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**Datasheet for the decision
of 1 March 2011**

Case Number: T 2361/09 - 3.5.03

Application Number: 97114387.0

Publication Number: 0825725

IPC: H04B 1/66

Language of the proceedings: EN

Title of invention:

Subband coding with adaptive bit allocation

Applicant:

Sony Corporation

Headword:

Adaptive bit allocation/SONY

Relevant legal provisions:

EPC Art. 84

Relevant legal provisions (EPC 1973):

-

Keyword:

"Clarity (no)"

Decisions cited:

T 1129/97

Catchword:

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Case Number: T 2361/09 - 3.5.03

D E C I S I O N
of the Technical Board of Appeal 3.5.03
of 1 March 2011

Appellant: Sony Corporation
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Decision under appeal: Decision of the examining division of the
European Patent Office posted 13 July 2009
refusing European patent application
No. 97114387.0 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: A. S. Clelland
Members: F. van der Voort
M.-B. Tardo-Dino

Summary of Facts and Submissions

- I. This appeal is against the decision of the examining division refusing European patent application No. 97114387.0 (publication number EP 0 825 725 A).
- II. The reasons given for the refusal were that the application did not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art (Article 83 EPC), that claims 1 and 4 then on file were not clear and not supported by the description (Article 84 EPC), and that these claims contained subject-matter which extended beyond the content of the application as filed (Article 123(2) EPC).
- III. In the notice of appeal the appellant requested that a patent be granted and conditionally requested oral proceedings. With the statement of grounds of appeal the appellant filed a new set of claims and requested that the decision under appeal be set aside and that a patent be granted on the basis of the new set of claims. Arguments in support were also submitted.
- IV. The appellant was summoned to oral proceedings. In a communication accompanying the summons the board raised, without prejudice to its final decision, objections against claims 1 and 4 under Articles 84 and 123(2) EPC.
- V. In preparation for the oral proceedings the appellant filed claims of an auxiliary request and submitted arguments in support of this request.

VI. Oral proceedings were held on 1 March 2011 in the course of which the appellant withdrew the main and auxiliary requests and filed claim 1 of a sole request. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of claim 1 as filed during the oral proceedings.

At the end of the oral proceedings, after deliberation, the board's decision was announced.

VII. Claim 1 of the sole request reads as follows:

"A digital signal processing method comprising the steps of:

 splitting (101...102) an input digital signal on a time domain into frequency band components to output respective signal components;

 normalizing data in each of time frequency two-dimensional block [*sic*] (103, 104, 105) based on the signal component in the time frequency two-dimensional block thereby to obtain normalized data;

 separating (109...111, 103...105), with respect to time each of signal components into time signal blocks for orthogonally transforming;

 orthogonally transforming (103...105) said time signal blocks into spectral signal blocks;

 determining a number of assigned bits for each of the spectral signal blocks so that a total number of bits to be assigned to all spectral signal blocks coincides with a bit rate specified in coding format; and

 quantizing (106...108) each of the spectral signal blocks according to said normalized data and in accordance with the number of bits determined in said

determining step (118; 302..310) while at the same time obtaining an information compression parameter for each of said time frequency two dimensional block [sic];

characterized in that;

for determining the total number of assigned bits for each of the spectral signal blocks at first a provisional calculation of an amount of bits assigned for each spectral signal block is performed whereby the bit allocation amount is determined based on a quantization coefficient which is determined and which is representing the feature of the signal component in the time frequency two-dimensional block for each of said time frequency two-dimensional blocks;

wherein when the total number of bits assigned to all spectral signal blocks is not equal to the bit rate specified in a coding format as a result of converting a bit assignment value calculated as a real number into an integer in said determining step (118);

a spectral signal block having a maximum degree of bit requirement is determined (ST-11) by calculating (313) based on a maximum signal component in the time frequency two-dimensional block or the normalized data and the assigned bit amount provisionally calculated for each spectral signal block, a maximum quantization error that can occur in each spectral signal block as degree of bit requirement of said spectral signal block and a number of assigned bits for a spectral signal block having a maximum degree of bit requirement is increased using excess bits, or

a spectral signal block having a minimum degree of bit requirement is determined (ST-11) by calculating (313) based on a maximum signal component in the time frequency two-dimensional block or the normalized data and the assigned bit amount provisionally calculated for

each spectral signal block, a maximum quantization error that can occur in each spectral signal block as a degree of bit requirement of said spectral signal block and the number of assigned bits for a spectral signal block having a minimum degree of bit requirement is decreased;*[sic]*"

Reasons for the Decision

1. Article 84 EPC - clarity

- 1.1 Claim 1 is not clear in that the term "time frequency two-dimensional block" in the second step of the claimed method ("normalizing data ...") does not have a well-recognised meaning in the relevant art. Nor does the claim give this term, which occurs five times in the claim, a specific meaning.

The appellant argued that the term "time frequency two-dimensional block" was to be understood as referring to time signal blocks of the signal components obtained in the first step ("splitting ..."). After the step of normalizing data, these time signal blocks were split into time signal blocks of various size in the third step of the method ("separating ..."). The latter time signal blocks were subsequently orthogonally transformed into spectral signal blocks in the fourth step of the claimed method ("orthogonally transforming ..."). In support, the appellant referred to the description as filed, page 11, lines 16 to 27, and Figs 1 and 2A to 2D.

In the board's view however, in order to comply with the requirements of Article 84 EPC, the claim should be

clear in itself, i.e. an addressee should be able to understand the claim without a need to refer to the description, since in accordance with Article 84 EPC the claims, rather than the combination of the claims and the description, shall define the matter for which protection is sought (cf. T 1129/97, points 2.1 and 2.1.2, OJ EPO 2001, 273).

In present claim 1, in the first step referred to by the appellant, i.e. "splitting (101...102) an input digital signal on a time domain into frequency band components to output respective signal components", there is no explicit reference to time frequency two-dimensional blocks. Nor is it implicit that the "respective signal components" in this step constitute time signal blocks, since frequency splitting of an input signal does not necessarily involve a splitting of the signal into time signal blocks.

Further, the board notes that according to the description the spectral signal blocks are obtained by orthogonally transforming time signal blocks in the MDCT (modified discrete cosine transform) circuits 103, 104, 105 (page 10, lines 9 to 13, page 12, lines 13 to 22, and Fig. 1). Subsequently, bit assignment coding circuits 106, 107, 108 (Fig. 1) "normalize and quantize the respective spectral data or the MDCT coefficient data" (page 13, lines 13 to 20, see also page 3, lines 15 to 23, and page 14, line 26, to page 15, line 2, and Fig. 3). Hence, according to the description the step of normalizing data is consistently applied to spectral signal blocks and not to time signal blocks as argued by the appellant. It follows that, if the claim were interpreted in the light of the description, the term "time frequency two-dimensional block" would relate to a spectral signal block rather than to a time

signal block as argued by the appellant. This interpretation would however give rise to an inconsistency in the claim, since according to claim 1 the step of normalizing data precedes the step of orthogonally transforming, i.e. before the spectral signal blocks are obtained.

The board therefore concludes that the use of the term "time frequency two-dimensional block" renders claim 1 unclear.

- 1.2 Claim 1 is furthermore not clear in that in the characterising portion it is unclear which parameter is referred to by "the feature" in "a quantization coefficient which is determined and which is representing the feature of the signal component in the time frequency two-dimensional block", thereby also rendering the term "quantization coefficient" unclear. In this respect, the board notes that neither of these terms is used in the description of the preferred embodiments.
- 1.3 In view of the above, the board concludes that claim 1 lacks clarity and, hence, does not comply with the requirements of Article 84 EPC.
- 1.4 The sole request is therefore not allowable.
2. In view of the above, it has not proved necessary to consider whether or not other objections as set out in the communication accompanying the summons to oral proceedings apply, *mutatis mutandis*, to claim 1 of the present request.
3. There being no allowable request, it follows that the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

G. Rauh

A. S. Clelland