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**Datasheet for the decision  
of 17 May 2017**

**Case Number:** T 1155/12 - 3.4.01

**Application Number:** 06769309.3

**Publication Number:** 1915756

**IPC:** G10L19/00

**Language of the proceedings:** EN

**Title of invention:**

MEHTOD FOR GENERATING ENCODED AUDIO SIGNAL AND METHOD FOR  
PROCESSING AUDIO SIGNAL

**Applicant:**

LG Electronics Inc.

**Headword:**

**Relevant legal provisions:**

EPC 1973 Art. 83  
RPBA Art. 13(1)

**Keyword:**

Sufficiency of disclosure - (no)  
Late-filed auxiliary requests - admitted (no)

**Decisions cited:**

T 0890/02

**Catchword:**



**Beschwerdekammern**  
**Boards of Appeal**  
**Chambres de recours**

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Case Number: T 1155/12 - 3.4.01

**D E C I S I O N**  
**of Technical Board of Appeal 3.4.01**  
**of 17 May 2017**

**Appellant:** LG Electronics Inc.  
(Applicant) 20, Yoido-dong  
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**Representative:** Katérle, Axel  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted on 8 December 2011  
refusing European patent application No.  
06769309.3 pursuant to Art. 97(2) EPC.

**Composition of the Board:**

**Chairman** G. Assi  
**Members:** P. Fontenay  
J. Geschwind

## Summary of Facts and Submissions

- I. The examining division refused European patent application No. 06 769 309 by a decision remitted to the post on 8 December 2011.
- II. In the reasons for the decision, the examining division held that the application according to a main request then on file did not comply with the requirements of Art. 83 EPC in combination with R. 42(1)(e) EPC. Concretely, the examining division held that the application did not contain sufficient information to carry out the steps of *"generating fixed output channels from the downmix signal according to the basic spatial information; and generating arbitrary output channels from the fixed output channels according to the extension spatial information"*, as recited in independent claims 2 and 6 of the main request. In this respect, the examining division held that document A2 (Audio Engineering Society, Convention Paper 6447, 18th Convention in Barcelona (Spain), 28-31 May 2005) did not constitute evidence for common general knowledge and, therefore, disregarded it when assessing the disclosure of the invention. In addition, the examining division observed that even if A2 would be regarded as part of the general knowledge, it did not disclose the information considered to be missing in the patent application. The examining division also held that claim 1 of the main request did not meet the requirements of Art. 84 EPC. Therefore, the main request was not allowable.

The examining division did not admit into the examination proceedings a first auxiliary request filed by the applicant (R. 137(3) EPC).

Moreover, the examining division held that the objections raised against the main request also applied to a second auxiliary request then on file that was, therefore, not allowable too.

III. On 2 February 2012, the appellant (applicant) filed a notice of appeal. The prescribed appeal fee was paid on the same date.

IV. The statement setting out the grounds of the appeal was filed on 18 April 2012.

The appellant requested that the decision of the first instance be set aside in its entirety and a patent be granted on the basis of a set of claims 1-8 filed with the statement of grounds of appeal.

V. In accordance with an appellant's further request, a summons to attend oral proceedings was issued on 9 February 2017.

VI. In a communication of the Board pursuant to Ar. 15(1) RPBA issued on 14 March 2017, the appellant was informed of the provisional opinion of the Board.

In particular, the objection of insufficiency of disclosure under Art. 83 EPC 1973, as raised by the examining division in the decision under appeal, was regarded as being justified.

VII. In reaction to the preliminary opinion of the Board, by submission of 24 April 2017, a new document A4 was submitted as evidence of common general knowledge at the priority date of the application.

Document A4 (ISO/IEC JTC 1/SC 29/WG 11 N7136) is a working draft standard of the International Standard Organisation (ISO) regarding "*Spatial Audio Coding*". It bears the mention "*Date: 2005-02-18*" on its front page.

Concretely, A4 provided evidence, in the appellant's opinion, that the skilled person was well aware of decoding techniques making use of a basic matrix and post matrix. The determination of the "*configuration elements*" of these matrices was thus also well-known to the skilled person.

- VIII. By telefax of 16 May 2017, the Board sent a copy of a document entitled "*About MPEG*" to the appellant's representative in view of the oral proceedings to be held on 17 May 2017.

The document concerns the elaboration of ISO/IEC standards and, more specifically, the different categories of documents which are drafted at various stages of the elaboration process.

- IX. Oral proceedings before the Board took place on 17 May 2017 in the presence of the appellant's representative. The representative confirmed that he had received the document sent by the Board.

The appellant's final requests were that the decision under appeal be set aside and that a patent be granted on the basis of a set of claims 1 to 8 filed as a main request with the grounds of appeal or claim 1 submitted (at 15:20) as auxiliary request during the oral proceedings.

- X. Claim 1 of the appellant's main request reads:

"1. A method for processing an audio signal comprising:

receiving an encoded audio signal including a downmix signal, basic spatial information, and extension spatial information, the downmix signal generated from a multi-channel audio signal, the basic spatial information requisite for a multi-channel audio coding process upmixing the downmix signal, and the extension spatial information selectively required for the multi-channel audio coding process; and

generating fixed output channels from the downmix signal according to the basic spatial information; and

generating arbitrary output channels from the fixed output channels according to the extension spatial information,

wherein the basic spatial information includes fixed channel configuration information indicating a predetermined channel configuration, and basic data corresponding to the fixed channel configuration information,

wherein the extension spatial information includes arbitrary channel configuration information indicating an extended channel configuration, and extension data corresponding to the arbitrary channel configuration information, the extension data being usable to extend the number of channels of the fixed output channels,

wherein the basic data includes at least one of channel level difference information indicating difference values in energy between two channels, and inter-channel correlation information indicating correlation between two channels, and

wherein the extension data indicates channel level differences in energy between two channels."

Claims 2 to 4 depend on claim 1.

Independent claim 5 according to the appellant's main request relates to an apparatus for processing an audio signal. It reads:

"5. An apparatus for processing an audio signal, comprising:

a means for receiving an encoded audio signal including a downmix signal, basic spatial information, and extension spatial information, the downmix signal generated from a multi-channel audio signal, the basic spatial information requisite for a multi-channel audio coding process upmixing the downmix signal, and the extension spatial information selectively required for the multi-channel audio coding process;

a means for generating fixed output channels from the downmix signal according to the basic spatial information; and

a means for generating arbitrary output channels from the fixed output channels according to the extension spatial information,

wherein the basic spatial information includes fixed channel configuration information indicating a predetermined channel configuration, and basic data corresponding to the fixed channel configuration information, and

wherein the extension spatial information includes extension configuration information including arbitrary channel configuration information indicating an extended channel configuration, and extension data corresponding to the arbitrary channel configuration information, the extension data being usable to extend the number of channels of the fixed output channels, and

wherein the basic data includes at least one of channel level difference information indicating difference values in energy between two channels, and



*inter-channel correlation information indicating correlation between two channels, and  
wherein the extension data indicates channel level differences in energy between two channels."*

Claims 6 to 8 depend on claim 5.

XI. Claim 1 of the appellant's auxiliary request reads:

*"1. A method of creating an extended number of output channels usable for divisionally processing an audio signal comprising:*

*receiving an encoded audio signal including a downmix signal, fixed spatial information, and extension spatial information, the downmix signal generated from a multi-channel audio signal, the fixed spatial information requisite for a multi-channel audio coding process to upmix the downmix signal, and the extension spatial information selectively required for the multi-channel audio coding process; and*

*generating a fixed number of output channels from the downmix signal according to the fixed spatial information; and*

*generating an extended number of output channels from the fixed number of output channels according to the extension spatial information,*

*wherein the fixed spatial information includes fixed channel configuration information indicating a pre-established channel configuration indicating the number of output channels to be generated from the downmix signal, and data corresponding to the fixed channel configuration information,*

*wherein the extension spatial information includes extended channel configuration information indicating an extended channel configuration, and data corresponding to the extended channel configuration*

*information, the extended channel configuration information including division identifiers and non-division identifiers, wherein generating the extended number of output channels includes sequentially recognizing the division identifiers and non-division identifiers, wherein, if a division identifier is recognized, a single input channel is converted to two output channels and, if a non-division identifier is recognized, a single input channel is outputted without any change of the number of channels,*

*wherein the data corresponding to the fixed channel configuration information includes at least one of channel level difference information indicating difference values in energy between two channels, and inter-channel correlation information indicating correlation between two channels, and*

*wherein the data corresponding to the extended channel configuration information indicates channel level differences in energy between two channels".*

## **Reasons for the Decision**

### *1. Admissibility*

The appeal meets the requirements of Art. 106 to 108 EPC and R. 99 EPC. It is thus admissible.

### *2. Main request - Sufficiency of disclosure (Art. 83 EPC 1973)*

#### *2.1 Public availability of document A4*

*2.1.1* The article "About MPEG" was retrieved by the Board and introduced into the proceedings since it appeared to be relevant for assessing whether document A4 had been

made available to the public at the priority date of the refused application. This article was obtained from the Internet site "[www.chariglione.org/mpeg/about\\_mpeg/html](http://www.chariglione.org/mpeg/about_mpeg/html)".

It is not, as such, part of the prior art. However, it gives a detailed insight as to the elaboration of standards in the framework of MPEG and as to the various documents which are produced in this context.

As recited on page 2 of said article, *"Depending on the nature of the standard[,] documents of different nature may be produced. For Audio and Video coding standards the first document that is produced is called a Verification Model (VM). In MPEG-1 and MPEG-2 this was called Simulation and Test Model, respectively. The VM describes, in some sort of programming language, the operation of the encoder and the decoder. The VM is used to carry out simulations to optimise the performance of the coding scheme. When MPEG has reached sufficient confidence in the stability of the standard under development, a Working Draft (WD) is produced. This is already in the form of a standard but is kept internal to MPEG for revision. At the planned time the WD has become sufficiently solid and becomes Committee Draft (CD). It is then sent to National Bodies (NB) for ballot. If the number of positive votes is above the quorum, the CD becomes Final Committee Draft (FCD) and is again submitted to NBs for the second ballot after a thorough review that may take into account the comments issued by NBs. If the number of positive votes is above the quorum the FCD becomes Final Draft International Standard (FDIS). ISO will then hold a yes/no ballot with National Bodies where no technical changes are allowed. The document then becomes International Standard (IS).*

*A WD usually undergoes several revisions before moving to CD stage. A key role is played by "Core experiments" where different technical options are studied [sic] by at least two different partners. Each revision involves a large number of experts who draw the committee's attention to possible errors contained in the document".*

This quotation generates founded doubts regarding the public availability of A4, since it states that Working Draft (WD) documents are kept internal to MPEG for revision. Indeed, on page 3 of the article, it is specified that *"Output documents ... are stored on the MPEG FTP site. Access to input and output documents, however, is restricted to MPEG members"*.

In this respect, the appellant referred to decision T 890/02 (OJ EPO 2005, 497). This is, however, of no help. In particular, one of the criteria relied upon in this decision to justify that the content of a database may constitute evidence for common knowledge, i.e. the fact that the information may be retrieved without undue burden (cf. Headnote, point (b)), would not be met in the present case.

2.1.2 In the course of the oral proceedings, the appellant underlined that A4 contained the additional indication *"ISO/IEC CD 14496-x"* on both its front page and in the header section of each page of the document. This would rather imply that A4 was a Committee Document (CD) rather than a Working Draft. This implied, according to the article *"About MPEG"*, that A4 was a document which had been made available to the public. This view was further corroborated by the existence of provisional application US 60/701,001, which had been filed on

19 July 2005, and to the corresponding PCT application WO 2007/009548. Both documents, in fact, referred to document A4. This proved, in the appellant's view, that said document A4 was already available on 19 July 2005, that is before the priority date of 29 July 2005 claimed for the present application.

The arguments and facts relied upon by the appellant are not conclusive. It is, under the circumstances, for the appellant to establish the existence of common general knowledge relied upon in order to establish that the skilled person would have been in a position to carry out the claimed invention. It is therefore its duty to establish beyond reasonable doubts that A4 was indeed freely accessible before the priority date of 29 July 2005.

However, the category to which A4 belongs cannot be established with certainty. In fact, A4 contains on its front page both the indication "*ISO/IEC CD 14496-x*", as stressed by the appellant, and the contradicting mention "*Title: Text of Working Draft for Spatial Audio Coding (SAC)*". Moreover, A4 contains on page iii a "*Copyright notice*" which contradicts the appellant's view regarding the availability of A4 since it specifies that "*This ISO document is a working draft or committee draft and is copyright-protected by ISO. While the reproduction of working drafts or committee drafts in any form for use by participants in the ISO standards development process is permitted without permission from ISO, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from ISO.*"

As a matter of fact, the copyright notice limits the access of the information contained in A4 to the participants of the MPEG group, that is to the parties involved in the standard elaboration process. The mere possibility for members of the public to be authorised to access said information does not establish beyond doubt that it was indeed granted for said particular document or, in the case that it was indeed granted, that it was granted without any condition of confidentiality.

Finally, the reference in the US provisional application and in the corresponding WO publication, as cited above, to document A4, establishes that said document was known to the applicant of said provisional application on 19 July 2005, possibly as member of the MPEG group. It does not, however, imply that the public had access to said document. It is further observed, in this respect, that the provisional application was not, as such, made available to the public since, as a rule, US provisional patent applications are not published. Only the filing of later applications, such as for example WO-A-2007/009548, claiming said US provisional as priority would have finally allowed access to the content of said document.

All in all, the appellant was not in a position to prove beyond doubt that A4 had been made available to the public before the priority or filing date of the refused application.

- 2.2 The appellant did not comment on the fact that the examining division did not consider document A2 as evidence of common general knowledge. As the assessment of A2 made by the examining division appears to be correct, there is no reason to reverse said findings.

2.3 According to a second line of argumentation put forward by the appellant, the application contained, as such, sufficient information for carrying out the invention, even though the skilled person would not be in a position to rely on the teaching of document A4. Reference was made, in this respect, to the embodiments of Figures 2 and 3 and to the fact that the core of the invention resided in the steps of generating fixed output channels and arbitrary output channels. The step objected to by the Board of up-mixing a signal that was the result of a previous operation of down-mixing was well-known to the skilled person and defined the general context of the invention. Moreover, the claims and description made it abundantly clear that said steps of generating said output and arbitrary channels were carried out on the basis of the basis spatial information and extension spatial information, respectively.

It is not contested that operations consisting in down-mixing audio signals and later upmixing the so obtained signals would be part of common general knowledge in the field of audio signal processing. However, the application is silent as to how the two operations considered to reflect the core idea of the invention of generating fixed output channels and arbitrary output channels from said fixed output channels are integrated in the whole process of upmixing the downmix signal. The mere indication of the parameters required to carry out said steps is not sufficient and does not permit to establish what operations are performed with which audio data. As underlined by the appellant, the claimed method does not require, in its generality, that channels be recreated whose outputs reflect the signal of corresponding input channels of the encoding side.

It is, however, stressed that the upmixing of the downmix signals is not performed in an arbitrary manner but according to the fixed channel configuration information, that is according to a predetermined set of rules, defined beforehand. In the present circumstances, however, the description does not disclose how, for example, the sequence of "1" and "0" for the division identifiers contributes, in practice, to the creation of the various output channels defined by the fixed channel configuration information. The information actually required extends beyond the mere indication that a "1" is used to signal that the channel concerned is to be divided. It namely also encompasses the teaching required to define how, on the basis of the information provided by the sequence of division identifiers, the audio data are to be split between the generated channels.

2.4 It follows, that the application, as a whole does not permit to reproduce the claimed invention as defined in both independent claims 1 and 5. The application thus does not meet the requirements of Art. 83 EPC 1973.

3. *Auxiliary request - Admissibility*

3.1 The auxiliary request was filed during the oral proceedings before the Board, that is, at a very late stage of the appeal proceedings. The new request constituted an attempt to remedy the objection of insufficient disclosure by making it clear that the claimed invention relates to a sub-process within the whole audio data processing.

3.2 According to Art. 13(1) EPC, "*Any amendment to a party's case after it has filed its grounds of appeal or reply may be admitted and considered at the Board's*



*discretion. The discretion shall be exercised in view of inter alia the complexity of the new subject-matter submitted, the current state of the proceedings and the need for procedural economy".*

Moreover, it is generally accepted practice that the subject-matter of late filed requests should be such that it can be easily understood and regarded as allowable. A new request would be hence considered admissible, if the claims it encompasses solve all previous issues raised in the impugned decision or by the Board and do not give rise to any new objection (cf. Case Law of the Boards of appeal of the EPO, 8th edition 2016, section IV.E.4.4.2a)). This is not the case.

- 3.3 The claimed method concerns *"A method of creating an extended number of output channels usable for divisionally processing an audio signal"*. The claimed method comprises the step of *"generating a fixed number of output channels from the downmix signal according to the fixed spatial information"* followed by a step of *"generating an extended number of output channels from the fixed number of output channels according to the extension spatial information"*.

The first step of generating a fixed number of output channels is to be construed in the context of the application as generating the number of output channels specified by the fixed channel configuration information included in the fixed spatial information. In the case, for example, of a "5-2-5" configuration, this would imply generating 6 output channels (cf. description, page 22, line 24 to page 23, line 17).

This interpretation would be in line with the analysis of the appellant as it results from the statement of grounds of appeal (cf. page 4, 3rd paragraph) which further suggests that, as a rule, the fixed output channels reflect the multi-channel audio signal originally detected before the downmixing operation.

This interpretation is, however, contradicted by the next step recited in the claim of "*generating an extended number of output channels from the fixed number of output channels according to the extension spatial information*" which suggests that additional channels are created, thus raising further questions as to the function of these additional channels and their role in the whole audio signal processing.

3.4 The skilled person would therefore not be in a position to make sense of the claimed subject-matter.

It follows that the claim according to the auxiliary request is not clear, at least on a prima facie basis, contrary to Art. 84 EPC 1973.

3.5 For these reasons, the auxiliary request is not admitted into the appeal proceedings.

## **Order**

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

The appeal is dismissed.

The Registrar:

The Chairman:



R. Schumacher

G. Assi

Decision electronically authenticated