

Title (en)

Signal processing method and device and training method and device

Title (de)

Signalverarbeitungsverfahren und Trainingsverfahren und Vorrichtungen dazu

Title (fr)

Méthode et dispositif de traitement du signal et système d'entraînement

Publication

**EP 2006841 A1 20081224 (EN)**

Application

**EP 06007389 A 20060407**

Priority

EP 06007389 A 20060407

Abstract (en)

A Signal processing method comprises the steps of - acquisition of an audio signal ( $A_1 y(t)$ ), - periodically digitizing the audio signal ( $A_1 y(t)$ ) resulting in frames (1) of the digitized audio signal ( $A_4 y_1(n)$ ), - determining a noisy audio signal spectrum ( $A_6 Y_1(k)$ ) for each frame (1) of the digitized audio signal ( $A_4 y_1(n)$ ), - determining quantized a priori and a posteriori signal to noise ratios ( $A_{10} \frac{1}{4} A_{12}^3(k)$ ) depending on the noisy audio signal spectrum ( $A_6 Y_1(k)$ ) for the provided discrete frequencies (k) of each frame (1), - determining for the provided discrete frequencies (k) given associated Perceptual scale gain values  $A_{\#28\#} G_{VAD} \text{ Bark } m$  dependent on the quantized a priori and a posteriori signal to noise ratios ( $A_{14} \frac{3}{4} l(k)$ ,  $A_{16}^3 l(k)$ ), the given Perceptual scale gain values  $A_{\#28\#} G_{VAD} \text{ Bark } m$  being provided on a Perceptual scale for respective Perceptual scale subbands (m), - multiplying the respective spectral values of the noisy audio signal spectrum ( $A_6 Y_1(k)$ ) of the respective frame (1) with the determined respective Perceptual scale gain values  $A_{\#28\#} G_{VAD} \text{ Bark } m$  resulting in estimated wanted spectrum values ( $A_{50} X_1(k)$ ) and - determining an estimated digitized wanted signal ( $A_{48} x_1(n)$ ) dependent on the estimated wanted spectrum values ( $A_{50}$ ).

IPC 8 full level

**G10L 21/02** (2006.01); **G10L 21/0208** (2013.01)

CPC (source: EP)

**G10L 21/0208** (2013.01)

Citation (search report)

- [XA] EP 1635331 A1 20060315 - SIEMENS AG [DE]
- [A] US 6643619 B1 20031104 - LINHARD KLAUS [DE], et al
- [A] SETIAWAN PANJI ET AL: "Robust speech recognition for mobile devices in car noise", EUR. CONF. SPEECH COMMUN. TECHNOL.; 9TH EUROPEAN CONFERENCE ON SPEECH COMMUNICATION AND TECHNOLOGY; 9TH EUROPEAN CONFERENCE ON SPEECH COMMUNICATION AND TECHNOLOGY, EUROSPEECH INTERSPEECH 2005, 4 September 2005 (2005-09-04), pages 2673 - 2676, XP002395155

Cited by

US2013054232A1; US9666206B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK YU

DOCDB simple family (publication)

**WO 2007115823 A1 20071018**; EP 2006841 A1 20081224

DOCDB simple family (application)

**EP 2007003189 W 20070410**; EP 06007389 A 20060407