

Acoustic Data Compression – MP3 Base Patent

<http://swpat.ffii.org/pikta/mupli/ep287578/index.en.html>

Workgroup

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Iteratively perform certain calculations on acoustic data until a certain value is reached. The patent owner Karlheinz Brandenburg, core researcher of the MP3 project at Max Planck, received this patent in 1989. This patent and its owner were showcased by the European Commission's "IPR Helpdesk" project in 2001 as "inventor of the month". This is one of several dozen patents which cover the MP3 audio compression standard, and perhaps the most famous and basic one. It has always been treated as a model of how "technical" and "non-trivial" software patents can get.

Contents

Claim 1: Digital coding process for transmitting and/or storing acoustic signals, specifically music signals, comprising the following steps.

- N samples of the acoustic signal are converted into M spectral coefficients;
- said M spectral coefficients are subjected to quantisation at a first level;
- after coding by means of an entropic encoder the number of bits required to represent all the quantized spectral coefficients is checked;

*<http://www.ffii.org/~phm>

- when the required number of bits does not correspond to a specified number of bits quantization and coding are repeated in subsequent steps, each at a modified quantization level, until the number of bits required for representation reaches the specified number of bits, and
- additionally to the data bits the required quantization level is transmitted and/or stored.

patent application (A): claims¹, description² and abstract³

granted version (B1): The EPO publishes the patent as a collection of graphical files, which we concatenate into one huge PDF file⁴ and, by OCR batch processing⁵, reduce to a text file⁶.

- **MPEG-related patents on compression of acoustic data**⁷

Acoustic compression requires knowledge of auditive perception, which had to be acquired through experimentation. Thus this field is close to the borderline of technical inventions which could be patentable. Yet most of the research results were published in the 60s and 70s, and the patented processes based thereon are pure informational processes, some of them quite basic and trivial, when viewed against the background of available theoretical knowledge. The whole field of audio compression is cluttered with dozens of basic patents, thus making it very difficult to develop alternatives. Ogg Vorbis seems to have succeeded in developing patent-free audio compression, but is being threatened by the patent holders, who have formed various consortia such as MP3 and MPEG2. In order to develop free software for MP3, one must pay an upfront payment of 1 million USD. Otherwise money must be charged per copy, thus barring the possibility of opensource development. Moreover, recently MPEG-LA, a consortium of MPEG patent holders, also proposed charging fees from content producers.

¹claims.html

²desc.html

³abstract.html

⁴ep0287578.pdf

⁵<http://localhost/swpat/girzu/epatext/index.en.html>

⁶ep0287578.txt

⁷<http://localhost/swpat/pikta/xrani/mpeg/index.en.html>