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**Datasheet for the decision  
of 20 February 2025**

**Case Number:** T 2516/22 - 3.4.01

**Application Number:** 14719176.1

**Publication Number:** 2979267

**IPC:** G10L25/81, G10L21/02, G10L17/06

**Language of the proceedings:** EN

**Title of invention:**  
1APPARATUSES AND METHODS FOR AUDIO CLASSIFYING AND PROCESSING

**Patent Proprietor:**  
Dolby Laboratories Licensing Corporation

**Opponent:**  
K/S HIMPP

**Headword:**  
Audio classification / Dolby

**Relevant legal provisions:**  
EPC Art. 84

**Keyword:**  
Claims - clarity - main request (no)



**Beschwerdekammern**

**Boards of Appeal**

**Chambres de recours**

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Case Number: T 2516/22 - 3.4.01

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.01**  
**of 20 February 2025**

**Appellant:**

(Opponent)

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**Decision under appeal:**

**Interlocutory decision of the Opposition  
Division of the European Patent Office posted on  
22 September 2022 concerning maintenance of the  
European Patent No. 2979267 in amended form.**

**Composition of the Board:**

**Chairman**

P. Scriven

**Members:**

A. Medeiros Gaspar

R. Winkelhofer

## **Summary of Facts and Submissions**

- I. The patent was opposed on grounds of lack of novelty and lack of an inventive step.
- II. The Opposition Division found that auxiliary request 4 met the requirements of the EPC.
- III. In their decision, the Opposition Division concluded that claim 1 of auxiliary request 4 did not infringe Article 84 EPC, and that it defined subject-matter that was new and inventive.
- IV. The opponent appealed this decision, disputing both findings, and requested that it be set aside and the patent revoked.
- V. With their response to the appeal, proprietor (respondent) requested that the appeal be dismissed.
- VI. In a communication under Article 15(1) RBPA, the Board expressed the preliminary view that the claim 1 of the sole request on appeal (auxiliary request 4 of the contested decision) was neither clear nor patentable.
- VII. Oral proceedings took place before the Board. The parties maintained their initial requests.

VIII. Claim 1 of the sole requests reads:

*An audio processing apparatus (100) comprising:  
an audio classifier (200) for classifying an audio signal into at least one audio type in real time, wherein the audio classifier (200) is further adapted to estimate, at the same time, for each audio type a confidence value representing a probability that the audio signal is of the respective audio type,  
wherein the at least one audio type comprises at least one of content types of short-term music, speech, background sound and noise, and at least one of context types of long-term music, movie-like media, game and VoIP,  
wherein the audio classifier comprises an audio content classifier (202) for identifying the content type of the audio signal and an audio context classifier (204) for identifying the context type of the audio signal based on classification results of the audio content classifier (202),  
wherein the audio content classifier (202) comprises  
a short-term feature extractor (2022) for extracting short-term features from short-term audio segments each comprising a sequence of audio frames, and  
a short-term classifier (2024) for classifying a sequence of short-term audio segments in a long-term audio segment into content types using respective short-term features, wherein the long-term audio*

*segment is longer than a short-term audio segment, and*

*wherein the audio context classifier (204) comprises*

*a statistic extractor (2042) for calculating statistics of the results of the short-term classifier (2024) with respect to the sequence of short-term audio segments in the long-term audio segment, as long-term features, and a long-term classifier (2044) for, using the long-term features, classifying the long-term audio segment into context types;*

*an audio improving device (400) for improving experience of audience [sic], wherein the audio improving device (400) comprises at least one selected from a dialog enhancer (402), a surround virtualizer (404), a volume leveler (406) and an equalizer (408); and an adjusting unit (300) for adjusting at least one parameter of the audio improving device (400) in a continuous manner based on the confidence value of the at least one audio type, wherein the at least one parameter comprises at least one parameter for at least one of dialog enhancement processing by the dialog enhancer (402), surround virtualizing processing by the surround virtualizer (404), volume leveling processing by the volume leveler (406) and equalizing processing by the equalizer (408).*

## Reasons for the Decision

### *Background of the invention, as described in the patent*

1. The invention relates to audio processing devices adapted to modify audio signals so as to "improve" them, i.e. "enhance users' experience".
2. Different processing may be required, depending on the type of audio signal, in terms both of "content" and of "context".
3. The invention aims at providing an audio processing device capable of "automatically and continuously" adjusting to changes in the type of audio signal.

### *Clarity*

4. Present claim 1 is based, in effect, on claim 2 of the patent as granted, with further features brought in from the description.
5. Concretely, claim 1 defines *an audio processing apparatus comprising an audio classifier, an audio improving device, and an adjusting unit* as these were defined in claim 1 of the patent. There, the *audio classifier* was defined as *being for classifying an audio signal into at least one audio type in real time, wherein the audio classifier is further adapted to estimate, at the same time, for each audio type a confidence value representing a probability that the audio signal is of the respective audio type.*

6. Claim 1 further defines the *at least one audio type* as comprising at least one of content types of short-term music, speech, background sound and noise, and at least one of context types of long-term music, movie-like media, game and VoIP, as in claim 2 of the patent.
7. The features brought in from the description further define the *audio classifier* as comprising an *audio content classifier* and an *audio context classifier*, with the *audio content classifier* comprising a *short-term feature extractor* and a *short-term classifier*, and the *audio context classifier* comprising a *statistic extractor* and a *long-term classifier*.
8. Each of these sub-elements of the audio classifier is defined in terms of its function by reference to *short- or long-term audio segments*, and to *short- or long-term features*, with *long-term features* being also referred to as *statistics of the results of the short-term classifier*.
9. The appellant argues that the features brought in from the description introduce clarity issues. They note that the expressions *short- or long-term audio segments* are not clear, and that, even if those expressions were clear, the expressions *short- or long-term features* would still not be.
10. The Board notes that the claim itself defines a *short-term audio segment* as comprising a *sequence of audio frames* (line 15 of claim 1), and a *sequence of short-term audio segments* as being comprised in a *long-term audio segment*, which is, therefore, longer than a short-term audio segment (lines 16 to 18 of claim 1).

11. Hence, at least some relationship between the terms *audio frame*, *short-term audio segment*, and *long-term audio segment* can be inferred from the claim wording, though neither the *audio frames*, nor the *sequences* referred to are themselves further specified.
12. However, even if the expressions *short-term audio segment* and *long-term audio segment* were to be regarded as clear, though broad, as argued by the respondent, the terms *short-term features* and *long-term features* are still not clear, as correctly noted by the appellant.
13. The claim defines *short-term features* as being extracted from the *short-term audio segments*, and as being used for *classifying a sequence of short-term audio segments in a long-term audio segment into content types* (claim 1 lines 14 to 18).
14. The *long-term features* are defined as *statistics of the results of the short-term classifier with respect to the sequence of short-term audio segments in the long-term audio segment* and as being used for *classifying the long-term audio segment into context types* (claim 1 lines 20 to 24).
15. These definitions establish no link to the *confidence value representing a probability that the audio signal is of a respective audio type*, which the preamble of claim 1 says the audio classifier is adapted to estimate for each audio type.
16. The skilled person is, then, left unable to determine how the *short-term features*, *long-term features*, *results of the short-term classifier*, or the *statistics*

of those *results*, relate to the *confidence values* previously defined.

17. The claim is also ambiguous as to whether the *short-term features* are extracted from each individual short-term audio segment of the plurality mentioned (line 15 of claim 1), or from the plurality itself.
18. The skilled person is left not knowing whether it is each short-term audio segment of the sequence that is classified into one or more audio types, the result being one or more sequences of audio types; or it is rather the entire sequence of short-term audio segments that is classified.
19. This, in turn, renders unclear what the *results of the short-term classifier* are, on the basis of which unspecified *statistics* are to be calculated, as *long-term features*.
20. Consultation of the related drawings and passages of the description of the patent, as referred to by the respondent (Figures 24 and 25; paragraphs [0318] to [0320]), does not help.
21. Those passages suggest that the *long-term features* are statistics of confidence values representing, for each *short-term segment*, a probability that the audio signal is of a certain content type, and that these are the *results of the short-term classifier* (paragraphs [0318] and [0319] and Figure 25).
22. None of this is, however, defined in the claim, which is unclear in that it fails to specify the relationships between the different terms employed in the definition of the audio classifier.

23. Additionally, by employing different terms, when referring to quantities that are disclosed as being either the same or related, the claim covers subject-matter that is not supported by the description and drawings of the patent.
24. For all these reasons, claim 1 of the sole request on file contravenes Article 84 EPC.

## Order

### **For these reasons it is decided that:**

1. The decision under appeal is set aside.
2. The patent is revoked.

The Registrar:

The Chair:



D. Meyfarth

P. Scriven

Decision electronically authenticated