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# Datasheet for the decision of 6 May 2026

**Case Number:** T 1624/22 - 3.4.01

**Application Number:** 12701848.9

**Publication Number:** 2666161

**IPC:** G10L19/14

**Language of the proceedings:** EN

**Title of invention:**
ENCODING AND DECODING OF SLOT POSITIONS OF EVENTS IN AN AUDIO SIGNAL FRAME

**Applicant:**
Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.

**Headword:**
Event state number / Fraunhofer-Gesellschaft

**Relevant legal provisions:**
EPC Art. 84, 123(2)
RPBA 2020 Art. 12(6), 13(1), 13(2)



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It can be changed at any time and without notice

**Keyword:**
Claims - clarity - main request (no) - clarity - auxiliary requests 1c, 4 (no)
Amendment to appeal case - auxiliary requests 1a, 1a1, 1b - amendment overcomes issues raised (no)
Amendments - auxiliary requests 2, 3 - allowable (no)
Late-filed request - auxiliary requests 2a, 3a, 3b, 3c, 3d, 4a, 5, 5a, 5b - admitted in first-instance proceedings (no)


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**Case Number: T 1624/22 - 3.4.01**

# D E C I S I O N
# of Technical Board of Appeal 3.4.01
# of 6 May 2026

| | |
|---|---|
| **Appellant:** (Applicant) | Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.V.<br>Hansastr. 27c<br>80686 München (DE) |
| **Representative:** | Zinkler, Franz<br>Schoppe, Zimmermann, Stöckeler<br>Zinkler, Schenk & Partner mbB<br>Patentanwälte<br>Radlkoferstrasse 2<br>81373 München (DE) |
| **Decision under appeal:** | **Decision of the Examining Division of the European Patent Office posted/electronically transmitted on 17 February 2022 refusing European patent application No. 12701848.9 pursuant to Article 97(2) EPC.** |

**Composition of the Board:**

| | |
|---|---|
| **Chairman** | P. Scriven |
| **Members:** | T. Zinke |
| | L. Bühler |

## Summary of Facts and Submissions

I. The Examining Division refused the application because the main request and auxiliary request 1 lacked novelty (Article 54(1)(2) EPC) in view of documents D1 and D2:

D1 US-A-2007/201514

D2 Kuntz et al.: "Finalization of CE proposal on improved applause coding in USAC", 95. MPEG Meeting, 24-1-2011 - 28-1-2011; MOTION PICTURE EXPERT GROUP OR ISO/IEC JTC1/SC29/WG11 ,M19311, 19 January 2011.

They refused auxiliary requests 2, 3, and 4 for added subject-matter (Article 123(2) EPC) and lack of clarity (Article 84 EPC) and declined to admit auxiliary requests 2a, 3a, 3b, 3c, 3d, 4a, 5, 5a, and 5b into the proceedings.

II. With the statement setting out the grounds of appeal, the applicant requested the grant of a patent based on a main request or, alternatively, on auxiliary requests 1, 2, 2a, 3, 3a, 3b, 3c, 3d, 4, 4a, 5, 5a, 5b, which are identical to the respective requests before the Examining Division.

III. The Board summoned the appellant to oral proceedings. In a communication under Article 15(1) RPBA, the appellant was informed of the Board's preliminary opinion, confirming the Examining Division's position

with regard to all requests and raising new clarity objections against the main request and auxiliary request 1.

IV. With a reply to the Board's preliminary opinion, the applicant provided counterarguments and submitted new auxiliary requests 1a and 1b. The previous auxiliary request 1 became auxiliary request 1c.

V. During oral proceedings, the applicant submitted a further auxiliary request, 1a1. At the end of the oral proceedings, the order of the auxiliary requests was confirmed to be as follows: 1a, 1a1, 1b, 1c, 2, 2a, 3, 3a, 3b, 3c, 3d, 4, 4a, 5, 5a, and 5b.

VI. Claims 1, 11, 14, and 15 of the main request read as follows:

> *1. An apparatus for decoding (10; 40; 60; 410) an encoded audio signal having an audio signal frame comprising slots and events associated with the slots, comprising:*
> *an analysing unit (20; 42; 70; 420) for analysing a frame slots number indicating the total number of slots of the audio signal frame,*
> *an event slots number indicating the number of slots comprising the events of the audio signal frame, and an event state number; and*
> *a generating unit (30; 45; 80; 430) for generating an indication of a plurality of positions of slots comprising the events in the audio signal frame using the frame slots*

*number, the event slots number and the event state number.*

*11. An apparatus for encoding (510) positions of slots comprising events in an audio signal frame, comprising:*
*an event state number generator (530) for encoding the positions of slots by encoding an event state number; and*
*a slot information unit (520), being adapted to provide a frame slots number indicating the total number of slots of the audio signal frame and an event slots number indicating the number of slots comprising the events of the audio signal frame to the event state number generator (530),*
*wherein the event state number, the frame slots number and the event slots number together indicate a plurality of positions of slots comprising the events in the audio signal frame.*

*14. A method for decoding positions of slots comprising events in an audio signal frame comprising:*
*analysing a frame slots number indicating the total number of slots of the audio signal frame, an event slots number indicating the number of slots comprising the events of the audio signal frame, and an event state number; and*
*generating an indication of a plurality of positions of slots comprising the events in the audio signal frame using frame slots number, the event slots number and the event state number.*

*15. A method for encoding positions of slots comprising events in an audio signal frame comprising:*
*receiving or determining a frame slots number indicating the total number of slots of the audio signal frame,*
*receiving or determining an event slots number indicating the number of slots comprising the events of the audio signal frame,*
*encoding an event state number based on the event state number, the frame slots number and the event slots number, such that an indication of a plurality of positions of slots comprising the events in the audio signal frame can be decoded by using frame slots number, the event slots number and the event state number.*

VII. Auxiliary request 1a has a single claim, in which, to the end of claim 14 of the main request the following part has been added:

*[... event state number],*

*wherein the method implements the decoding of positions of slots comprising events by analysing the frame slots number and by generating the indication of the plurality of positions of slots according to:*

*s = bsTsdCodedPos;*
*p = bsTsdNumTrSlots+1;*
*N = numSlots;*

```
for (k=0; k<N; k++)
{
    TsdSepData[k]=0;
}

for (k=N-1; k>=0; k--)

{
    if (p > k) {
        for (;k>=0; k--)
            TsdSepData[k]=1;
        break;
    }
    c = k-p+1;
    for (h=2; h<=p; h++) {
         c *= k - p + h;
         c /= h;
    }
    if (s >= (int)c) { /* c is long long for
up to 32 slots */
        s -= c;
        TsdSepData[k]=1;
        p--;
        if (p == 0)
             break;
    }
}
```

*wherein* numSlots *indicates the frame slots number,*
*wherein* bsTsdNumTrSlots *indicates a number of transient slots, wherein* bsTsdNumTrSlots *indicates the event slots number,*
*wherein* bsTsdCodedPos *represents an encoding transsient [sic] positions, wherein*

bsTsdCodedPos *indicates the event state number,*
*wherein each of the events is a transient event indicating an existence of a transient at a position of one of the slots, so that MPEG Surround 212 data comprising the transient is to be processed by a transient steering decorrelator of a Unified Speech and Audio Coding decoder.*

VIII. The sole claim 1 of auxiliary requests 1a1 is amended as compared to claim 1 of auxiliary request 1a in the definitions of *numSlots*, *BsTsdNumTrSlots* and *bsTsdCodedPos* and by additional text at the end (emphasis, as compared to auxiliary request 1a, by the Board)

*...*
*wherein* numSlots ~~*indicates*~~*is the frame slots number,*
*wherein* BsTsdNumTrSlots *indicates a number of transient slots, wherein* BsTsdNumTrSlots ~~*indicates*~~*is the event slots number,*
*wherein* bsTsdCodedPos *represents an encoding of transsient [sic] positions, wherein* bsTsdCodedPos ~~*indicates*~~*is the event state number,*
*...*

[...Audio Coding decoder~~.~~]

*wherein the event state number* bsTsdCodedPos *has been encoded depending on:*

```
p_s = 0;
for (k=tsdPosLen-1; k>=0; k--){
      slots= tsdPos[k];
      if (k >= slots) {
            break;
      }
      c = 1; /* c is long long for up to 32
slots */
      for (h=1; h<=(k+1); h++) {
            c *= slots - k-1 + h;
            c /= h;
      }
      p_s += c;
}
bsTsdCodedPos = p_s;
```

*wherein* tsdPos *is a vector holding the position of slots comprising the events, wherein* tsdPosLen *is the event slots number indicating a number of transient slot positions in the vector* tsdPos*.*

IX. Auxiliary request 1b has a single claim, in which, to the end of claim 14 of the main request, the following has been added:

*[... number],*

*wherein the method implements the decoding of positions of slots comprising events by analysing the frame slots number and by generating the indication of the plurality of positions of slots depending on:*

*For each slot h*
*If* $state > \binom{N-h-1}{P}$ *then*
*Assign a position to slot h*
*Update remaining state state:=*
$state - \binom{N-h-1}{P}$
*Reduce number of positions left P :=*
*P-1*
*End*
*End*

*wherein h indicates a postion [sic] of one of the slots,*
*wherein* N *indicates the total number of slots of the audio signal frame,*
*wherein* P *indicates in number of slots comprising the events, or an [sic] first updated number depending on the number of slots comprising the events,*
*wherein* state *indicates the event state number or a second updated number depending on the event state number,*
*wherein each of the events is a transient event indicating an existence of a transient at a position of one of the slots, so that MPEG Surround 212 data comprising the transient is to be processed by a transient steering decorrelator of a Unified Speech and Audio Coding decoder.*

X. In auxiliary request 1c, claims 1 and 2 are identical to claims 1 and 14 of the main request, respectively. All other claims of the main request were removed.

XI. In auxiliary request 2, claim 2 is similar to claim 1 of auxiliary request 1a. One feature of the latter, and part of another are missing, as indicated:

> *[2. ... the event slots number and the event state number]*
> *wherein the method implements the decoding of positions of slots comprising events depending on ~~by analysing the frame slots number and be generating the indication of the plurality of positions of slots according to~~*
> *[s = ...]*
>
> ...
>
> *[...indicates the event state number].*
> *~~wherein each of the events is a transient event indicating an existence of a transient at a position of one of the slots, so that MPEG Surround 212 data comprising the transient is to be processed by a transient steering decorrelator of a Unified Speech and Audio Coding decoder.~~*

Claim 1 of auxiliary request 2 is a correspondingly formulated claim for a decoding apparatus.

XII. Claim 2 of auxiliary request 2a is amended, as compared to claim 2 of auxiliary request 2, by adding

> *[...the event slots number and the event state number]*

wherein the method for decoding comprises decoding the slot positions of transients in an audio signal frame;

*[wherein the method implements the decoding ...],*

and claim 1 is correspondingly amended.

XIII. The sole claim of auxiliary request 3 is identical to claim 1 of auxiliary request 2.

XIV. The sole claim of auxiliary request 3a is identical to claim 1 of auxiliary request 2a.

XV. The sole claim of auxiliary request 3b is amended, as compared to claim 2 of auxiliary request 2a, by reformulation of the start of (amendments emphasized by the Board):

*1. A method for decoding ~~positions of slots comprising events in an audio signal frame~~ an encoded audio signal having an audio signal frame comprising slots and events associated with the slots, comprising:*
*...*

XVI. The sole claim of auxiliary request 3c is amended, as compared to claim 1 of auxiliary request 3, by correction of the misspelling "transsient" and the addition, at the end, of:

*[...indicates the event state number],*

*wherein decoding is conducted by the analysing unit (20; 42; 70; 420) and the generating unit (30; 45; 80; 430) which cooperate in the process of decoding, while the analysing unit (20; 42; 70; 420) is responsible for executing tests, the generating unit (30; 45; 80; 430) generates and updates intermediate results of the decoding process, e.g. an updated event state number.*

XVII. The sole claim of auxiliary request 3d is amended, as compared to claim 1 of auxiliary request 3c, by the addition, at the end, of:

*[... e.g. an updated event state number],*

*wherein the analysing unit (20; 42; 70; 420) is configured to execute k>=0 of the code in portion for (k=N-1; k>=0; k--) of the code,*
*wherein the analysing unit (20; 42; 70; 420) is configured to execute p>k of the code,*
*wherein the analysing unit (20; 42; 70; 420) is configured to execute s >= (int)c of the code,*
*wherein the analysing unit (20; 42; 70; 420) is configured to execute p == 0 of the code,*
*wherein the generating unit (30; 45; 80; 430) is configured to conduct all other portions of the code.*

XVIII. The sole claim of auxiliary request 4 reads:

*1. An apparatus for decoding (10; 40; 60; 410) an encoded audio signal having an audio signal frame comprising slots and events associated with the slots, comprising:*
*an analysing unit (20; 42; 70; 420) for analysing a frame slots number indicating the total number of slots of the audio signal frame, an event slots number indicating the number of slots comprising the events of the audio signal frame, and an event state number; and*
*a generating unit (30; 45; 80; 430) for generating an indication of a plurality of positions of slots comprising the events in the audio signal frame using the frame slots number, the event slots number and the event state number,*
*wherein the apparatus (10; 40; 60; 410) comprises a One-To-Two decoding block which comprises a decorrelator block, wherein the decorrelator block comprises a signal separator, an all-pass decorrelator and a transient decorrelator, and a signal combiner,*
*wherein, if bsTsdEnable==1, the input signal is separated into a transient stream* $\nu_{X,Tr}^{n,k}$*, and a non-transient stream* $\nu_{X,nonTr}^{n,k}$ *according to*

$$\nu_{X,Tr}^{n,k} = \begin{cases} \nu_X^{n,k}, & if TsdSepData(n) = 1, 7 \leq k \\ 0, & otherwise \end{cases}$$

$$\nu_{X,nonTr}^{n,k} = \begin{cases} 0, & if\ TsdSepData(n) = 1, 7 \leq k \\ \nu_X^{n,k}, & otherwise \end{cases}$$

*wherein a per-slot transient separation flag TsdSepData(n) is decoded from a variable length code word bsTsdCodedPos, wherein a code word length nBitsTsdCW of bsTsdCodedPos is calculated according to:*

$$nBitsTsdCW = ceil\left(log_2\left(\begin{matrix} bsFrameLength \\ bsTsdNumTrSlots+1 \end{matrix}\right)\right)$$

*wherein decoding of transient slot separation data bsTsdCodedPos into TsdSepData[n], an array of length numSlots consisting of '1's for coded transient positions and '0's else, is defined as follows:*

```
s = bsTsdCodedPos;
p = bsTsdNumTrSlots+1;
N = numSlots;

for (k=0; k<N; k++)
{
    TsdSepData[k]=0;
}

for (k=N-1; k>=0; k--)
{
    if (p > k) {
        for (;k>=0; k--)
            TsdSepData[k]=1;
        break;
 }
 c = k-p+1;
 for (h=2; h<=p; h++) {
     c *= k - p + h;
     c /= h;
```

```
  }
  if (s >= (int)c) { /* c is long long for
up to 32 slots */
      s -= c;
      TsdSepData[k]=1;
      p--;
      if (p == 0)
          break;
   }
}
```

*wherein numSlots indicates a number of slots in a frame, wherein numSlots indicates the frame slots number,*
*wherein bsTsdNumTrSlots indicates a number of transient slots, wherein bsTsdNumTrSlots indicates the event slots number,*
*wherein bsTsdCodedPos represents an encoding transsient [sic] positions,wherein bsTsdCodedPos indicates the event state number,*
*wherein, if (bsTsdEnable==0), the input signal is processed as if TsdSepData(n)=0 for all n,*
*wherein transient signal components are processed in a transient decorrelator structure $D_{TR}$ as follows:*

$$d_{X,Tr}^{n,k} = \begin{cases} e^{j\varphi_{TSD}^{n}} \cdot \nu_{X,Tr}^{n,k} & , \ if\ bsTsdEnable = 1 \\ 0 & , \ otherwise \end{cases}$$

*where*

$$\varphi_{TSD}^{n} = \pi \cdot 0.25 \cdot bsTsdPhaseData(n)$$

*wherein non-transient signal components are processed in all-pass decorrelator $D_{AP}$ as defined in the next subsection, yielding the decorrelator output for non-transient signal components,*

$$d_{X,nonTr}^{n,k} = \mathbf{D}_{AP}\left\{\nu_{X,nonTr}^{n,k}\right\},$$

*wherein the decorrelator outputs are added to form the decorrelated signal containing both transient and non-transient components, as:*

$$d_{X}^{n,k} = d_{X,Tr}^{n,k} + d_{X,nonTr}^{n,k}.$$

XIX. The sole claim of auxiliary request 4a is amended, as compared to claim 1 of auxiliary request 4, by adding a feature:

*[... the event slot number and the event state number,]*

wherein the apparatus for decoding (10; 40; 60; 410) is adapted to decode the slot positions of transients in an audio signal frame;

*[wherein the apparatus (10; 40; 60; 410) comprises a One-To-Two decoding block ...].*

XX. The sole claim of auxiliary request 5 is amended, as compared to claim 1 of auxiliary request 4a, by defining a method for decoding instead of an apparatus for decoding, and by amending the first part of the claim as follows (amendments emphasized by the Board):

*An ~~apparatus~~ method for decoding ~~(10; 40; 60, 410)~~ an encoded audio signal having an audio signal frame comprising slots an events with the slots, comprising:*
~~an analysing unit (20; 42; 70; 420) for~~ analysing a frame slots number indicating the total number of slots of the audio signal frame, an event slots number indicating the number of slots comprising the events of the audio signal frame, and an event state number; and
~~a generating unit (30; 45; 80; 430) for~~ generating an indication of a plurality of positions of slots comprising the events in the audio signal frame using the frame slots number, the event slots number, and the event state number,
wherein the ~~apparatus~~ method for decoding ~~(10; 40; 60; 410) is adapted to decode~~ comprises decoding the slot positions of transients in an audio signal frame;
~~wherein the apparatus (10; 40; 60; 410) comprises a One-To-Two decoding block which comprises a decorrelator block, wherein the decorrelator block comprises a signal separator, an all-pass decorrelator and a transient decorrelator, and a signal combiner,~~
*[wherein, if bsTsdEnable===1, ...]*

XXI. The sole claim of auxiliary request 5a is amended, as compared to the sole claim of auxiliary request 4a, by amending one feature and by adding another.

The amended feature reads (amendments emphasized by the Board):

*[...the event slots number and the event state number]*

wherein the ~~apparatus~~ method for decoding ~~(10; 40; 60; 410) is adapted to decode~~ comprises decoding the slot positions of transients in an audio signal frame;

*[wherein the apparatus (10; 40; 60; 410) comprises a One-To-Two decoding block...]*

The sole claim of auxiliary request 5a adds, to the sole claim of auxiliary request 4a, the same feature that auxiliary request 3c adds with respect to auxiliary request 3 (see paragraph XVI.).

XXII. The sole claim of auxiliary request 5b is amended, as compared to the sole claim of auxiliary request 5a, by adding the same feature that auxiliary request 3d adds with respect to auxiliary request 3c (see paragraph XVII.).

XXIII. The applicant's arguments and submissions, insofar as they are relevant to this decision, are discussed in the Reasons, below.

## Reasons for the Decision

*Main request - Lack of clarity*

1. In claims 1, 11, 14, and 15 of the main request, the terms "frame slots number", and "event slots number" are defined as indicating the total number of slots in the frame and the number of slots comprising events. A corresponding definition of "event state number" is missing, however. Since "event state number" is not an established term, in order for a skilled person to understand its meaning and the claimed apparatuses and methods, it is necessary to define what it means and how it is obtained (in the claims defining encoding) and how, from the encoded audio signal and the event state number, the position of the plurality of slots comprising events can be derived (in the claims defining decoding).

2. Since this information is lacking, the term "event state number" and the features referring to it are not clear (Article 84 EPC).

3. From the application (page 11, lines 5 to 26 of the published application), it is apparent that the term "event state number" has a particular meaning. When considering a frame with N slots, of which P slots comprise events, the positions of slots comprising events are represented by a unique "event state number". It is further specified that the decoding apparatus has to be aware which event state number represents which combination of slot positions comprising events.

4. During oral proceedings, the appellant argued that the skilled person, after reading the application as filed, would understand that in the independent claims, a particular way of encoding and decoding positions of slots is defined, which is based on combinatorial logic.

5. The Board is not persuaded.

6. In the technical field of audio coding, the term "event" is so broad that neither a particular meaning of "event state" nor "event state number" can be understood by the skilled person.

7. For instance, the claims do not even define the events as audio events.

8. The meaning of "event" is unclear. In some contexts, a single hand clap might be one, but it depends both on the nature of the sound and on the nature of the encoder (published application, page 4, lines 3 - 16). Neither the nature of the sound nor that of the encoder is defined in the claim. Furthermore, the description has examples of "events" that are very different, for example, the answer to the question of whether a time slot contains something "tonal" or "noise" (published application, page 9, line 28 - page 10, line 4). In effect, an "event" might be anything that the encoder/decoder pair can make use of. Without some clear limitation on the encoding, decoding, and sound, "event" is effectively meaningless.

9. Since "event" is unclear, it follows that "event state" is unclear. There is no definition in the claim, or in the application as a whole, of what the state of a hand

clap might be.

10. It further follows that "event state number" has no clear meaning. Over and above the meaninglessness of the terms "event" and "event state", the skilled person now has to be able to ascribe a number. Even if they knew what "event" and "event state" were, it would still be unclear what the number is. It might be 7, because this is the seventh hand clap in this recording; or the seventh in this frame; or it might be the seventh slot in which the content is noisy; or, perhaps, 7 is a code that indicates music in C minor.

11. Hence, essential features are lacking, which would define the term "event state number" in a way that the skilled person could understand.

*Auxiliary request 1a, 1a1, 1b - Exceptional Circumstances*

12. Auxiliary requests 1a and 1b were submitted in response to the Board's preliminary opinion, auxiliary request 1a1 was submitted during oral proceedings before the Board. Their admission is subject to the Board's discretion, and Articles 12 and 13 RPBA apply.

13. The Board, in its preliminary opinion, objected to the main request for lack of clarity. This was the first time that these objections had been made.

14. The corresponding passages of the preliminary opinion stated:

> *2. The Board acknowledges that clarity was not discussed during examination proceedings. However, in the Board's current*

*view, there are essential features lacking, in all independent claims.*

*3. Whereas the "frame slots number", indicating the total number of slots in the frame, and the "event slots number", indicating the number of slots comprising the events of the audio signal frame are defined in some detail, a corresponding definition of "event state number" is missing. Since "event state number" is not a well-established term, in order for a skilled person to understand its meaning and the claimed apparatuses and methods it seems necessary to define how it is derived and how, from the encoded audio signal and the event state number, the position of the plurality of slots can be derived.*

*4. The Board also doubts that the term "event" has a well-established meaning, without any reference to any particular audio coding standard at all.*

15. These clarity objections are those discussed above with regard to the main request.

16. Mentioning these for the first time in the preliminary opinion amounts to exceptional circumstances, in the terms of Article 13(2) RPBA.

17. The amendments in auxiliary requests 1a, 1a1, and 1b are intended to address these clarity objections, (cf., for instance, submission of 3 May 2026, page 1, last paragraph to page 2, first paragraph).

*Auxiliary requests 1a, 1b - Consideration*

18. The respective sole claims of auxiliary request 1a and 1b add further details to the decoding method defined in claim 14 of the main request by introducing different detailed decoding algorithms, as originally shown in Figure 17 (for auxiliary request 1a) or on page page 18, lines 4 to 10 of the application as published (for auxiliary request 1b). Both sole claims are also amended by defining the term "event" based on original description on page 5, lines 1 and 2; page 29, lines 33 to 35; and page 30, lines 4 to 7 (cf. submission of 3 May 2026, sections 1 and 2).

19. While the amendments restrict the term "event" to transient events related to MPEG Surround 212 data, it is still not clear what an "event state" and an "event state number" are. The sole claims of auxiliary request 1a and 1b still lack any information about how the event state number is derived (encoded) or wherefrom the method of decoding is aware of the encoding method. The method of decoding can only output a correct decoded signal, if the "event state number" was appropriately encoded.

20. Since the clarity objection with regard to the term "event state number" is, prima facie, not overcome, auxiliary requests 1a and 1b are not admitted into the appeal proceedings (Article 13(1) RPBA).

*Auxiliary request 1a1 - Consideration*

21. The amendments to claim 1 in auxiliary request 1a1, as compared to claim 1 of auxiliary request 1a, introduce an algorithm for encoding an event state number, as

described in Figure 13 and the corresponding description, page 21, lines 25 to 26 of the published application.

22. Whereas the amendment restricts the term "event state number" to a particular way of encoding transient positions, it is still not clear, what an "event state" is and what a "number" of such an "event state" might be.

23. Further, additional clarity issues are introduced, prima facie.

24. For instance, there are two different variables that are event slots numbers, i.e. the variables tsdPosLen and bsTsdNumTrSlots. It is unclear whether these variables are the same or whether and how they are distinguished from one another.

25. In addition, the variables bsTsdNumSlots and bsTsdCodedPos are defined in two different ways, respectively. The variable bsTsdNumSlots is defined as indicating "a number of transient slots" and as being "the event slots number" and the variable bsTsdCodedPos is defined as representing "an encoding of transient positions" and as being "the event state number".

26. The vector TsdSepData[n], is not defined.

27. Hence, the amendments made are, prima facie, not clear.

28. Due to the new clarity issues introduced by the amendments, auxiliary request 1a1 is not admitted into the appeal proceedings (Article 13(1) RPBA).

*Auxiliary request 1c - Lack of clarity*

29. Auxiliary request 1c is identical to auxiliary request 1 before the Examining Division.

30. In the decision under appeal, the Examining Division held that then pending auxiliary request 1 was not allowable (decisions, sections 46 to 46.4), since claims 1 and 2 were identical to claims 1 and 14 of the main request, so that the same objections equally applied.

31. The Board also has objections to claims 1 and 14 of the main request (see above) which apply equally to claims 1 and 2 of auxiliary request 1c.

32. Auxiliary request 1c is not allowable.

*Auxiliary request 2 - Article 123(2) EPC*

33. Claims 1 and 2 of auxiliary request 2, as compared to the main request, add the pseudo code depicted in Figure 11 as originally filed.

34. In the decision under appeal, the Examining Division held that the amendments in auxiliary request 2 had no basis in the application as filed (Article 123(2) EPC) and lacked clarity (Article 84 EPC) (cf. decision, section II. Grounds, points 47 to 51.2).

35. The Examining Division held, *inter alia*, that the skilled person would understand that the pseudo code of Figure 11 was meant to be used for MPEG Surround "MPS 212 data", USAC (Unified Speech and Audio Coding), and the tool for Transient Steering Decorrelation (TSD).

Hence, by not limiting to this context, the amendment introduced an unallowable amendment (decision, section 48.5 to 48.12).

36. The appellant argued that using this pseudo code was also disclosed without a connection to MPEG Surround, USAC and TSD and referred, for instance, to page 9, line 27 to page 10, line 12 of the published application.

37. Indeed, this passage states that decoding slot positions in an audio signal frame is not restricted to these standards. Claims 1 and 2, however, with the definition of the terms used in the pseudo code at the end of the claims, refer to transients, e.g.

> *wherein BsTsdNumTrSlots indicates a number of transient slots*

and

> *wherein BsTsdCodedPos represents an encoding transient positions.*

38. The application, as a whole, focusses on dealing with transients in USAC, and with the particular way in which USAC is supposed to deal with them by using a transient steering decorrelator (page 4, lines 26 to 28):

> *However, USAC does offer a dedicated adaption for the requirement of proper applause handling. Said adaption is named Transient Steering Decorrelator (TSD) and is an embodiment of the invention.*

39. Throughout the application, the transmission from an encoder to a decoder of slot positions with transients is only disclosed in connection with a separation of slots with and without transients, which can be used to handle them differently in the decoder (cf., for instance, page 5, lines 1 to 15 of the published application). This was also disclosed as the reason, why the information of the position of slots with and without transients was so important for the decoder. (see page 9, lines 17 to 26 of the published application).

40. Thus, defining slots with transients in claims 1 and 2, without including a transient steering decorrelation, is an unallowable intermediate generalisation (Article 123(2) EPC).

*Auxiliary request 3 - Article 123(2) EPC*

41. The sole claim of auxiliary request 3 is identical to claim 1 of auxiliary request 2.

42. Hence, the objections under Articles 123(2) EPC, discussed above with regard to auxiliary request 2, apply as well.

43. Auxiliary request 3 is not allowable.

*Auxiliary request 4 - Lack of clarity*

44. Auxiliary request 4 is amended, as compared to auxiliary request 3, by features referring to the embodiment of Figure 21 of the application as filed,

with the description page 30, line 20 to page 31, line 27.

45. With the amendment, the appellant seeks to overcome the objection to auxiliary requests 2 and 3, that there was no definition of a transient steering decorrelator.

46. However, the amendments introduce features that lead to a further lack of clarity (Article 84 EPC).

47. The Board agrees with the Examining Division that the use of the term "input signal" in the amendment is not clear, because both an "input signal" and an "encoded audio signal frame" are defined in the claim and it is not clear whether these are the same or not (see decision, sections 77.2 and 78.2).

48. Secondly, in the claim an equation is given:

$$\varphi_{TSD}^{n} = \pi \cdot 0.25 \cdot bsTsdPhaseData(n)$$

however, the variable bsTsdTrPhaseData(n) is not defined. There is no indication, in the application, of what this variable is meant to be.

49. Third, the claim wording includes a feature:

> *... wherein non-transient signal components are processed in all-pass decorrelator $D_{AP}$ as defined in the next subsection ...*

However, there is no "next subsection".

50. During oral proceedings, the appellant argued that the skilled person would understand that the input signal was the same as the encoded audio signal.

51. This does seem the most probable interpretation, but there is no reason why, under these circumstances, a different term is used in the claim, which - due to the different wordings - at least might give the impression that they refer to different signals.

52. With regard to the variable bsTsdTrPhaseData(n) and to the all-pass decorrelator $D_{AP}$, the appellant argued, during oral proceedings before the Board, that the skilled person in the field of audio coding would know how these terms should be interpreted.

53. The Board does not agree.

54. The application as originally filed comprises Figures 16 to 23 and the corresponding description (page 29, line 30 to page 32, line 32), in which the amendment to claim 1 of auxiliary request 4 was originally described with

> *The following explains USAC syntax definitions adapted to support a Transient Steering Decorrelator (TSD) according to an embodiment.*

55. Hence, the term "all-pass decorrelator $D_{AP}$" and the equation above might belong to USAC syntax definitions. However, without restricting the subject-matter of claim 1 to USAC and its syntax definitions, the term and the equation cannot be understood *per se*, without further definitions in the claim.

56. Thus, claim 1 of auxiliary request 4 lacks clarity (Article 84 EPC).

*Auxiliary requests 2a, 3a, 3b, 3c, 3d, 4a, 5, 5a, 5b - Consideration*

57. The Examining Division did not admit these auxiliary requests (decision, points 52 to 57; 62 to 72; 80 to 84).

58. Article 12(6), 1st sentence RPBA states

> *The Board shall not admit requests, facts, objections or evidence which were not admitted in the proceedings leading to the decision under appeal, unless the decision not to admit them suffered from an error in the use of discretion or unless the circumstances of the appeal case justify their admittance.*

59. With the statement of grounds, the applicant did not set out any error in the use of discretion by the Examining Division and the Board does not see one.

60. During oral proceedings before the Board, no additional argumentation was made.

61. In addition, claim 1 of auxiliary request 2a as well as the sole claims of auxiliary requests 3a, 3b, 3c, 3d include the same definition including transients without defining a transient steering decorrelator as claims 1 and 2 of auxiliary request 2. Hence, the objections to auxiliary request 2 apply equally here.

62. Further, the features discussed above with regard to auxiliary request 4 that introduce clarity objections are included in auxiliary requests 4a, 5, 5a, and 5b as

well, so that these auxiliary requests cannot overcome these objections.

63. Auxiliary requests 2a, 3a, 3b, 3c, 3d, 4a, 5, 5a, and 5b are not admitted (Article 12(6), 1st sentence RPBA).

## Order

## For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Meyfarth P. Scriven

Decision electronically authenticated