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**Datasheet for the decision  
of 18 December 2018**

**Case Number:** T 1148/13 - 3.5.04

**Application Number:** 10181358.2

**Publication Number:** 2293571

**IPC:** H04N7/26, H04N7/66

**Language of the proceedings:** EN

**Title of invention:**  
Channel switch frame

**Applicant:**  
Qualcomm Incorporated

**Headword:**

**Relevant legal provisions:**  
EPC Art. 84

**Keyword:**  
Claims - clarity - main request (no) - clarity - first, second  
and third auxiliary requests (no)

**Decisions cited:**

**Catchword:**



**Beschwerdekammern**  
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Case Number: T 1148/13 - 3.5.04

**D E C I S I O N**  
**of Technical Board of Appeal 3.5.04**  
**of 18 December 2018**

**Appellant:** Qualcomm Incorporated  
(Applicant) 5775 Morehouse Drive, R-132 D  
San Diego, CA 92121-1714 (US)

**Representative:** Tomkins & Co  
5 Dartmouth Road  
Dublin 6 (IE)

**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted on  
13 November 2012 refusing European patent  
application No. 10181358.2 pursuant to  
Article 97(2) EPC

**Composition of the Board:**

**Chairman** C. Kunzelmann  
**Members:** B. Willems  
B. Müller

## **Summary of Facts and Submissions**

- I. The appeal is against the decision of the examining division dated 13 November 2012 refusing European patent application No. 10 181 358.2 pursuant to Article 97(2) EPC. The application was published as EP 2 293 571 A1.
  
- II. The documents cited in the decision under appeal included the following:  
  
D3: Bormans J. et al: "Video coding with H.264/AVC: tools, performance, and complexity", IEEE CIRCUITS AND SYSTEMS MAGAZINE, IEEE SERVICE CENTER, New York, NY, US, vol. 4, no. 1, January 2004, pages 7-28, XP011111220, ISSN: 1531-636X.
  
- III. The application was refused on the grounds that claim 1 of the main and the auxiliary request was not clear (Article 84 EPC) and the subject-matter of claim 1 of the main and the auxiliary request lacked inventive step over the disclosure of D3 (Article 56 EPC).
  
- IV. The applicant filed notice of appeal. With the statement of grounds of appeal, the appellant submitted amended claims in accordance with first, second and third auxiliary requests and requested that the examining division's decision be set aside and that a European patent be granted on the basis of the claims of the main request underlying the decision under appeal or, alternatively, of the first, second or third auxiliary request filed with the statement of grounds, or that the case be remitted to the examining division.

The appellant submitted arguments as to why the claims of all the requests met the requirements of Articles 56 and 84 EPC.

- V. On 12 June 2018, the board issued a summons to oral proceedings.
- VI. On 18 June 2018, the board issued a communication under Article 15(1) RPBA (Rules of Procedure of the Boards of Appeal, OJ 2007, 536). In this communication, the board

(a) introduced the following documents into the appeal proceedings:

D4: US 6,480,541 B1 and

D6: Ville-Pekka Linnell et al: "Quality Scalability in H.264/AVC Video Coding", Visual Communications and Image Processing 2005, Beijing, 12 July 2005 to 15 July 2005, XP030080895,

(b) gave its provisional opinion that claim 1 of none of the requests on file met the requirements of Article 84 EPC,

(c) and indicated that should the appellant succeed in convincing the board that claim 1 of any of the requests on file met the requirements of Article 84 EPC, the board would be minded to remit the case to the department of first instance for further prosecution.

- VII. The appellant did not comment on the objections raised in the board's communication. On 5 December 2018, it announced by telephone that it would not be attending the oral proceedings. By electronic filing of

7 December 2018, the appellant withdrew the request for oral proceedings.

VIII. On 18 December 2018, the board held oral proceedings in the absence of the appellant.

The chairman noted that it appeared from the file that the appellant's final requests were that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of the main request underlying the decision under appeal or, in the alternative, the first, second or third auxiliary request filed with the statement of grounds of appeal, or that the case be remitted to the department of first instance.

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

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

"A method of encoding multimedia data characterised by comprising:

encoding (210), into an enhancement layer, a first portion of multimedia data using inter-coding to generate a first version, wherein the first portion comprises a first frame of video data;

encoding (212), into a base layer, the first portion of the multimedia data using intra-coding to generate a second version;

the first version being encoded with a first quality level and the second version being encoded a second

quality level that is lower than the first quality level."

- X. Claim 1 of the first auxiliary request reads as follows:

"A method of encoding multimedia data within a bitstream comprising a base layer and an enhancement layer, the method characterised by comprising:

encoding (210), in the enhancement layer of the bitstream, a portion of multimedia data using inter-coding to generate an inter-coded version of the portion of multimedia data, wherein the portion comprises a first frame of video data;

encoding (212), in the base layer of the bitstream, the portion of the multimedia data using intra-coding to generate an intra-coded version of the portion of multimedia data;

the inter-coded version being encoded with a first quality level and the intra-coded version being encoded a second quality level that is lower than the first quality level."

- XI. Claim 1 of the second auxiliary request reads as follows:

"A method of encoding multimedia data within a bitstream comprising a base layer and an enhancement layer, the method characterised by comprising:

encoding (210), in the enhancement layer of the bitstream, a portion of multimedia data using inter-coding to generate an inter-coded version of the

portion of multimedia data, wherein the portion comprises a first frame of video data;

encoding (212), in the base layer of the bitstream, the portion of the multimedia data using intra-coding to generate a an intra-coded version of the portion of multimedia data;

the inter-coded version being encoded with a first quality level and the intra-coded version being encoded a second quality level that is lower than the first quality level; and

wherein the inter-coded version comprises a P-frame or B-frame and the intra-coded version comprises a redundant switch frame."

XII. Claim 1 of the third auxiliary request reads as follows:

"A method of encoding multimedia data characterised by comprising:

encoding (210) a first portion of multimedia data using inter-coding to generate a first version, wherein the first portion comprises a first frame of video data;

encoding (212) the first portion of the multimedia data using intra-coding to generate a second version;

the first version being encoded with a first quality level and the second version being encoded a second quality level that is lower than the first quality level;



transmitting the first version over an enhancement layer communication link; and

transmitting the second version over a base layer communication link."

XIII. The examining division's objections, where relevant to the present decision, may be summarised as follows:

(a) Claim 1 specified that the first version of a first portion of multimedia data was inter-coded in the enhancement layer, whereas the second version of the first portion was intra-coded in the base layer. Hence the same portion of data was encoded using inter-coding and intra-coding. However, in the common meaning of the term "*enhancement layer*", this layer did not provide an alternative to coding the same data as the base layer, but contained data which together with the data of the base layer achieved a better quality. Therefore, the terms "*enhancement layer*" and "*base layer*" were used in an uncommon manner, which cast doubt on the matter for which protection was sought.

(b) The terms "*enhancement layer communication link*" and "*base layer communication link*" did not have recognised meanings in the art. Under the assumption that the first version of the first portion of multimedia data still related to enhancement data (since it was transmitted over an enhancement layer communication link) and that the second version of the first portion of multimedia data still related to base layer data (since it was transmitted over a base layer communication link), claim 1 of the auxiliary request did not meet the requirements of Article 84 EPC for the same reasons

as claim 1 of the main request (see decision, Reasons, point 2.2.1).

XIV. The appellant's arguments, where relevant to the present decision, may be summarised as follows:

- (a) Paragraph [0105] of the application as filed disclosed that a *"multimedia bitstream 850 comprises a base layer 852 and an enhancement layer 854 [...] the base layer P frames are encoded at a lower quality than the enhancement layer P frames [...] either the base layer quality I and P frames can be decoded, or the enhancement layer quality P frames can be decoded"*. Hence, either the base layer portion or the enhancement layer portion could be decoded. This was different from the base layer and enhancement layer together achieving a better quality. It was clear from claim 1 that the latter was not the case in the present invention (see statement of grounds of appeal, from the paragraph bridging pages 1 and 2 to page 2, first full paragraph).
- (b) The subject-matter of claim 1 was demonstrated by Figure 8B, not Figure 8A (see statement of grounds of appeal, page 2, second full paragraph).
- (c) For the third auxiliary request, the appellant referred to the grounds submitted in the section "I. Main Request" (see statement of grounds of appeal, page 8, section "IV. THIRD AUXILIARY REQUEST").

## Reasons for the Decision

1. The appeal is admissible.
2. *Main request and first and second auxiliary requests - clarity (Article 84 EPC)*

- 2.1 According to Article 84 EPC, the claims "*shall be clear*" and supported by the description.

The clarity of a claim is not diminished by the mere breadth of a term contained in it if the meaning of that term - either *per se* or in the light of the description - is unambiguous for a person skilled in the art (see also Case Law of the Boards of Appeal of the European Patent Office, 8th edition 2016, II.A.3.3).

- 2.2 Claim 1 of the main request specifies:

*"encoding (210), into an enhancement layer, a first portion of multimedia data using inter-coding to generate a first version [...] encoding (212), into a base layer, the first portion of the multimedia data using intra-coding to generate a second version; the first version being encoded with a first quality level and the second version being encoded a second quality level that is lower than the first quality level."*

Claim 2 of the main request states that the *"inter-coded version comprises a P-frame or B-frame and the second version comprises a redundant switch frame"*.

- 2.3 Similarly, claim 1 of the first and second auxiliary requests specifies generating an inter-coded version of

a portion of multimedia data in the enhancement layer and generating an intra-coded version of this portion in the base layer.

2.4 The board agrees with the examining division that the terms "enhancement layer" and "base layer" are not clear in the context of claim 1 of the main request and the first and second auxiliary requests (see section XIII above).

2.5 In scalable video coding, only the base layer can be independently decoded; all other layers require the decoding of lower layers (see D6, page 561, first full paragraph: "*The base layer (layer 0) is independently decodable. Sub-sequence layer 1 depends on some data in layer 0 i.e. to correctly decode a picture in sub-sequence layer 1 one needs to have decoded all referred pictures in sub-sequence layer 0, whether in a direct manner or not. Generally, correct decoding of sub-sequence layer N requires decoding of layers from 0 to N-1*"). Scalable coding is to be distinguished from simulcasting multiple independently decodable streams of different quality and bit rates (see D6, page 560, first full paragraph: "*Two solutions are commonly mentioned in the literature [...In] simulcast, multiple independent streams of different bitrates but originating from the same source sequence are sent simultaneously [...] Another solution [...] is layered IP multicast transmission. Each layer of a scalably coded bitstream is sent in its own multicast group, and receivers can subscribe to as many groups as they are capable of receiving or processing*"). The first solution is also known from document D4 (see column 7, lines 56 to 61: "*Multiple coders 100a, 100b, 100c are each designed for coding data with a different level of compression, so that each provides video data for*

*transmission at a different bit rate. In general, the greater the number of quantization levels used by the coder, the higher the quality of the transmitted image, and the higher the bit rate").* Thus, base layer and enhancement layer coding preclude independent decoding of the enhancement layer.

- 2.6 For the enhancement layer to be independently decodable, the first frame in the enhancement layer after a channel switch, i.e. frame 860 in Figure 8B, would have to be intra-coded because this frame could not be decoded with reference to a preceding frame in the same layer (due to the channel switch) or with reference to a frame in the base layer (because it should be independently decodable). However, frame 860 is a P (predicted) frame in the enhancement layer and *"can [only] be decoded after the reference data upon which it was predicted is decoded"* (see description, paragraph [0052]). Therefore, Figure 8B contradicts the appellant's interpretation of paragraph [0105] (see point XIV(a) above).

Moreover, the board notes that claim 1 does not make reference to a channel switch or a switch frame, even though both embodiments of Figures 8A and 8B belong to the section *"Switch Frame Methods Utilizing Base and Enhancement Layers"*. In this respect, the appellant's argument that claim 1 is demonstrated by Figure 8B (see point XIV(b) above) is not based on the wording of the claim, which does not comprise essential features of the embodiment allegedly demonstrating the claimed invention.

- 2.7 Summarising, claim 1 is ambiguous because it is not clear whether the terms *"base layer"* and *"enhancement layer"* are used in their standard meaning or whether

they are used in an uncommon manner which has not been specified in the claim. Therefore, claim 1 of the main request and claim 1 of the first and second auxiliary requests do not meet the requirements of Article 84 EPC.

3. *Third auxiliary request - clarity (Article 84 EPC)*

3.1 Claim 1 of the third auxiliary request specifies inter-coding a portion of multimedia data to generate a first version, intra-coding this portion to generate a second version and transmitting the first version over an enhancement layer communication link and the second version over a base layer communication link.

3.2 The board agrees with the examining division that the terms "*enhancement layer communication link*" and "*base layer communication link*" do not have well-defined meanings in the technical field of the application (see point XIII(b) above).

3.3 The appellant referred to the grounds set out for the main request. As far as these grounds concern the clarity objection raised by the examining division, these have been dealt with in section 2 above.

3.4 Moreover, the grounds relating to inventive step are not suitable to justify that claim 1 of the third auxiliary request is clear because claim 1 specifies different links (bitstreams) for the first and second versions, whereas the grounds (page 2, paragraph starting with "*As acknowledged by the Examiner*") suggest that a single bitstream is generated ("*D3 teaches having duplicate frames of different quality in different bitstreams [...] However, this is not the*

*same having a single bitstream with a duplicate frame of a lower quality").*

- 3.5 Summarising, the board finds that specifying a "*base layer communication link*" and an "*enhancement layer communication link*" (emphasis added) adds to the ambiguity identified in section 2 above. Hence, claim 1 of the third auxiliary request does not meet the requirements of Article 84 EPC.
4. In view of the above, the appellant's request for remittal of the case is without object and is thus to be refused. Since none of the appellant's requests are allowable, the appeal is to 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