound sources comprising the following steps: disposing two microphones (MIK 1 , MIK 2 ) at a predefined distance (d) from one another; picking up the acoustic signals with both microphones (MIK 1 , MIK 2 ) and generating associated microphone signals (m 1 , m 2 ); and separating the acoustic signal of one of the sound sources (S 1 ) from the acoustic signals of the other sound sources (S 2 ) on the basis of the microphone output signals (m 1 , m 2 ), the proposed separation step comprises the following steps: applying a Fourier transform to the microphone output signals in order to determine their frequency spectra (M 1 , M 2 ); determining the phase difference (phi) between the two microphone output signals (m 1 , m 2 ) for every frequency component of their frequency spectra (M 1 , M 2 ); determining the angle of incidence (<img id="custom-character-00001" he="3.56mm" wi="2.12mm" file="US20070003074A1-20070104-P00900.TIF" alt="custom character" img-content="character" img-format="tif"/>) of every acoustic signal allocated to a frequency of the frequency spectra (M 1 , M 2 ) on the basis of the relative phase angle (phi) and the frequency; generating a signal spectrum (S) of a signal to be output by correlating one of the two frequency spectra (M 1 , M 2 ) with a filter function (F<SUB><?img id="custom-character-00002" he="3.56mm" wi="2.12mm" file="US20070003074A1-20070104-P00900.TIF" alt="custom character" img-content="character" img-format="tif" ?></SUB><SUB><SUB2>0</SUB2></SUB>) which is selected so that acoustic signals from an area (gamma<SUB>3db</SUB></SUB>) around a preferred angle of incidence (<img id="custom-character-00003" he="3.56mm" wi="2.12mm" file="US20070003074A1-20070104-P00900.TIF" alt="custom character" img-content="character" img-format="tif"/><SUB>0</SUB>) are amplified relative to acoustic signals from outside this area (gamma<SUB>3db</SUB>); and applying an inverse Fourier transform to the resultant signal spectrum.

IPC 8 full level  
**H04R 3/00** (2006.01); **G10L 21/02** (2013.01); **G01S 3/808** (2006.01); **G10L 21/0216** (2013.01); **H04R 1/32** (2006.01); **H04R 1/40** (2006.01)

CPC (source: EP US)  
**G10L 21/02** (2013.01 - EP US); **G10L 2021/02165** (2013.01 - EP US); **G10L 2021/02166** (2013.01 - EP US)

Cited by  
EP2362681A1; EP2296356A3; DE202008016880U1; EP2296356A2; DE102009029367A1; DE202010013508U1; DE102010001935A1; US8340321B2; US8477964B2

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