

## Title (en)

METHOD OF PROCESSING AN INPUT AUDIO SIGNAL FOR GENERATING A STEREO OUTPUT AUDIO SIGNAL HAVING SPECIFIC REVERBERATION CHARACTERISTICS

## Title (de)

VERFAHREN ZUR VERARBEITUNG EINES EINGANGSAUDIOSIGNALS ZUR ERZEUGUNG EINES STEREOAUSGANGSAUDIOSIGNALS MIT SPEZIFISCHEN NACHHALLSEIGENSCHAFTEN

## Title (fr)

PROCEDE DE TRAITEMENT D'UN SIGNAL AUDIO D'ENTREE POUR PRODUIRE UN SIGNAL AUDIO DE SORTIE STEREO AYANT DES CARACTERISTIQUES DE REVERBERATION SPECIFIQUES

## Publication

**EP 4007310 A1 20220601 (EN)**

## Application

**EP 20210629 A 20201130**

## Priority

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## Abstract (en)

A method of processing an input audio signal for generating a stereo output audio signal with a specific reverberation, the method comprising the following steps: a) providing an input audio signal, the input audio signal being a mono input audio signal or a stereo input audio signal; b) providing pre-recorded stereo Room-Impulse-Response (RIR) data of a specific acoustic environment, the RIR data comprising a defined number of RIR samples, the RIR data comprising an equal number of left channel samples and right channel samples; c) determining a first number of RIR samples representing a stereo part of the RIR data and a second number of RIR samples representing a mono part of the RIR data, whereby the stereo part of the RIR data comprises a number of left channel samples for the left output channel and an equal number of right channel samples for the right output channel, and whereby the mono part of the RIR comprises a number of samples to be used for both the left and the right output channel; d) subdividing the samples of the RIR into a first group of RIR samples representing the stereo part of the RIR and into a second group of RIR samples representing the mono part of the RIR, whereby the duration that corresponds to the stereo part of the RIR and the duration that corresponds to the mono part of the RIR add up to the total duration of the RIR; e1-e2) applying a first signal processing rule consisting in (e1) convolving the input audio signal with the left channel samples of the stereo part of the RIR data and (e2) convolving the input audio signal with the right channel samples of the stereo part of the RIR data, thereby obtaining a processed left channel audio signal part and a processed right channel audio signal part representing the reverberation of input audio signal from the first group of samples of the RIR; e3) applying a second signal processing rule consisting in convolving the mono input audio signal, or the mono version of the stereo input audio signal, with the mono part of the RIR data, thereby obtaining a processed mono audio signal part representing the reverberation of the input audio signal from the second group of samples of the RIR; and f1) mixing the left channel audio signal part resulting from the processing of the input audio signal with the left channel samples of the stereo part of the RIR data with the audio signal part resulting from the processing of the input audio signal with the mono part of the RIR data, thereby generating a left channel output signal; and f2) mixing the right channel audio signal part resulting from the processing of the input audio signal with the right channel samples of the stereo part of the RIR data with the audio signal part resulting from the processing of the input audio signal with the mono part of the RIR data, thereby generating a right channel output signal. HUPOLS (Hybrid Mono-Stereo Uniform Partition Overlap-Save) implementation aspects of the above-mentioned signal processing method are provided. HUPOLS method is based on the UPOLS (Uniform Partition Overlap-Save) method.

## IPC 8 full level

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- [XII] US 2015350801 A1 20151203 - KOPPENS JEROEN GERARDUS HENRICUS [NL], et al
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## Cited by

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## Designated contracting state (EPC)

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