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Datasheet for the decision of 31 January 2007

Case Number: T 0642/04 - 3.5.04

Application Number: 99930276.3

Publication Number: 1095376

IPC: G11B 20/00

Language of the proceedings: EN

Title of invention:
Apparatus and method for embedding and extracting information in analog signals using replica modulation

Applicant:
Verance Corporation

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 111(1)

Keyword:
"Novelty (yes)"
"Decision re appeals - remittal (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 0642/04 - 3.5.04

D E C I S I O N
of the Technical Board of Appeal 3.5.04
of 31 January 2007

Appellant: Verance Corporation
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 15 December 2003 refusing European application No. 99930276.3 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: F. Edlinger
Members: C. Kunzelmann
B. Müller

Summary of Facts and Submissions

I. The appeal is against the decision of the examining division refusing European patent application No. 99 930 276.3.

II. The appellant enclosed three sets of claims with the statement of grounds of appeal and requested that the patent application be allowed. A copy of the claims on which the decision under appeal was based was enclosed for the avoidance of doubt and constituted the basis of the main request. The remaining sets of claims formed the claims of the first and second auxiliary requests.

III. Independent claim 1 of the main request reads as follows:

"A method of embedding an auxiliary signal in an analog cover signal, comprising the steps of:
selecting at least a portion of said cover signal in a predetermined domain according to a stego key;
generating a replica signal from said selected cover signal portion by modifying said selected portion of said cover signal according to the stego key;
modifying said replica signal as a function of said auxiliary signal; and
inserting the modified replica signal into said analog cover signal."

IV. Independent claim 10 of the main request is directed to a method of extracting an embedded auxiliary signal from an analog stego signal, and independent claim 19 is directed to an apparatus for embedding and extracting auxiliary signals in an analog cover signal.

Claims 2 to 9 are dependent on claim 1, claims 11 to 18 are dependent on claim 10, and claims 20 to 27 are dependent on claim 19.

V. The reasons for refusing the application were based on the prior art document

D2: WO 98/53565 A1

and can be summarized as follows. D2 disclosed the features of present claim 1 in its description of figures 10 and 11. Although the term "replica signal" was not used in D2, the signal generated by the feature extraction block 32 shown in figure 11 corresponded to the replica signal specified in present claim 1 because the replica signal was merely defined as being generated "by modifying said selected portion of said cover signal according to a stego key". This also applied to the filtered/masked signal 31 processed according to the stego key 9 in D2.

Since D2 was assigned to the same applicant or his predecessor in title as the applicant of the present application and the priority application of the present application was not the first application filed in respect of the invention, the priority of claim 1 was not valid (Article 87 EPC), so that the effective date of claim 1 was after the publication date of D2.

Thus the subject-matter of claim 1 was not new in the sense of Article 54(1) and (2) EPC.

VI. The decision under appeal neither discussed other claims of the application nor other requirements of the EPC.

VII. The appellant's arguments may be summarized as follows. A "replica" was a duplicate, facsimile or a repeat of the original that was being replicated, and thus a replica signal in accordance with the present invention had to be similar to the cover signal in time and frequency domain content (for example page 7, lines 10 to 14 and page 8, lines 24 to 27 of the present application). A simple scalar value as provided by the feature extraction block (32) in D2 could not be equated with a "replica signal" of the cover signal as specified in present claim 1. D2 used the calculation result from the modulation parameter calculation module (34) to modify the filtered/masked signal to generate the embedded signal component which was added to the cover signal. Furthermore D2 used the auxiliary signal to determine a quantisation value that was compared with the calculated distributed signal feature value output by the feature extraction block, such that the extracted scalar value was then modified to arrive at the desired quantisation value. As discussed in the present application (page 8, line 22 to page 9, line 8), the invention avoided this analysis by instead creating a replica signal from the filtered/masked cover signal and then modifying that replica signal as a function of the auxiliary signal to create the embedded signal component for inserting back into the cover signal. Therefore the subject-matter of claim 1 was novel over D2; the present application did not relate to the same invention and was entitled to the claimed priority.

VIII. In response to a telephone conversation with the rapporteur, the appellant changed the main request in a letter dated 26 September 2006.

The appellant's new main request is that the decision under appeal be set aside and that the application be remitted to the first instance for a continuation of the proceedings. Oral proceedings are requested in the event that the board does not accede to this main request.

Reasons for the Decision

1. The appeal is admissible.

2. *Novelty (Article 54 EPC)*

2.1 The meaning of the expression "replica signal" in the context of claim 1 is decisive for the assessment of novelty.

2.2 The decision under appeal stated that the "replica signal" in claim 1 was merely defined as being generated by modifying said selected portion of said cover signal according to a stego key. The decision under appeal thus took the view that the expression "replica signal" itself did not add anything over the feature specifying the generation of the replica signal in claim 1.

2.3 The board does not agree with the decision under appeal in this respect. Instead, the board concurs with the appellant's argument that a "replica" is a duplicate,

facsimile or a repeat of the original that is being replicated. In the board's view, this is the normal meaning of the expression "replica" and is also consistent with the explanations given in the description as to the features of the "replica signal" (see page 7, lines 10 to 14, page 8, lines 18 to 27 and page 10, lines 7 to 17). In the context of claim 1, the replica signal has to be a replica of the selected cover signal portion in addition to it being specified as being generated "from said selected cover signal portion by modifying said selected portion of said cover signal according to the stego key".

2.4 In D2 the signal generated by the feature extraction block 32 shown in figure 11 extracts a "distributed feature" of the filtered/masked cover signal 31 (page 21, lines 31 to 35). Each distributed feature F_i is a scalar value (page 5, lines 14 to 20; page 24, lines 1 to 16 and page 26, lines 17 to 21) which is obtained by processing an analogue cover signal over a number of successive time intervals. Hence the signal generated by the feature extraction block 32 is not a replica signal in the meaning of present claim 1. Nor does the board see any other signal mentioned in D2 which is a replica signal of a selected portion of the cover signal.

2.5 In view of the above, the board is satisfied that D2 does not disclose the method of claim 1. Thus the method of claim 1 is new with respect to D2 (Article 54 EPC).

3. Consequently D2 is not an application in respect of the same invention as that of present claim 1. Therefore the applicant's entitlement to priority cannot be denied for the reason given in the decision under appeal that the priority application of the present application was not the first application in the sense of Article 87(1) EPC because this invention had already been disclosed in D2. Whether priority is valid or not for other reasons is not the subject of this appeal.

4. In these circumstances it is neither necessary in the appeal proceedings to deal with the first and second auxiliary requests nor to hold oral proceedings.

Order

For these reasons it is decided that:

1. The contested decision is set aside.

2. The case is remitted to the first instance for further prosecution.

The Registrar: The Chairman:

D. Sauter F. Edlinger