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Datasheet for the decision of 30 March 2017

Case Number: T 2022/11 - 3.5.04

Application Number: 96904562.4

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Language of the proceedings: EN

Title of invention:
MULTI-FORMAT AUDIO/VIDEO PRODUCTION SYSTEM WITH FRAME-RATE CONVERSION

Applicant:
WASHINO, Kinya

Headword:

Relevant legal provisions:
EPC 1973 Art. 56

Keyword:
Inventive step - (no)

Decisions cited:

Catchword:

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Case Number: T 2022/11 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 30 March 2017

Appellant: (Applicant)	WASHINO, Kinya 80 Hamilton Avenue Dumont, NJ 07624 (US)
Representative:	Naismith, Robert Stewart Marks & Clerk LLP Atholl Exchange 6 Canning Street Edinburgh EH3 8EG (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 7 April 2011 refusing European patent application No. 96904562.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	C. Kunzelmann
Members:	M. Paci
	G. Decker

Summary of Facts and Submissions

I. The appeal is against the decision of the examining division refusing European patent application No. 96904562.4 published as international patent application WO 97/27704 A1.

II. In the decision under appeal *inter alia* the following document was cited:

D2: D.J. Bancroft, "Pixels and Halide - A Natural Partnership?", SMPTE Journal, vol. 103, no. 5, May 1994, pages 306-311, ISSN: 0036-1682, XP000451018

III. The decision under appeal was a decision according to the state of the file, as requested by the applicant, referring for its reasons to two earlier communications from the examining division dated 25 August 2004 and 13 December 2010. In these communications the examining division had cited *inter alia* prior-art document D2 and had raised objections based on Articles 56, 84 and 123(2) EPC.

IV. With the statement of grounds of appeal the appellant (applicant) filed amended claims according to a main and first to third auxiliary requests, replacing all claims previously on file.

V. In a communication under Article 15(1) RPBA (Rules of Procedure of the Boards of Appeal, OJ EPO 2007, 536), annexed to the summons to oral proceedings, the board informed the appellant of its provisional opinion that claim 1 according to each of the four requests on file did not meet the requirements of Article 84 EPC 1973 and that their subject-matter did not involve an

inventive step (Article 56 EPC 1973) in view of prior-art document D2.

VI. The appellant did not reply to the board's communication. However, on 27 March 2017, it informed the Registry of the board by telephone that it would not be attending the oral proceedings.

VII. The board held oral proceedings on 30 March 2017. As announced, the duly summoned appellant did not attend.

During the oral proceedings, the Chairman noted that the appellant had requested that the decision under appeal be set aside and that a patent be granted on the basis of the claims of the main request or, in the alternative, the claims of the first to third auxiliary requests, all requests filed with the statement of grounds of appeal.

At the end of the oral proceedings, the Chairman announced the board's decision.

VIII. Claim 1 according to the appellant's **main and first auxiliary requests** reads as follows:

"A multi-format audio/video production system (162) adapted for use with a display device (164, 166, 170, 172), having means to receive an input video program in one of a plurality of input formats and high-capacity video storage means (100, 102, 104), the system (162) being characterized by graphics processing means (116) operative to:

(a) convert the input program into a 24 frames-per-second fps production format, if not already in such a format, for storage within the high-capacity video

storage means (100, 102, 104) and for review on the display device (164, 166, 170, 172), and

(b) convert the production format into one or more of the following output formats, either directly from the input or from the storage means (100, 102, 104):

NTSC at 30 fps,
PAL/SECAM at 25 fps,
HDTV at 25 fps,
HDTV at 30 fps, and
film-compatible video at 24 fps."

IX. Claim 1 according to the appellant's **second auxiliary request** reads as follows (additions to claim 1 of the main request are underlined, there are no deletions):

"A multi-format audio/video production system (162) adapted for use with a display device (164, 166, 170, 172), having means to receive an input video program in one of a plurality of input formats and high-capacity random access video storage means (100, 102, 104), the system (162) being characterized by graphics processing means (116) operative to:

(a) convert the input program into a 24 frames-per-second fps digital production format, if not already in such a format, for storage within the high-capacity random access video storage means (100, 102, 104) and for review on the display device (164, 166, 170, 172), and

(b) convert the production format into one or more of the following output formats, either directly from the input or from the storage means (100, 102, 104):

NTSC at 30 fps,
PAL/SECAM at 25 fps,
HDTV at 25 fps,
HDTV at 30 fps, and
film-compatible video at 24 fps."

X. Claim 1 according to the appellant's **third auxiliary request** reads as follows (additions to claim 1 of the main request are underlined, deletions are ~~struck-through~~):

"A multi-format audio/video production system (162) adapted for use with a display device (164, 166, 170, 172), having means to receive an input video program in one of a plurality of input formats and high-capacity video storage means (100, 102, 104), the system (162) being characterized by graphics processing means (116) operative to:

~~(a)~~ convert the input program into a 24 frames-per-second fps production format, if not already in such a format, for storage within the high-capacity video storage means (100, 102, 104) and for review on the display device (164, 166, 170, 172);~~, and~~

use pixel interpolation to produce an edited version of the program in a final format having pixel dimensions different from than that of the production format, and

~~(b)~~ convert the production format into one or more of the following output formats, either directly from the input or from the storage means (100, 102, 104):

NTSC at 30 fps,

PAL/SECAM at 25 fps,

HDTV at 25 fps,

HDTV at 30 fps, and

film-compatible video at 24 fps."

XI. The examining division's reasons for the decision under appeal relating to inventive step in view of prior-art document D2 which are relevant to the present decision may be summarised as follows:

The system of claim 1 [Note by the board: identical to the system of claim 1 according to the present main and first auxiliary requests] was essentially an audio/ video multi-standard receiver/converter which foresaw the conversion of the input programs into a 24-fps production format for storage purposes. It was well known, for example from D2 (see Abstract), that storing the input program in a universal or common format offered evident advantages, such as postponing the conversion to the output formats until the last moment and avoiding the unnecessary repetition of editing and correcting processes for different output formats. Hence, it would have been straightforward for the skilled person to store the input program in a universal or common format. As to the choice of 24 fps for the universal or common format, it would have been a matter of normal design procedure because the 24-fps frame rate had some known advantages: see 24-fps "generic electronic format proposed by the Technology Council" in D2.
[See point 3.1 of the examining division's communication of 13 December 2010 referred to in the decision under appeal.]

For the above reasons, the subject-matter of claim 1 did not involve an inventive step (Article 56 EPC).

XII. The appellant's arguments as to inventive step in view of prior-art document D2 in the statement of grounds of appeal may be summarised as follows:

Claim 1 according to the main and first auxiliary requests

D2 concerned a proposal from the Technology Council for a single, universal format for mastering movie

programs. In D2, the challenges associated with this proposal were identified (see figure 13) and a manufacturer was solicited to take them on. However, there was no disclosure of how to overcome these challenges. In particular, D2 acknowledged that there was, in May 1994, no effective way of implementing 24-fps video recording because known video recorders did not operate at this frame rate. All known multi-standard audio/video receivers/converters were only capable of conversions between existing broadcast standards, none of which operated at the 24 fps rate.

Only by departing from conventional thinking was it possible to solve these problems. The solution proposed by the inventors was to treat the 24-fps signal as a data stream which could be stored on a conventional high-capacity data storage means acting as a huge buffer for performing frame-rate conversions directly from the input to the output. Before the filing date of the application, storage of video programs had been reliant on helical-scan technology and hardware, which were not flexible enough to allow recording of a program at one frame rate, and playback of that program at a different frame rate.

Moreover, D2 acknowledged that two different frame sizes (2535x1080 and 1920x1440) were necessary for the electronic representation of the film. This meant that there was no true universal format disclosed in D2.

The skilled person starting from D2 would thus not have arrived at the subject-matter of claim 1.

Claim 1 according to the second auxiliary request

Claim 1 according to the second auxiliary request additionally specified that the high-capacity storage means was capable of random access and that the 24-fps production format was digital.

Claim 1 according to the third auxiliary request

Claim 1 according to the third auxiliary request additionally specified pixel interpolation to produce an edited version of the program in a final format having pixel dimensions different from that of the production format.

Reasons for the Decision

1. The appeal is admissible.

Non-attendance of the appellant at the oral proceedings

2. The duly summoned appellant did not attend the oral proceedings. According to Rule 71(2) EPC 1973, the proceedings could however continue without him. In accordance with Article 15(3) RPBA the board relied for its decision only on the appellant's written submissions. The board was in a position to decide at the conclusion of the oral proceedings, since the case was ready for decision (Article 15(5) and (6) RPBA), and the voluntary absence of the appellant was not a reason for delaying the decision (Article 15(3) RPBA).

Main request - inventive step (Article 56 EPC 1973)

3. The board regards document D2 as the closest prior art for the present claims.

D2 discloses a multi-format audio/video production system/method (illustrated in figure 3) adapted for use with a display device (implicit in D2) having means to receive an input video program in one of a plurality of input formats (see film formats in figure 2) and high-capacity video storage means (see "cassette" in figure 3). The system of D2 shown in figure 3 comprises graphics processing means operative to:

(a) convert the input program into a 24 frames-per-second production format (see "generic electronic format" at 24 fps in figure 3), if not already in such a format, for storage within the high-capacity video storage means (see "cassette" in figure 3), and

(b) convert the production format into one or more of the following output formats from the storage means:

NTSC at 30 fps (see "525/59.94" on right of figure 3),

PAL/SECAM at 25 fps (see "625/50" on right of figure 3),

HDTV at 25 fps (see "1250/50 HDTV" on right of figure 3),

HDTV at 30 fps (see "1125/60 HDTV" on right of figure 3), and

film-compatible video at 24 fps (see "electronic cinema" at the top of the middle column on page 311).

The system of claim 1 of the main request thus differs from the system of D2 at most by the following features which may be regarded as not explicitly disclosed in D2:

(f1) the production format is "for review on the display device";
(f2) it is operative to convert the production format "directly from the input".

Re feature (f1), the board considers that it would have been obvious to the skilled person, if not implicit, that the "generic electronic format" of D2 (see figure 3) would be displayed for review on a display device so that an operator/user could check that the electronic format had been properly generated and for allowing manual operations such as cropping or "pan and scan" mentioned on page 307, middle column, of D2.

Since feature (f2) is only one of two alternative options ("or") and the other alternative option (conversion of the production format into the output format from the storage means) is known from D2, this feature cannot contribute to the presence of an inventive step.

The system of claim 1 of the main request thus does not involve an inventive step in view of D2.

4. The appellant's arguments as to inventive step in view of D2 in the statement of grounds of appeal are summarised under point XII *supra*.

5. The board finds these arguments unpersuasive for the following reasons:

First, the board cannot agree with the appellant's view that D2 only identifies problems but does not propose solutions. As explained in D2, the Technology Council of the Motion Picture and Television Industry had recently proposed a change in the way motion-picture

productions were transferred from film to tape for video distribution, and the purpose of D2 was to give the viewpoint of a manufacturer on the technical implications of the proposal and how the challenges to its implementation could be overcome (see Abstract and first whole paragraph on page 307, left column).

As explained on page 307 of D2, the basic concept of the Technology Council's proposal was the conversion of a 24-fps film into an "electronic representation" coming out of the telecine of the film, i.e. a digital representation of the film which preserved the film's temporal characteristics (i.e. the same frame rate of 24 fps), the spatial characteristics (i.e. the highest resolution needed for distribution) and the optical format. The electronic representation then underwent the usual processing (colour correction, etc.) and was stored on a video storage medium. Thereafter, an output format converter converted the stored "electronic representation" (which is a "24-frame video" in figure 3) into the desired output format by changing the frame rate, pixel resolution and optical format in accordance with the output video standard.

D2 does not mention any technical difficulty associated with the storage of the electronic representation at a frame rate of 24 fps (see, for instance, figures 10 and 13 and the "Being Truly Technology Council Compliant" section on page 311). Even if the appellant's assertion that there were no commercially available VTRs operating at 24 fps is correct, it still does not mean that the skilled person would not have been able to produce them. Contrary to the appellant's arguments, it was also well-known to play a tape back at a speed different from the recording speed in order to change

the video frame rate: see, for instance, figures 8 to 10 of D2 and the corresponding description.

The main technical challenge identified in D2 thus does not relate to the frame rate of 24 fps, but to the high data rate required for accommodating high-resolution images at 24 fps (see "What It Means to Manufacturers" section on pages 308 and 309). However, D2 also suggests that this difficulty can be overcome by using known data compression techniques (see "Options" section on page 309).

Thus, in summary, the board considers that D2 makes it clear that there was a strong incentive to store the "electronic representation" (corresponding to the "production format" in claim 1 of the present main request) of a film at 24 fps because of the Technology Council's proposal, and outlined how the technical obstacles to its implementation could be overcome.

As to the fact that two different formats (2535x1080 and 1920x1440) may be used in D2 for the "electronic representation" of the film depending on the type of lens used, the board sees no difference from the invention as claimed (claim 1 does not exclude different production formats used for different types of films) and from the invention as described (figures 1a to 1d show four different production formats).

Conclusion on the main request

6. Since the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973), the appellant's main request is not allowable.

First auxiliary request - inventive step (Article 56 EPC 1973)

7. Since claim 1 according to the first auxiliary request is identical to claim 1 according to the main request, the same reasons leading to a conclusion of lack of inventive step apply.

8. Hence the appellant's first auxiliary request is not allowable.

Second auxiliary request - inventive step (Article 56 EPC 1973)

9. Claim 1 of the second auxiliary request differs from claim 1 of the main request in that it additionally specifies that the storage means have random access and that the production format is digital.

10. Since the production format of D2 is also digital and since it would have been obvious to use one or more hard disk drives (HDD) instead of a cassette in D2, the subject-matter of claim 1 according to the second auxiliary request does not involve an inventive step in view of D2.

11. Hence the appellant's second auxiliary request is not allowable.

Third auxiliary request - inventive step (Article 56 EPC 1973)

12. Claim 1 of the third auxiliary request differs from claim 1 of the main auxiliary request in that it adds that pixel interpolation is used for producing an edited version of the program in a final format having pixel dimensions different from those of the production format.

13. The board notes that the output formats in D2 also have a number of pixels different from the number of pixels of the "generic electronic format" (corresponding to the "production format" in claim 1) and that the well-known technique of interpolation is used for converting between these formats: see, for instance, figure 10 of D2.

14. For these reasons, the board considers that the subject-matter of claim 1 according to the third auxiliary request does not involve an inventive step in view of D2.

15. Hence the appellant's third auxiliary request is not allowable.

Conclusion

16. Since none of the appellant's requests is allowable, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

K. Boelicke C. Kunzelmann

Decision electronically authenticated