Title (en)
DEVICE AND METHOD FOR EMBEDDING A WATERMARK IN AN AUDIO SIGNAL

Title (de)
VORRICHTUNG UND VERFAHREN ZUM EINBETTEN EINES WASSERZEICHENS IN EIN AUDIOSIGNAL

Title (fr)
DISPOSITIF ET PROCEDE POUR L'INSERTION D'UN FILIGRANE DANS UN SIGNAL AUDIO

Publication
EP 1382038 A2 20040121 (DE)

Application
EP 02740586 A 20020510

Priority
• DE 10129239 A 20010618
• EP 0205173 W 20020510

Abstract (en)
[origin: US2004184369A1] Prior to embedding a watermark in an audio signal, a spectral representation of the audio signal and a spectral representation of the watermark signal are determined. The spectral representation of the watermark signal is then processed on the basis of a psychoacoustic masking threshold of the audio signal. The processed watermark signal is combined with the audio signal to obtain an audio signal bearing a watermark. The spectral representation of the watermark signal is processed iteratively as follows: first a predetermined watermark initial value is selected, then the interference introduced into the spectral representation of the audio signal after a quantization of the spectral representation of the audio signal is determined and then, if the interference introduced by the watermark initial value exceeds the predetermined interference threshold, the watermark initial value is modified progressively until the resulting interference introduced into the spectral representation of the audio signal after quantization is less than or equal to the predetermined interference threshold. The modified watermark initial value at the end of the iteration is used as the processed watermark signal to be combined with the audio signal. As a result it is no longer possible for a watermark to be quantized out. Instead, full control over the energy of the watermark is achieved. A watermark can therefore be embedded in an audio signal to provide either the best possible degree of watermark detectability or the best possible audio quality.

IPC 1-7
G11B 20/00

IPC 8 full level
G10L 19/018 (2013.01); **G10L 19/02** (2013.01); **G11B 20/00** (2006.01)

CPC (source: EP US)
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US 2004184369 A1 20040923; **US 7346514 B2 20080318**; AT E298921 T1 20050715; DE 10129239 C1 20021031; DE 50203511 D1 20050804; EP 1382038 A2 20040121; EP 1382038 B1 20050629; WO 02103695 A2 20021227; WO 02103695 A3 20030522

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