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D E C I S I O N
of 27 February 2004

Case Number: T 1012/00 - 3.5.1

Application Number: 93111922.6

Publication Number: 0581227

IPC: H04N 5/92

Language of the proceedings: EN

Title of invention:
Apparatus for the recording and/or the reproducing of video signals

Applicant:
Hitachi, Ltd.

Opponent:
-

Headword:
Recording of video signals/HITACHI

Relevant legal provisions:
EPC Art. 52(1), 56

Keyword:
"Inventive step (yes)"

Decisions cited:
-

Catchword:
-

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Case Number: T 1012/00 - 3.5.1

D E C I S I O N
of the Technical Board of Appeal 3.5.1
of 27 February 2004

Appellant: Hitachi, Ltd.
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 28 March 2000 refusing European application No. 93111922.6 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: S. V. Steinbrener
Members: R. Randes
B. J. Schachenmann

Summary of Facts and Submissions

I. This is an appeal against the decision by the Examining Division to refuse the present European patent application because the subject-matter of the independent claims, as well as that of the dependent claims, of the single request lacked an inventive step in view of the following documents:

D1: EP-A-0 328 141

D2: EP-A-0 422 849

D3: EP-A-0 256 753

D4: WO-A-92/00649

The Examining Division held that the subject-matter of the independent claims 1, 6 and 20 did not involve an inventive step in view of the teaching of document D1 in combination with that of document D4.

II. According to the opinion of the Examining Division, document D1 (Figure 3 and the corresponding text) concerned an **audio signal reproducing/recording apparatus** (see decision, page 4) having the following features corresponding to those of the video signal reproducing apparatus according to claim 1 of the patent application:

– reproducing means (28)

– control code reconstruction means (21) for detecting a digital control code in the reproduced

signal, the control code allowing or inhibiting copying of the signal;

– control code reconstructing means (23, 27) forming a reconstructed digital control code on the basis of the re-produced control code;

– means for adding (25) the control code to the reproduced digital audio signal and

– a D/A converter for converting the reproduced digital audio signal into an analogue audio signal.

D1 (Figure 3), according to the Examining Division, also disclosed an **audio signal recording apparatus** (see decision, page 6) having the following features corresponding to those of the video recording apparatus of independent claim 6 of the patent application:

– first input means (1) for receiving an analogue audio signal;

– an A/D converter for converting the analogue audio input signal into a digital audio signal;

– second input means (3) for receiving a digital input audio signal;

– control code detection means (10, 27) for detecting a digital control code in the digital input signal, the control code allowing or inhibiting copying of the signal;

– control code reconstructing means (13, 27) forming a reconstructed digital control code on the basis of the re-produced control code;

– means for adding (6) the control code to the digital audio signal and

– means for recording (8) the signal output by the adder.

Since illegal copies were made of both video and audio cassettes, the skilled man would, according to the Examining Division, also look for solutions in the audio field when trying to solve a problem in the video field. It was true that D1 did not disclose adding control signals to analog signals. However, having regard to the teaching of D4 which disclosed adding pseudo synch pulses to the vertical blanking period of analogue video signals for inhibiting copying, the skilled man would - if copying were to be controlled all together (i.e. for digital as well as analogue data carriers) - try to also insert a control signal into the analogue video signal and so arrive at the apparatuses defined in independent claims 1 and 6 (and also in independent claim 20, identifying an "audio signal processing apparatus").

III. In response to the statement of the grounds of appeal, in which the Appellant defended the independent claims of a main request as well as those of an auxiliary request, the Board expressed some sympathy in respect of the substantive argumentation of the Appellant, but was of the opinion that the claims were not clear.

After the Appellant's filing of new claims the Board, in an annex to the summons to attend oral proceedings, again pointed out that the claims were not clear.

IV. In the oral proceedings, held before the Board on 27 February 2004, the Appellant requested

– that the decision under appeal be set aside and

– that the patent be granted on the basis of the following claims and amended description pages:

– Claims 1 to 13, as filed at the oral proceedings;

– Pages 2, 2a, 3, 16 and 17, as filed at the oral proceedings.

Claim 1 reads as follows:

"A video signal reproducing apparatus with a control signal generator arrangement, said apparatus comprising:

a reproducing means (1) for reproducing a digital video signal recorded on a recording medium (14), and outputting a digital video signal (11) and an analog video signal (13) into which said reproduced digital video signal is converted by a D/A converter (8);

a control signal detection means (26) for detecting a digital control signal contained in said reproduced digital video signal, said digital

control signal commanding a recording condition with respect to said digital video signal;

a reproduction control circuit (43) for supplying the information content of said detected digital control signal to a first control signal generation means (91) to generate a first digital control signal (21, 22) to be added to said output analog video signal and to a second control signal generation means (53, 54) to generate a second digital control signal (16) to be added to said output digital video signal, said first and second digital control signals commanding a subsequent recording condition of said outputted video signals, said recording condition being dictated by the information content of said first and second digital control signals;

a first adding means (92) for adding said first digital control signal (21, 22) to a portion of a vertical blanking period of said output analog video signal to produce an output analog video signal (13) with said first digital control signal, and

a second adding means (55) for adding said second digital control signal (16) to said output digital video signal to produce an output digital video signal (11) with said second digital control signal."

Independent claim 6 reads as follows:

"A video signal recording apparatus with a control signal generator arrangement, comprising:

a first input means (12) for receiving an input analog video signal;

a second input means (10) for receiving an input digital video signal;

a first control signal detection means (7) for detecting a first digital control signal (21, 22) contained in a vertical blanking period of said input analog video signal, and

a second control signal detection means (51, 52) for detecting a second digital control signal (16) contained in said input digital video signal, said first and second digital control signals commanding a recording condition with respect to said inputted video signals;

a control signal reconstructing means (42) for forming a reconstructed digital control signal from said first and second digital control signals, said reconstructed digital control signal to be added to one of a digital video signal converted by an A/D converter (6) from said input analog video signal and said input digital video signal to command a subsequent recording condition of said inputted video signals, said recording condition being dictated by the information

content of said reconstructed digital control signal;

an adding means (25) for adding, if recording is not inhibited, said reconstructed digital control signal to one of said digital video signal converted from said input analog video signal and said input digital video signal to produce a recording signal with said reconstructed digital control signal; and

a recording means (1) for recording said recording signal on a recording medium (14)."

V. In his written argumentation, as well as in the oral proceedings before the Board, the Appellant criticised the decision of the Examining Division and expressed the opinion that the prior art documents cited in the decision were, in fact, not so relevant, since D1 related to the reproduction and recording of digital audio signals and D4 merely disclosed that analogue video signals could be provided with false synch pulses in the blanking period, so that recording was inhibited. A transfer of control information with an analogue signal to another signal in the sense of the invention was not disclosed anywhere. Moreover, a document disclosing an apparatus for the recording/reproducing of digital video signals had not been cited at any time during the whole examining proceedings.

VI. At the end of the oral proceedings the Board announced its decision.

Reasons for the Decision

1. The appeal complies with the provisions mentioned in Rule 65(1) EPC and is therefore admissible.

2. The independent claims filed at the oral proceedings, as well as the dependent claims 2 to 5 and 7 to 13, meet the requirements of Articles 123(2) and 84 EPC. Also the description is properly adapted to the new set of claims.

3. Since the subject-matter of independent claims 1 and 6 is clearly novel (cf. point II above), the issue remaining to be decided is whether it involves an inventive step.

Document D1 has in the appealed decision been considered to represent the closest prior art. The Board agrees that, at least at first sight, D1 appears to disclose apparatuses which are very similar to those defined by claims 1 and 6 and shown in Figures 1 and 6 of the present patent application. It has however to be noted that Figure 3 in D1 does not show a digital **video** reproducing/recording apparatus, but discloses a corresponding apparatus for digital **audio** signals which, like the apparatus according to the invention, can also convert the reproduced digital signal (28, 17) to an analogue output signal (20) and also record an analogue input signal (1) which is at first converted (2) into a digital signal (8) and then recorded onto a tape (9). The first difference between the invention and the apparatus in Figure 3 of D1 is thus that the **D1 apparatus is dealing with audio signals** and not with video signals, as the present invention.

It is not clear whether the Examining Division has used the problem-solution approach; at least the decision does not explicitly identify a problem to be solved. When comparing the subject-matter of claim 1 with the teaching of D1 (see point II above) the following additional differences can be distinguished:

– since D1 is dealing with digital and analogue **audio signals**, whereas the present invention relates to video signals, it follows that the digital control code (signal) according to D1 is designed to be used for digital audio signals and that the control code detection means (21), as well as the control code reconstruction means (23, 27), also are adapted to be used only in connection with digital **audio signals** and not with video signals, as in the present invention,

– in D1 there is no digital control signal generation means to generate a (first) digital control signal to be added to the output analogue signal, which in D1 is an analogue audio signal converted directly (19) from the reproduced digital audio signal (28),

– it follows that in D1 there is no (first) adding means for adding a (first digital) control signal to the blanking period of an analogue video signal.

The same or corresponding differences can be derived when comparing the subject-matter of claim 6 with the teaching of D1. The recording apparatus of independent claim 6 has similar means to perform the necessary

functions of the invention to the reproducing apparatus of claim 1, i.e. a first control signal detection means (7) for detecting a control signal in a vertical blanking interval, a control signal reconstructing means (42) and an adding means (25) for adding the reconstructed control signal to the digital signal which is converted from the input analogue signal and which is to be recorded. D1 does not disclose such features.

3.1 Starting from D1, it however appears to be difficult to pose an objective problem which would be a realistic task for the skilled person to solve. Taking into account that, according to the case law of the Boards of Appeal, a problem to be solved should not contain elements of the solution itself, it appears that a problem for both of the independent claims could possibly be seen in the transformation of the digital audio reproducing/recording means according to D1 into a corresponding digital video reproducing/recording apparatus which is also able to detect and manipulate control information from analogue signals.

This problem appears however to be artificial, since the suggested starting point of the invention, the teaching of D1, appears to be too far away from the reality of the invention. In fact, **the last part of the posed problem**, that information should be detected from analogue signals and also be manipulated, is not hinted at in D1 at all. This is not surprising, since the analogue audio signals reproduced or recorded in the apparatus of D1 do not contain any control information at all.

3.2 If the skilled person nevertheless had to solve (also the last part of) the problem (without any hint or support from the teaching of D1) he **would first have to have the idea** that a video reproducing/recording apparatus of the claimed type would also manipulate control information from **analogue signals which therefore must be provided with appropriate information.**

It is true that the prior art, for example document D4 (see the paragraph bridging pages 10 and 11), discloses that analogue video signals can be provided with false (pseudo) sync pulses in the vertical blanking period in order to prevent the recording. It appears to the Board that the skilled person having decided to design a digital video reproducing apparatus able to also manipulate control information from analogue signals would indeed turn to the teaching of D4. Such prior art analogue video signals (for example on cassette tapes), as shown in D4, however comprise pulses **preventing** recording and cannot be considered to be control signals in the sense of the invention. Neither do the other available documents (those cited in the appealed decision and in the search report) disclose that control signals for reproducing or recording purposes other than for inhibiting recording may be added to analogue video signals. For example, D3 also discloses (see claim 1) that if pseudo synch pulses (in a blanking period of an analogue video signal) are detected a recording device is merely disabled.

To arrive at the invention, it is in reality necessary for the skilled person **not only to design a new apparatus** for reproducing/recording digital video signals, **but also to introduce a new control**

information system, contained within the **analogue video system**, which **is compatible** with an information system contained in a **digital video system**.

3.3 Having regard to the fact that it is known from the prior art (for example D4) to add pseudo synch pulses to the vertical blanking interval of an analogue video signal, it appears to the Board that the skilled person could possibly arrive at a digital video signal recording apparatus (corresponding to claim 6) which, after detection of the pseudo synch pulses in the input analogue video signal, would prevent recording of the analogue signal. However the Board finds that the skilled person would not arrive at the claimed invention, i.e. including the transfer of control signals between analogue and digital video signals. Neither would he therefore in an obvious way arrive at the reproducing apparatus according to claim 1, i.e. he would not transfer control information from the digital (video) input signal to an output analogue signal.

Indeed, there is no prior art mentioned in the decision or cited in the search report disclosing that control codes can be transferred from an analogue signal to a digital signal and vice versa. This transfer of control codes however makes it possible to control the copying conditions (for example, the number of copies allowed) between analogue media and digital media when recording and reproducing. Thus an exchangeability between analogue and digital recording/reproducing as regards control codes has been created.

The Board is therefore of the opinion that the skilled person having regard to the teachings of D1 and D4

would not arrive at a reproducing or recording apparatus according to claims 1 or 6, respectively, in an obvious way.

3.4 The Board notes that it is stated in the Examining Division's decision (page 5, third paragraph) that "in view of the fact that illegal copies are made both of video cassettes and audio cassettes, the skilled person would automatically look for possible solutions to said problem in either the field of video recording or the field of audio recording". It is moreover stated that, as the formats of video and audio signals are similar, the skilled person would "**inevitably try to use the apparatus known from document D1 for the processing of video signal**s".

Having regard to these statements in the decision, it could be understood that the Examining Division's starting point for the invention was in reality a "conventional" digital video reproducing/recording apparatus as might be derived from the description of the present patent application.

The Board however notes that the documents mentioned in the decision do not disclose such a digital video reproduction/recording apparatus. Neither do the other documents cited in the search report disclose such an apparatus. However, even if starting from a digital video reproducing/recording apparatus neither including the means for detecting control signals in the analogue signal, nor the means for reconstructing, nor the means for generation of the new control signals, nor the means for adding the new control signals according to claims 1 or 6, it appears to the Board that the skilled

person, having regard to the combined teaching of documents D1 and D4, would not arrive at the invention. Also in this case, it is the opinion of the Board that the skilled person would possibly arrive at a digital video recording apparatus able to prevent recording of an analogue signal which is provided with false synch pulses. The skilled person would not however during the course of his normal work arrive at the claimed solution involving in effect a new control system, which can transfer control signals or commands indicating recording conditions between digital and analogue signals.

3.5 Therefore the subject-matter of the independent claims 1 and 6 is considered involving an inventive step and the claims thus meet the requirements of Articles 52(1) and 56 EPC. Dependent claims 2 to 5 and 7 to 13 also meet the requirements of the EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent with the following documents:

– claims 1 to 13, as filed at the oral proceedings;

– description pages 1 and 4 to 15, as originally filed;

– description pages 2, 2a, 3, 16 and 17, as filed at the oral proceedings;

– Figures 1 to 6, as originally filed.

The Registrar: The Chairman:

M. Kiehl S. V. Steinbrener