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**Datasheet for the decision
of 16 May 2007**

Case Number: T 1163/04 - 3.5.04

Application Number: 97400765.0

Publication Number: 0801503

IPC: H04N 5/21

Language of the proceedings: EN

Title of invention:

Multiple mode trellis decoder for a digital signal processing system

Applicant:

THOMSON multimedia

Opponent:

-

Headword:

-

Relevant legal provisions:

EPC Art. 111(1), 54

Keyword:

"Decision re appeals - remittal (yes)"

"Novelty - (yes) after amendment"

Decisions cited:

G 0010/93

Catchword:

-



Case Number: T 1163/04 - 3.5.04

D E C I S I O N
of the Technical Board of Appeal 3.5.04
of 16 May 2007

Appellant: THOMSON multimedia
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Representative: Ruellan-Lemonnier, Brigitte
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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 4 May 2004
refusing European application No. 97400765.0
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 to refuse European patent application No. 97 400 765.0.
- II. The reasons for the decision under appeal referred to document

D1: HAGENAUER, J. et al. "The Performance of Rate-Compatible Punctured Convolutional Codes for Future Digital Mobile Radio". In: 38th IEEE Vehicular Technology Conference, 15 to 17 June 1988, Philadelphia (US),

and can be summarized as follows.

D1 was not closely related to the invention disclosed in the description, but this was not relevant when examining novelty. The receiver of figure 2 of D1 had all the features of claims 1 and 12. In particular, D1 disclosed a pre-processing network (figure 2, block "detector soft/hard") for subjecting an input signal to one of a plurality of pre-processing modes (namely the soft or hard detection modes) to provide a processed signal exhibiting one of a plurality of signal formats (namely a one-bit binary hard decision format or a multi-level soft decision format), said formats being associated with said modes (soft/hard). D1 also disclosed a trellis decoder (figure 2, block "RCPC Viterbi decoder") for decoding the preprocessed signal. The trellis decoder employed a state transition trellis with the same number of trellis states for decoding the signals exhibiting the plurality of signal formats

because hard or soft input formats did not have any influence on the number of states in a Viterbi decoder. The receiver of D1, although directed to applications for digital mobile radio, was suitable for processing trellis encoded video input signals.

III. The decision under appeal also comprises three "remarks" as follows:

- (i) claims 1 and 12 were not clear because of the formulations "In a system . . . , an apparatus" and "In a system . . . , a method";
- (ii) the subject-matter of claim 2 was not new, and the subject-matter of claims 4 to 11 did not involve an inventive step;
- (iii) claim 3 did not appear to give rise to objections of lack of novelty or lack of inventive step.

IV. The applicant filed an appeal and requested the revocation of the decision to refuse the application, the grant of a patent and the reimbursement of the appeal fee.

V. The appellant's arguments can be summarized as follows.

The meaning of "one of a plurality of signal formats" could be seen from the claim language as being one format derived from pre-processing in the meaning of the present application, which taught that the pre-processing unit must pre-filter data in response to a signal so that the data was muxed before decoding by the trellis decoder. Unfiltered data had a first number of trellis encoded levels, pre-filtered data had a second number of trellis encoded levels. As the title

of the invention indicated, the invention was a multiple mode trellis decoder, and the invention was directed to processing video input signals. D1 was not directed to multiple mode trellis decoders, and the Viterbi decoder of D1 was directed to applications for digital mobile radio. Thus D1 was not even analogous art to the invention.

VI. The board indicated in a communication that it tended to agree with the examining division that claim 1 was formulated so broadly as to cover the receiver of figure 2 of D1, and that it tended to agree with the examining division's remark concerning the clarity of claims 1 and 12 (see (i) in point III above). The board drew attention to the fact that reasons for the requested reimbursement of the appeal fee were neither submitted by the appellant nor apparent from the file of the first instance proceedings. The board also indicated that it considered remitting the case to the first instance for further prosecution if the claims were amended in accordance with the remark in the decision under appeal concerning claim 3 (see (iii) in point III above).

VII. With a fax of 28 March 2007 the appellant filed a new set of claims 1 to 11. The appellant submitted that the features of claim 3 had been added to claim 1 in line with the board's indication and expressed the hope that the current application would be sent back to the examining division.

VIII. The independent claims filed with the fax of 28 March 2007 read as follows (typing errors not having been corrected):

Claim 1:

"Device comprising

- a pre-processing network (27) for subjecting a trellis encoded video input signal to one of a plurality of pre-processing modes to provide a processed signal exhibiting one of a plurality of signal formats, said formats being associated with said modes Said device being characterized in that it comprises:

- a trellis decoder (24) for decoding said processed signal, wherein said trellis decoder employs a state transition trellis with the same number of trellis states for decoding processed signals of a plurality of signal formats from said pre-processing network, said plurality of signal formats include normal response and partial response signal formats."

Claim 11:

"A method comprising

- a step of pre-processing a trellis encoded video input signal by one of a plurality of pre-processing modes to provide a processed signal exhibiting one of a plurality of signal formats, said formats being associated with said modes, said method being characterized in that it comprises the step of:

- trellis decoding said processed signal in accordance with a state transition trellis with the same number of trellis states for trellis decoding processed signals of a plurality of signal formats.

said plurality of signal formats include normal response and partial response signal formats."

Reasons for the Decision

1. The appeal is admissible.
2. The board construes the appellant's submissions with the fax of 28 March 2007 to mean that the appellant requests that the case be remitted to the first instance for further prosecution (see point VII above).
3. Claims 1 and 11 each comprise the feature that "said plurality of signal formats include normal response and partial response signal formats". This is the feature of claim 3 of the claim set on which the decision under appeal was based. It follows from remark (iii) in the decision under appeal that the examining division did not see objections of lack of novelty or of lack of an inventive step concerning the subject-matter of present claims 1 and 11. Hence the reasons for refusing the application given in the decision under appeal do not apply to the present claims.
4. *Remittal to the first instance (Article 111(1) EPC)*
 - 4.1 The board agrees with remark (iii) made in the decision under appeal and sees no objection as to lack of novelty (Article 54 EPC) or lack of inventive step (Article 56 EPC) of the claimed subject-matter having regard to the prior art documents on file. Nevertheless the board notes that the following deficiencies remain to be considered. The terminology used in the dependent

claims ("A system according to claim 1") is different from that used in claim 1 (which is directed to a "device") and claims 7 to 10 still refer to claim 7 despite the changes made to the claims. Furthermore the description has not been adapted to the claims. Thus the application requires further examination which is the task of the examining division (see G 10/93, OJ EPO 1995, 172, Reasons points 3 to 5).

4.2 It follows from the above that the amended claims have not only overcome the objection of lack of novelty on which the decision under appeal was based. The subject-matter of the claims has also significantly changed in view of the prior art disclosed in D1 which was considered by the examining division as not to be closely related to the invention (see point II above). Furthermore the appellant requested that the case be remitted to the first instance for further prosecution (see point 2 above). Under these circumstances the board has decided to exercise its discretion pursuant to Article 111(1) EPC by remitting the case to the first instance for further prosecution.

5. *Reimbursement of the appeal fee (Rule 67 EPC)*

The appellant has not submitted any reason why the appeal fee should be reimbursed. Nor does the board see why such reimbursement would be equitable by reason of a substantial procedural violation.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the first instance for further prosecution.
3. The request for reimbursement of the appeal fee is refused.

The Registrar:

The Chairman:

D. Sauter

F. Edlinger