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**Datasheet for the decision
of 31 October 2023**

Case Number: T 1244/19 - 3.5.04

Application Number: 06019602.9

Publication Number: 1729515

IPC: H04N5/775

Language of the proceedings: EN

Title of invention:

Multimedia time warping system

Patent Proprietor:

TiVo Solutions Inc.

Opponents:

Interessengemeinschaft für Rundfunkschutzrechte e.V. (former
opponent)
Brunner/Williamson, John M. O./Claire Louise

Headword:

Relevant legal provisions:

EPC 1973 Art. 100 (a)
EPC Art. 56

Keyword:

Inventive step - (yes)

Decisions cited:

G 0003/14, T 1795/11

Catchword:



Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 1244/19 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 31 October 2023

Appellant: TiVo Solutions Inc.
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C/o Dr. Manfred Roßmanith (Liquidator)
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Respondent: Brunner/Williamson, John M. O./Claire Louise
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 25 February
2019 revoking European patent No. 1729515
pursuant to Article 101(3) (b) EPC.**

Composition of the Board:

Chair	B. Willems
Members:	M. Paci
	B. Müller

Summary of Facts and Submissions

I. The appeal is against the opposition division's decision dated 25 February 2019 revoking European patent No. 1 729 515 pursuant to Article 101(3)(b) EPC.

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

E1: US 5 774 186

III. The opposition division revoked the patent pursuant to Article 101(3)(b) EPC for the following reasons.

- The subject-matter of claim 1 of **the main request and auxiliary requests AR5 to AR13** did not involve an inventive step in view of prior-art document E1 and common general knowledge (Article 56 EPC).
- The claims of **auxiliary requests AR1 to AR4 and AR7 to AR16** did not meet the requirements of Article 123(2) EPC.
- The claims of **auxiliary request AR3** did not meet the requirement of clarity of Article 84 EPC.

IV. The patent proprietor (hereinafter "appellant") filed notice of appeal. With the statement of grounds of appeal, the appellant filed claims according to new auxiliary requests AR1a, AR1b, AR1c and AR1d.

The appellant requested that the opposition division's decision be set aside and that the patent be maintained on the basis of the following requests in this order:

- the main request on which the decision under appeal is based

- auxiliary requests AR1a, AR1b, AR1c and AR1d filed with the statement of grounds of appeal
- auxiliary requests AR1 to AR16 on which the decision under appeal is based

It further requested oral proceedings if the board was minded not to allow the main request.

- V. By letter dated 29 September 2021, the appellant filed an expert opinion by Dr Thomas Schierl.
- VI. By letter dated 12 October 2021, the liquidator of opponent O1 (hereinafter "respondent O1") informed the board that the registered association of respondent O1 had been liquidated. The liquidator requested that all further communications relating to all pending proceedings involving respondent O1 be addressed to them.
- VII. By letter dated 19 July 2022, the board issued a summons to oral proceedings scheduled to be held on 25 October 2023.
- VIII. In a communication pursuant to Article 15(1) RPBA 2020 dated 8 August 2023, the board set out its provisional opinion, which may be summarised as follows.
- The subject-matter of the claims of **the main request**, when properly construed, was not rendered obvious by the combination of prior-art document E1 and the skilled person's common general knowledge (Articles 100(a) and 56 EPC 1973).
 - As held in decision T 1795/11, the main request met the requirements of Articles 100(b) and 83 EPC 1973, Articles 100(c) and 76(1) EPC 1973 and Article 123(2) and (3) EPC.

- The amendments made to the patent as granted did not introduce any non-compliance with Article 84 EPC 1973.

IX. By letter dated 9 August 2023, opponent O2 (hereinafter "respondent O2" informed the board that it would not be attending the oral proceedings.

X. By letter dated 6 October 2023, the liquidator of respondent O1 informed the board that the registered association of respondent O1 had ceased to exist on 14 June 2023.

XI. By letter dated 11 October 2023, the appellant informed the board that its request for oral proceedings was conditional on its main request not being granted.

XII. In a communication dated 16 October 2023, the board informed the parties that the oral proceedings had been cancelled.

XIII. The sole claims 1 and 2 of the appellant's main request read as follows:

"1. A process

(a) for the simultaneous storage and play back of multimedia data, comprising the steps of:

(b) providing a physical data source, wherein said physical data source accepts broadcast data from an input device, parses video and audio data from said broadcast data, and temporarily stores said video and audio data;

(c) providing a source object (1101), wherein said source object extracts video and audio data from said physical data source;

(d) providing a transform object (1103), wherein said transform object stores and retrieves MPEG streams onto a storage device;

(e) wherein said source object obtains a buffer from said transform object, said source object converts video data into MPEG streams and fills said buffer with said streams;

(f) wherein said source object is automatically flow controlled by said transform object;

(g) providing a sink object (1105), wherein said sink object obtains buffers containing MPEG streams from said transform object and outputs said streams to a video and audio decoder (1115);

(h) wherein said decoder converts said streams into TV signals and sends said signals to a TV receiver;

(i) wherein said sink object is automatically flow controlled by said transform object;

(j) providing a control object (1114), wherein said control object receives commands from a user, said commands control flow of the broadcast data through the system; and

(k) wherein said control object sends flow command events to said source, transform and sink objects.

2. An apparatus

(a) for the simultaneous storage and play back of multimedia data, comprising:

(b) a physical data source, wherein said physical data source accepts broadcast data from an input device, parses video and audio data from said broadcast data, and temporarily stores said video and audio data;

(c) a source object (1101), wherein said source object extracts video and audio data from said physical data source;

(d) a transform object (1103), wherein said transform object stores and retrieves MPEG streams onto a storage device;

(e) wherein said source object obtains a buffer from said transform object, said source object converts video data into MPEG streams and fills said buffer with said streams;

(f) wherein said source object is automatically flow controlled by said transform object;

(g) a sink object (1105), wherein said sink object obtains MPEG stream buffers from said transform object and outputs said streams to a video and audio decoder (1115);

(h) wherein said decoder converts said streams into TV signals and sends said signals to a TV receiver;

(i) wherein said sink object is automatically flow controlled by said transform object;

(j) a control object (1114), wherein said control object receives commands from a user, said commands control flow of the broadcast data through the system; and

(k) wherein said control object sends flow command events to said source, transform, and sink objects."

Reasons for the Decision

1. The appeal is admissible.

Main request - preliminary remarks

2. The claims of the main request are the same as the claims of the first auxiliary request on the basis of which the board (in a different composition) remitted the case for further prosecution to the department of first instance in appeal case T 1795/11. In that

decision, the board held that the claims of that request met the requirements of Articles 100(b) and 83 EPC 1973, Articles 100(c) and 76(1) EPC 1973 and Article 123(2) and (3) EPC.

According to the established case law of the boards of appeal, the current board is bound by the decision of earlier decision T 1795/11 (see Case Law of the Boards of Appeal of the European Patent Office ("Case Law"), 10th edition, 2022, V.A.10.4). In any case, the current board concurs with the findings of the board in appeal case T 1795/11.

Main request - inventive step

3. The opposition division held (see section 15.2.2.6 of the Reasons for the decision) that the subject-matter of claim 1 did not involve an inventive step essentially for the reasons set out below.

According to the opposition division, it was undisputed by the appellant that all the features were disclosed in E1 except features (b), (f) and (i).

Re feature (b), the opposition division reasoned that the step of parsing was not anticipated by the tuning/demodulating in E1 (102 in Figure 1), but parsing was an inherent and necessary step in decoding an MPEG video stream. The parsing at the start of the process had no effect on the other steps of the process of claim 1. Hence feature (b) could not render the claimed process inventive.

Features (f) and (i), relating to an automatic flow control by a transform object, corresponded to what would be commonly expected from a memory controller,

such as disclosed in E1: READ and WRITE cycles were alternating and mutually exclusive; a memory controller had to ensure that an allocated buffer could either be read from or written to. Hence features (f) and (i) could not render the claimed process inventive.

4. The appellant's arguments in the statement of grounds of appeal may be summarised as follows.

Not only were features (b), (f) and (i) not disclosed by document E1, but features (d), (e) and (g) were not either (see point 88 of the statement of grounds of appeal).

Re feature (b) (see points 90 to 101 and 120 of the statement of grounds of appeal)

The parsing as claimed in feature (b), particularly as a pre-processing step, i.e. before the data is stored, was not disclosed in E1 and was neither inherent to nor necessary for decoding MPEG streams. Thus it did not form part of the common general knowledge.

Contrary to the opposition division's finding, the fact that the data was parsed prior to being stored had a technical effect, particularly on the trick play functions. Parsing before storing meant meta-level information, e.g. timestamp data, was generated for the MPEG events, and logical segments were generated, which included this meta-level information. Thanks to the stored meta-level information, the location of a video frame could be easily found, which allowed trick play functions, such as fast forward, without overburdening the CPU.

Re features (d), (e) and (g) (see points 102 to 112 and 120 of the statement of grounds of appeal)

E1 neither disclosed nor suggested a transform object which allocated an empty buffer to a source object in which the source object, in return, filled this buffer with MPEG streams. Nor did E1 disclose a transform object which provided buffers filled with MPEG streams to a sink object, which, in return, output said streams to a video and audio decoder.

E1 did not disclose a transform object which provided buffers to a source object and a sink object. Nor did it teach or suggest a source object that filled the buffer with MPEG streams, or a sink object that output streams to a decoder, when a corresponding buffer was obtained from the transform object, but which were blocked otherwise, i.e. when no such corresponding buffer was ready. Moreover, as acknowledged by the previous board in appeal case T 1795/11 (see point 2.4 of that decision), the term "*object*" had to be interpreted as a software term that described a collection of data or operations. This was in contrast to the READ and WRITE operations in E1, which were disclosed at hardware level.

Re features (f) and (i) (see points 113 to 120 of the statement of grounds of appeal)

E1 neither disclosed nor suggested an automatic flow control by a transform object. In E1, the input buffer accepted the incoming video stream as it was, irrespective of its data rate. Asymmetric data rates were handled by overwriting previously stored data in the circular input buffer. In contrast, the process of claim 1 handled asymmetric data rates by blocking the

sink object until a buffer filled with MPEG streams was ready. Moreover, in claim 1, the data flow was positively controlled at software level, i.e. using software objects, whereas in E1 the flow control was implemented in hardware.

5. The board's assessment of inventive step is set out below.

The board notes that the difference in views regarding inventive step between the opposition division and the appellant arises to a large extent from diverging interpretations of the subject-matter of claim 1, in particular regarding the features relating to the "*parsing as a pre-processing step*", the "*transform object*" and the "*automatic control flow*".

The board thus considers it appropriate in the case in hand to first determine how the subject-matter of claim 1 should be construed, before proceeding to the assessment of inventive step itself.

5.1 Interpretation of claim 1

- 5.1.1 The board interprets the claims in a manner which is technically sensible and takes into account the whole disclosure of the patent (see also Case Law, II.A.6.1).

5.1.2 Re the "*parsing as a pre-processing step*"

According to feature (b), the "*physical data source ... parses **video and audio data** from said broadcast data, and temporarily stores **said video and audio data***" (emphasis by the board).

According to feature (c), a "source object extracts **video and audio data** from said physical data source" (emphasis by the board).

According to feature (e), "said source object converts **video data** into MPEG streams" (emphasis by the board).

In the board's view, the "video and audio data" of feature (c) and the "video data" of feature (e) are to be understood as the "video and audio data" which have been parsed from the broadcast data and temporarily stored in feature (b). This interpretation is supported by the description of the patent (see, for instance, paragraphs 10 and 12 of the patent specification). Importantly, the parsing (feature (b)) is performed prior to the decoding (features (g) and (h)) and the decoding is performed on a reassembled MPEG stream obtained from video and audio data extracted from the broadcast data during the parsing (features (b), (c) and (e)).

5.1.3 Re the "transform object"

According to point 2.4 of decision T 1795/11 (see point 2. above), the term "object" in current claim 1 must be interpreted as a software term that describes a collection of data or operations. The current board concurs with this interpretation (see also the last sentence of paragraph 41 of the patent specification). Hence the "transform object", the "source object", the "sink object" and the "control object" in claim 1 should be construed as software objects.

5.1.4 Re the "automatic flow control"

Features (d) to (k) of claim 1 contain the following wording relating to the flow of data between the source, transform, sink and control objects:

- (d) *providing a transform object (1103), wherein said transform object stores and retrieves MPEG streams onto a storage device;*
- (e) *wherein said source object obtains a buffer from said transform object, said source object converts video data into MPEG streams and fills said buffer with said streams;*
- (f) *wherein said source object is automatically flow controlled by said transform object;*
- (g) *providing a sink object (1105), wherein said sink object obtains buffers containing MPEG streams from said transform object and outputs said streams to a video and audio decoder (1115);*
- (h) *...*
- (i) *wherein said sink object is automatically flow controlled by said transform object;*
- (j) *providing a control object (1114), wherein said control object receives commands from a user, said commands control flow of the broadcast data through the system; and*
- (k) *wherein said control object sends flow command events to said source, transform and sink objects.*

In the board's view, the following technical information can be derived from the above features.

- The buffers used by the source and sink objects are data containers that are "obtained from" the transform object (see features (e) and (g)). The

term "*obtained from*" is understood to have the meaning of "*allocated by*" (see paragraph 38 of the patent specification). The wording of claim 1 leaves it open whether a buffer is a software or hardware entity.

- The content of the buffers is passed from the source object to the transform object and from the transform object to the sink object (see features (d), (e) and (g)).
- The source and sink objects are "*automatically flow controlled by said transform object*" (see features (f) and (i)). How the transform object controls the data flow from the source object and to the sink object is not specified but involves obtaining buffers from the transform object. The transform object itself acts according to instructions ("*flow command events*") from a control object according to commands from a user for controlling the "*flow of the broadcast data through the system*" (see features (j) and (k)).

5.1.5 The above interpretation of claim 1 by the board was not disputed by either the appellant or the respondents.

5.2 Inventive step

5.2.1 Re the "*parsing as a pre-processing step*"

According to the board's interpretation of claim 1 under point 5.1.2 above, the parsing (feature (b)) is performed prior to the decoding (features (g) and (h)), and the decoding is performed not on the broadcast data itself but on MPEG streams reassembled from video and audio data extracted from the broadcast data during the parsing (features (b), (c) and (e)).

In document E1, the sole embodiment mentioning MPEG streams is the one shown in Figure 5. In that embodiment, the simultaneous storage and play back of multimedia data is achieved by forwarding MPEG-1 streams received from a T-1 line (152) to a disk memory (162), and simultaneously reading out previously stored MPEG-1 streams from the disk memory to an MPEG-1 decoder (156): see Figure 5 and column 9, lines 29 to 36.

Document E1 does not mention any parsing. However, the board concurs with the opposition division that the MPEG-1 decoder (156 in Figure 5) necessarily parses the incoming MPEG streams in order to identify the elements it must decode. The parsing must be performed by the decoder immediately prior to the actual decoding, otherwise the decoder would not know what to decode.

However, in E1, the MPEG-1 streams input from the disk memory (162) to the MPEG-1 decoder (156) are the same MPEG-1 streams as those which were received earlier via the T-1 line (152).

In contrast, according to claim 1 (as construed by the board), the decoding is performed not on the broadcast data itself but on MPEG streams reassembled from video and audio data extracted from the broadcast data during the parsing (features (b), (c) and (e)).

The embodiment in Figure 5 of E1 does not modify the MPEG streams in the above manner between the parsing step and the decoding step. Nor can the board see any reason why the skilled person starting from E1 would want to modify the process of E1 in this direction.

The embodiment shown in Figure 1 of E1, which has a general structure similar to the embodiment of Figure 5, does not disclose that the received television signal may be MPEG streams. However, since the received television signals may be digital (see column 4, lines 55 to 61), the board regards it as obvious that these would preferably be transmitted as MPEG streams, because MPEG-1 and MPEG-2 were already well-established international standards for transmitting digital television signals. Even in that case, though, the skilled person would have had no reason to modify MPEG streams in the above manner between the parsing step and the decoding step. The board concurs with the appellant and the opposition division that the tuning and modulating means (102 in Figure 1) cannot be regarded as performing a parsing step (see point 15.2.2.6.1 of the Reasons for the decision under appeal).

The opposition division held that the parsing at the start of the process had no effect on the other steps of the process of claim 1, in particular on flow control.

The board is not convinced that the parsing has no technical effect at all on the other steps of the process of claim 1, in particular on flow control, for the following reasons.

As explained under point 5.1.2 above, the MPEG streams transferred from the source object to the transform object and from the transform object to the sink object are not the MPEG streams in the broadcast data, but MPEG streams reassembled from video and audio data extracted from the broadcast data **during the parsing** (features (b), (c) and (e)). Claim 1 does not indicate

to what extent the MPEG streams differ before and after the parsing step. However, the mere fact that the MPEG streams are changed by the parsing and reassembling necessarily has an effect on the data flow further downstream.

5.2.2 Re the "*transform object*" and the "*automatic flow control*"

As explained in point 5.1.3 above, the "*transform object*", the "*source object*", the "*sink object*" and the "*control object*" in claim 1 are software objects.

The board concurs with the opposition division that the passages in column 5, lines 35 to 54 and column 7, lines 13 to 21 of E1 suggest that there must be a memory controller controlling the timing of the READ and WRITE operations between the various modules shown in Figures 1 and 5. The board also notes that the description of the embodiments of Figures 1 and 5 points to a hardware implementation; however, column 9, lines 50 and 51 of E1 generalises the disclosure to a software implementation by stating that "*(t)he algorithms may be implemented in software, hardware or in a combination of software and hardware*".

In the board's view, a software implementation of the presumably hardware-based memory controller of E1 could take many forms and shapes. The board is not convinced that the particular software structure in claim 1, consisting of four software objects (the "*transform object*", the "*source object*", the "*sink object*" and the "*control object*") cooperating as stated in claim 1, would have been obvious to the skilled person, in particular regarding the allocation of buffers by the

transform object to the source and sink objects (see point 5.1.4 above).

5.3 Conclusion on inventive step for the main request

For the above reasons, the board considers that the process of claim 1 is not rendered obvious by document E1 and the skilled person's common general knowledge. The same conclusion applies *mutatis mutandis* to the apparatus of claim 2, which has features corresponding to those of the process of claim 1.

6. Article 84 EPC 1973

6.1 It is established case law of the boards of appeal that, in considering whether, for the purposes of Article 101(3) EPC, a patent as amended meets the requirements of the EPC, the claims of the patent may be examined for compliance with the requirements of Article 84 EPC 1973 only when, and then only to the extent that, the amendment introduces non-compliance with Article 84 EPC 1973 (see decision G 3/14, OJ EPO 2015, A102, Order, of the Enlarged Board of Appeal, and Case Law, IV.C.5.2.2).

6.2 In the case in hand, the claims of the main request have been amended compared with the claims of the patent as granted, but essentially only by the insertion of the term "*object*" after the terms "*source*", "*transform*", "*sink*" and "*control*".

6.3 In the board's view, these amendments do not introduce non-compliance with Article 84 EPC 1973.

Conclusion on the main request

7. In view of the above, the board is satisfied that, taking into consideration the amendments made by the appellant during the opposition proceedings, the patent according to the appellant's main request and the invention to which it relates meet the requirements of the EPC (Article 101(3)(a) EPC).

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent as amended in the following version:

Description:

Columns 1 to 15 of the patent as granted

Claims:

No. 1 and 2 filed as "Auxiliary Request 1" on 16 May 2017

Drawings:

Figures 1 to 13 of the patent as granted

The Registrar:

The Chair:



A. Pinna

B. Willems

Decision electronically authenticated