

Title (en)

Method and apparatus for noise reduction during speech transmission

Title (de)

Verfahren und Vorrichtung zur Geräuschunterdrückung bei der Sprachübertragung

Title (fr)

Procédé et dispositif pour la réduction de bruit durant la transmission de parole

Publication

**EP 1091349 A3 20020102 (DE)**

Application

**EP 00250301 A 20000908**

Priority

DE 19948308 A 19991006

Abstract (en)

[origin: EP1091349A2] The method involves using a multi-layer self-organising neural network with feedback. A minima detection layer, a reaction layer, a diffusion layer and an integration layer define a filter function ( $F(f,T)$ ) for noise filtering. The filter function is used to convert a spectrum  $B(f,T)$  free of noise, into a noise-free speech signal ( $y(t)$ ) by inverse Fourier transformation. The signal delay caused by processing the signal is so short that the filter can operate in real-time for telecommunication. All neurons are supplied with an externally set parameter  $K$ , the size of which defines the degree of noise suppression of the whole filter. An Independent claim is included for an apparatus for noise suppression during speech transmission.

IPC 1-7

**G10L 21/02**; **G06F 15/18**

IPC 8 full level

**G06F 15/18** (2006.01); **G10L 21/02** (2006.01); **G10L 21/0208** (2013.01); **G10L 25/30** (2013.01)

CPC (source: EP US)

**G10L 21/0208** (2013.01 - EP US); **G10L 25/30** (2013.01 - EP US)

Citation (search report)

- [A] US 5878389 A 19990302 - HERMAN SKY HYNEK [US], et al
- [A] KNECHT W G ET AL: "NEURAL NETWORK FILTERS FOR SPEECH ENHANCEMENT", IEEE TRANSACTIONS ON SPEECH AND AUDIO PROCESSING, IEEE INC. NEW YORK, US, vol. 3, no. 6, 1 November 1995 (1995-11-01), pages 433 - 438, XP000730628, ISSN: 1063-6676
- [A] ENMAJI A ET AL: "CONCEPTION OF SPEECH FILTERS BASED ON A NEURAL NETWORK", PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON SPOKEN LANGUAGE PROCESSING (ICSLP). BANFF, OCT. 12 - 16, 1992, EDMONTON, UNIVERSITY OF ALBERTA, CA, vol. 2, 12 October 1992 (1992-10-12), pages 1387 - 1390, XP000871657

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**EP 1091349 A2 20010411**; **EP 1091349 A3 20020102**; **EP 1091349 B1 20050209**; AT E289110 T1 20050215; CA 2319995 A1 20010406; CA 2319995 C 20050426; DE 19948308 A1 20010419; DE 19948308 C2 20020508; DE 50009461 D1 20050317; TW 482993 B 20020411; US 6820053 B1 20041116

DOCDB simple family (application)

**EP 00250301 A 20000908**; AT 00250301 T 20000908; CA 2319995 A 20000920; DE 19948308 A 19991006; DE 50009461 T 20000908; TW 89120732 A 20001005; US 68098100 A 20001006