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**Datasheet for the decision
of 9 January 2009**

Case Number: T 0233/05 - 3.5.04

Application Number: 96113735.3

Publication Number: 0762756

IPC: H04N 5/775

Language of the proceedings: EN

Title of invention:

Video signal recording and reproducing apparatus

Patentee:

Panasonic Corporation

Opponent:

Interessengemeinschaft für Rundfunkschutzrechte e.V. (IGR e.V.)

Headword:

-

Relevant legal provisions:

RPBA Art. 13(3)

Relevant legal provisions (EPC 1973):

EPC Art. 56

Keyword:

"Inventive step - no"

Decisions cited:

-

Catchword:

See point 4 of the reasons.



Case Number: T 0233/05 - 3.5.04

D E C I S I O N
of the Technical Board of Appeal 3.5.04
of 9 January 2009

Appellant: Panasonic Corporation
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Decision under appeal: Decision of the Opposition Division of the
European Patent Office posted 17 December 2004
revoking European patent No. 0762756 pursuant
to Article 102(1) EPC.

Composition of the Board:

Chairman: F. Edlinger
Members: A. Teale
C. Vallet

Summary of Facts and Submissions

I. This is an appeal by the proprietor (appellant) against the decision by the opposition division revoking European patent No. 0 762 756.

II. According to the reasons for the decision, the subject-matter of claim 1, in the version filed with the letter dated 18 July 2003 and corrected in the oral proceedings before the opposition division, lacked inventive step, Articles 52(1) and 56 EPC 1973, in view of E1 and common general knowledge, as evidenced by E3, these documents being as follows:

E1: US 5 241 428 A

E3: WO 91/14265 A1.

III. With the statement of grounds of appeal the appellant filed the text of claim 1 according to a main and an auxiliary request. Claim 1 according to the main request is the same as that forming the basis of the appealed decision. The appellant also provided arguments in support of inventive step.

IV. Claim 1 of the main request reads as follows:

"An apparatus for performing concurrent recording and reproduction operations to record a video signal including a plurality of frames onto a hard disk apparatus and to reproduce the video signal recorded onto the hard disk apparatus, comprising:
input means (1, 2, 3) inputting a video signal;

compression means (4) for compressing an amount of information per a unit of M frames of the input video signal so as to output a compressed video signal; time compression means (5, 6) for compressing an amount of time per a unit of N*M frames of the compressed video signal along a time axis so as to obtain a compressed video writing signal; writing means for writing the compressed video writing signal onto a plurality of different portions of the hard disk apparatus via a magnetic head, each of the plurality of different portions having successive L sectors, N*M frames of the compressed video writing signal being written onto the successive L sectors; reading means for reading an arbitrary compressed video writing signal, which was previously written onto the plurality of different portions of the hard disk apparatus, from the hard disk apparatus via the magnetic head to obtain a compressed video reading signal; time decompression means (9, 10) for decompressing an amount of time per a unit of N*M frames of the compressed video reading signal along the time axis so as to obtain a decompressed video signal for reproduction; decoding means (12) for decompressing an amount of information per a unit of M frames of the decompressed video signal for reproduction; and control means for controlling the writing means and the reading means such that a period during which the compressed video writing signal is written onto the hard disk apparatus does not overlap with a period during which the compressed video reading signal is read from the hard disk apparatus, where L, M and N each is an integer greater than or equal to 1,

wherein a period for the compressed video signal which is output from the compression means is set to be longer than a time T, where the time T is defined as a sum of the seek time required for moving the magnetic head to write the compressed video writing signal onto the hard disk apparatus, the time required for writing the compressed video writing signal onto the hard disk apparatus, the seek time required for moving the magnetic head to read the compressed video reading signal from the hard disk apparatus, and the time required for reading the compressed video reading signal from the hard disk apparatus".

The wording of claim 1 of the first auxiliary request is the same as that of the main request, except that the expression "where L, M and N each is an integer greater than or equal to 1" has been amended to read "where L, M and N each is an integer greater than 1".

- V. In submissions dated 21 April 2005 and 27 July 2005 the respondent (opponent) argued *inter alia* that it was well known that hard disks had a certain positioning time while the head moved to the right track and waited for the right sector to be below it and also a certain access time for reading/writing. The sum of these two times was commonly specified. Hard disk access was always intermittent. However video data supplied as a continuous data stream had to be buffered to be compatible with a hard disk. The need to constrain the sum of the write seek, writing, read seek and reading times was obvious in view of the need to simultaneously record and replay video signals in a multiplexed fashion; see E1, column 6, lines 36 to 38. Thus claim 1

merely set out what was always required when setting the buffer size. E1 also mentioned data compression and decompression; see column 6, lines 50 to 58. MPEG was the best known such procedure at the priority date and operated with groups of pictures (GOPs) comprising usually 12 or 15 frames, PAL/SECAM corresponding to 2 GOPs of 12 frames every 0.96 seconds while NTSC corresponded to 2 GOPs of 15 frames per second. It would therefore have been obvious to choose $N=2$, in particular to ease normal replay and trick reproduction; see column 7, lines 56 to 58. Although E1 did not disclose reading an integral number of frames from the hard disk, the same part of E1 mentioned that the buffer should hold a second's worth of video data. Since the usual TV standards at the priority date specified an integral number of frames per second (25 for PAL/SECAM and 30 for NTSC), it would have been obvious to use an integral number of frames per second. A second of video amounted to several megabytes, whilst the storage capacity of a sector was at most 2 kilobytes, hence L had to be greater than one. Moreover accessing part of a sector was technically impossible, so L had to be an integer.

- VI. In a letter dated 7 October 2008 the appellant informed the EPO that it had changed its name and address.

- VII. The board issued a summons to oral proceedings, setting out in an annex its provisional view on the appeal, *inter alia* raising objections under Article 123(2) EPC and Article 84 EPC 1973. The board also drew attention to various parts of E1, including the first sentence of the abstract and figure 3, and stated that the inventive step of the claimed subject-matter in the

light of E1 and E3 would be discussed at the oral proceedings.

- VIII. In a submission dated 9 December 2008 the appellant argued *inter alia* that the subject-matter of claim 1 according to the main and first auxiliary requests involved an inventive step. In particular the appellant stated that the claimed relationship of N, M and L was not known in the prior art. Concerning the amendments made to the patent, the appellant argued they merely changed the designation of claim 1 but did not change any of the claimed features. The board's objections thus effectively related to a new ground of opposition, and the appellant did not agree to the introduction of this new ground.
- IX. In a letter dated 11 December 2008 the respondent stated that he agreed with the board's provisional opinion expressed in the annex to the summons and would not attend the oral proceedings. He also requested that the appeal be dismissed.
- X. Oral proceedings were held on 9 January 2009 in the absence of the respondent. The chairman informed the appellant that the issue of lack of inventive step in view of the reasons given in the decision under appeal would be dealt with first, in so far as there was agreement on a construction of claim 1 of both requests which was justifiable in the light of the description. Any further objections would have to be dealt with before the decision under appeal could be set aside and the patent maintained in amended form.

XI. The appellant requested that the decision under appeal be set aside and that the patent be maintained on the basis of the main request or the auxiliary request filed with the statement of grounds of appeal, or alternatively on the basis of a second auxiliary request submitted during the oral proceedings before the board.

XII. The appellant's arguments may be summarized as follows. E1, in particular column 7, lines 61 to 68, did not disclose how the buffer and hard disk operated together. For example, it did not mention the seek time of the hard disk. Hence the apparatus known from E1 did not satisfy the conditions involving seek times and writing/reading times set out in claim 1 of the main request. Moreover the buffer known from E1 did not necessarily imply time compression of signals; buffers could be operated with equal data input and output rates. The essentially simultaneous recording and playback, referred to in E1 in column 6, lines 36 to 38, did not necessarily involve the hard disk at all. It could be accomplished using a sufficiently sized buffer. Also E1 referred to the hard disk being "as employed in personal computers"; see column 7, lines 61 to 66. This meant that in E1 data was not written to successive sectors of the hard disk, but was instead written to the next available sector, resulting in data being scattered over the hard disk. It was only in the special case of an empty hard disk that data could be written to successive sectors. Although the same passage of E1 mentioned the buffer being used when writing data to the hard disk, there was no mention of using a buffer when reading from the hard disk. The

appellant conceded that the MPEG standard was known at the priority date.

The first auxiliary request limited claim 1 to the case of a plurality of frames being written onto a plurality of contiguous sectors of the hard disk. It was unclear in E1 whether data was written to contiguous sectors of the disk or not.

The second auxiliary request, which concerned amendments intended to overcome the board's objections under Article 123(2) EPC raised in the annex to the summons to oral proceedings, was being filed in the oral proceedings because there had only been three months, including the Christmas holidays, between the summons and the oral proceedings. It was not the appellant's fault that the respondent could not deal with the new request without adjournment of the oral proceedings, since the respondent had been duly summoned and had chosen not to attend the oral proceedings.

XIII. At the end of the oral proceedings the board announced its decision.

Reasons for the Decision

1. *Admissibility*

The appeal is admissible.

2. *Document E1*

E1 concerns a video recorder and playback device allowing a video signal to be simultaneously recorded and, after a variable time delay, played back; see abstract, first sentence. E1 discloses various technical approaches to realizing such a device. The first embodiment is "sequential" in that the video signal is recorded on and played back from a sequential medium, such as video tape. The second embodiment is described as "random access" in that the video signal is digitised and stored in a random access memory (see figure 3), such as a magnetic disk. According to column 6, lines 50 to 58, and figure 3, an analogue video signal is digitized, compressed and stored in a random access memory. Data from the memory is then subsequently decompressed and converted back into analogue signals. Recording and playback may be done essentially simultaneously by multiplexing writing to and reading from the memory; see column 6, lines 36 to 38. This can be achieved by realizing the random access memory as two memory types. A solid state buffer holds one second's worth of data until compression has been performed, the compressed data then being stored on a hard disk "as employed in personal computers"; see column 7, lines 61 to 68.

The board understands the references in E1 to recording and playback occurring essentially simultaneously by multiplexing writing to and reading from the memory (see column 6, lines 36 to 38) as concurrently recording and reproducing a broadcast program on a conventional TV display (abstract; column 6, lines 32 to 36). The signal sampler 51 and analogue to digital

converter 52 shown in figure 3 constitute input means inputting a video signal. Figure 3 also shows compression means (see data compressor 57) for compressing an amount of information of the input video signal so as to output a compressed video signal and corresponding decoding means (see decompressor 59) for decompressing an amount of information of the decompressed video signal for reproduction.

Although E1 only mentions the use of a buffer when writing to the hard disk (see column 7, lines 61 to 68), the board takes the view that it was implicit to the skilled person interpreting figure 3 in the light of the references to multiplexed recording and playback (see column 6, lines 36 to 38, and column 7, lines 66 to 68) that in E1 recording and playback are mirror images of one another, playback merely reversing the steps taken when recording. Hence the skilled person would have understood that E1 implies the use of a playback buffer corresponding to the recording buffer. The skilled person would also have been aware that the recording and playback buffers used to multiplex recording and playback operations must allow data to be written to and read from the hard disk faster than it arrives from the data compressor 57 and is passed to the decompressor 59 shown in figure 3. This must be so because the broadcast analogue video signal is input at a constant frame rate and a conventional hard disk could not be read out during a writing operation. Thus, to avoid the recording buffer overflowing while the disk is being read and to avoid the playback buffer emptying while the disk is being written to, data transfer to and from the disk must be faster than the continuous data transfer from the compressor (for

example an MPEG bit stream) to the recording buffer. Since data is read out of the recording buffer faster than it is read in, the recording buffer constitutes time compression means for compressing an amount of time of the compressed video signal along a time axis so as to obtain a compressed video writing signal. Likewise, since data is read into the playback buffer faster than it is read out, the playback buffer constitutes time decompression means for decompressing an amount of time of the compressed video reading signal along the time axis so as to obtain a decompressed video signal for reproduction. Given that recording to and playback from the hard disk in E1 occurs in a multiplexed manner, it was furthermore implicit to the skilled person that in E1 control means are present for controlling the writing means and the reading means such that a period during which the compressed video writing signal is written onto the hard disk apparatus does not overlap with a period during which the compressed video reading signal is read from the hard disk apparatus.

Since E1 refers to the hard disk being "as employed in a personal computer" (see column 7, lines 61 to 66), it was also implicit for the skilled person that the hard disk in E1 comprises writing means for writing the compressed video writing signal onto a plurality of different portions of the hard disk apparatus via a magnetic head and reading means for reading an arbitrary compressed video writing signal, which was previously written onto the plurality of different portions of the hard disk apparatus, from the hard disk apparatus via the magnetic head to obtain a compressed video reading signal.

The appellant has argued that the term in the claims "successive" limits each of said portions to contiguous sectors of the hard disk. The board does not agree. The term "successive" only occurs in the patent description in paragraph [0027] in the statement that "In this example, since each of a plurality of successive sectors corresponds to one second, sector addresses are indicated every other second in Figure 3". In this context the board understands "successive" sectors to mean sectors following each other in time, rather than necessarily following each other spatially in the sense of contiguity. Hence the board takes the view that E1 discloses writing onto portions of the hard disk having successive sectors as specified in present claim 1.

The board finds that it was common general knowledge and thus implicit for the skilled person that the hard disk has a write seek time for moving the magnetic head to write onto the hard disk apparatus and a corresponding read seek time for moving the magnetic head to read from the hard disk apparatus.

In order that the recording buffer in E1 does not overflow whilst the disk is being read and the playback buffer does not empty while the disk is being written to, the skilled person would have understood that the period for the compressed video signal which is output from the compression means (then buffered and written onto the disk as a plurality of blocks of length equivalent to one second of video frames; see E1, column 7, lines 38 to 50) has to be longer than a time T, where the time T is defined as a sum of the seek time required for moving the magnetic head to write the

compressed video writing signal onto the hard disk apparatus, the time required for writing the compressed video writing signal onto the hard disk apparatus, the seek time required for moving the magnetic head to read the compressed video reading signal from the hard disk apparatus, and the time required for reading the compressed video reading signal from the hard disk apparatus.

3. *Inventive step, Article 56 EPC 1973*

3.1 *The main request*

In the light of the above analysis, the subject-matter of claim 1 differs from the disclosure of E1 in that:

- (a) the compression means compress units of M frames to yield compressed video and, correspondingly, the decoding means decompress signals to yield units of M frames;
- (b) the time compression means compress a unit of $N \cdot M$ frames and, correspondingly, the time decompression means decompress a unit of $N \cdot M$ frames and
- (c) $N \cdot M$ frames are written onto L successive sectors of the disk,
- (d) where L, M and N each is an integer greater than or equal to 1.

It is common ground between the parties, and the board agrees, that at the priority date the MPEG standard was the best known procedure for compressing and decompressing video signals, and therefore the obvious choice for the skilled person implementing the device

known from E1. In doing so the skilled person would have been aware of the frame format of the usual TV standards, for example NTSC corresponding to 30 frames per second. The board takes the view that the skilled person would have designed the compression and decoding means (feature "a" above) and time compression and time decompression means (feature "b" above) to operate on a group of pictures (GOP) of 15 frames as a matter of usual design, NTSC corresponding to 2 GOPs of 15 frames per second. This would correspond to the choice of $M=15$ and $N=2$ (see paragraph [0028] of the patent specification), these all being integer values; see feature "d" above. The writing of the resulting compressed video writing signal of $N*M$ frames onto L successive sectors of the hard disk (feature "c" above) thus constitutes a straightforward implementation of writing a plurality of blocks of length equivalent to one second of video frames as taught in E1, column 7, lines 38 to 50. The skilled person would have been aware that a second of video compressed in this way amounts to several megabytes. Since the storage capacity of a PC hard disk sector was at most 2 kilobytes, and the appellant has not proved that it was usual to access merely part of a sector, the board finds that the skilled person would have chosen an integer value of L greater than 1 as a matter of routine; see feature "d" above. Hence the skilled person would have selected values for each of L , M and N which were greater than 1 in an obvious manner, thus arriving at the subject-matter of claim 1 according to the main request without inventive step.

3.2 *The first auxiliary request*

Since claim 1 differs from that of the main request in that L, M and N are further constrained to all be greater than one, the reasoning for the main request also applies to claim 1 according to the first auxiliary request.

3.3 *Conclusion on inventive step*

The subject-matter of claim 1 according to both the main and the first auxiliary request is not considered to involve an inventive step, Article 56 EPC 1973.

4. *The second auxiliary request, admissibility*

The second auxiliary request, made in the oral proceedings before the board, relates to amendments to claim 1. These amendments constitute an amendment to the appellant's case after oral proceedings have been arranged. According to Article 13(3) RPBA (see OJ EPO 2007, 536), such amendments to a party's case "shall not be admitted if they raise issues which the Board or the other party or parties cannot reasonably be expected to deal with without adjournment of the oral proceedings".

Article 13 RPBA reflects both the right to be heard (Article 113 EPC 1973) and the discretionary power of a board to disregard facts or evidence which were not submitted in due time (Article 114(2) EPC 1973), both as to the substance and, where applicable, the admissibility of an amendment. This is particularly true if such amendments are made at a very late stage,

as is the case after oral proceedings have been arranged (Article 13(3) RPBA).

The appellant has argued that the amendments were made in reaction to objections under Article 123(2) EPC raised by the board in the annex to the summons. It seems to the board that the respondent's inability to deal with the new request stems largely from the appellant's decision to wait until the oral proceedings before filing the new request. The appellant has argued that too little time was available after the summons to oral proceedings to prepare a submission. The board however notes that the appellant did indeed file a detailed response dated 9 December 2008 to the summons, so it seems that adequate time was indeed available despite the Christmas holidays. Moreover the appellant has not disputed that the date set for the oral proceedings in the summons complied with Rule 71(1) EPC 1973. The board consequently takes the view that the appellant could have filed the second auxiliary request earlier, with his response to the summons to oral proceedings. Had he done so then the respondent could have decided to attend the oral proceedings or to file written comments. By choosing to wait until the oral proceedings to file the new request, had it been admitted, the appellant would have taken the respondent by surprise and put the board in a position where it could not deal with it without adjournment of the oral proceedings. Under these circumstances Article 13(3) RPBA requires that the amendments to the appellant's case not be admitted.

The board consequently decided not to admit the second auxiliary request.

5. *Conclusion*

Since neither of the appellant's main or first auxiliary requests is allowable and the second auxiliary request is not admitted, the appealed decision cannot be set aside.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:

L. Fernández-Gómez

F. Edlinger