

Title (en)  
VIRTUAL ELECTROACOUSTIC AUDIOMETRY FOR UNAIDED, SIMULATED AIDED, AND AIDED HEARING EVALUATION

Title (de)  
VIRTUELLE ELEKTROAKUSTISCHE AUDIOMETRIE OHNE PROTHESE, MIT SIMULATION VON PROTHESE UND MIT PROTHESE

Title (fr)  
AUDIOMETRIE ELECTROACOUSTIQUE VIRTUELLE POUR EVALUATION AUDITIVE SANS PROTHESE, AVEC SIMULATION DE PROTHESE ET AVEC PROTHESE

Publication  
**EP 0868830 A4 20060322 (EN)**

Application  
**EP 96927408 A 19960814**

Priority  
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• US 58005295 A 19951220

Abstract (en)  
[origin: WO9723117A1] Digital filtering (18) of one or more signal sources according to selected models and digitally controlled signal processing parameters, including audio sources, spatializing coordinates, acoustic boundaries, signals representing one or more simulated hearing aids, and individualized body/external ear transfer functions synthesizes a simulated three-dimensional acoustic condition for presentation to hearing-impaired person (20) for objective and subjective hearing evaluation via an intra-canal prosthesis (22) that is positioned in the ear canal (21), and that incorporates a microphone probe to measure in-the-ear-canal responses at a common reference point near the tympanic membrane (26) during unaided, simulated aided, and aided hearing evaluation. A virtual electroacoustic audiometer (19) computes the electroacoustic parameters of a hearing aid based on the results of the unaided audiometric evaluation and reference measurements that included the acoustic response near the tympanic membrane. The system then synthesizes acoustic signals reflecting the combined selection of audio signal model, spatialization model, acoustic boundaries model, as well as computed hearing aid model in the case of simulated aided condition.

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**H04R 29/00**; **H04R 25/00**; **H04R 5/00**; **A61B 5/00**; **A61B 5/12**

IPC 8 full level  
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Citation (search report)  
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• [A] EP 0396831 A2 19901114 - MINNESOTA MINING & MFG [US]  
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• [XA] WHITEHEAD M L ET AL: "MEASUREMENT OF OTOACOUSTIC EMISSIONS FOR HEARING ASSESSMENT", IEEE ENGINEERING IN MEDICINE AND BIOLOGY MAGAZINE, IEEE SERVICE CENTER, PISCATAWAY, NJ, US, vol. 13, no. 2, 1 April 1994 (1994-04-01), pages 210 - 226, XP000441345, ISSN: 0739-5175  
• See references of WO 9723117A1

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