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

Case Number: T 1149/13 - 3.5.04

Application Number: 10181435.8

Publication Number: 2293572

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, 123(2)

Keyword:
Claims - clarity - all requests (no)
Amendments - added subject-matter - all requests (yes)

Decisions cited:
G 0003/89, G 0011/91, G 0002/10

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1149/13 - 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. 10181435.8 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. 10 181 435.8 pursuant to Article 97(2) EPC. The application was published as EP 2 293 572 A1.
- II. The application was refused on the grounds that claim 1 of the main request and the auxiliary request was not clear (Article 84 EPC), the subject-matter of claim 1 of the main request and the auxiliary request extended beyond the disclosure of the application as filed (Article 123(2) EPC), and the claims of both requests did not meet the requirements of Rule 43(7) EPC.
- III. The applicant filed notice of appeal. With the statement of grounds of appeal, the appellant submitted amended claims in accordance with a main and first and second 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 or, alternatively, of either the first or second auxiliary request, all requests filed with the statement of grounds, or that the case be remitted to the examining division.
- The appellant submitted that reference numerals had been added to the claims (Rule 43(7) EPC) and provided arguments as to why the claims met the requirements of Articles 84 and 123(2) EPC.
- IV. On 12 June 2018, the board issued a summons to oral proceedings.

V. 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 Limnell 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 the subject-matter of claim 1 of the main request and the first and second auxiliary requests extended beyond the disclosure of the application as filed (Article 123(2) EPC) and that claim 1 of none of the requests on file met the requirements of Article 84 EPC, and

(c) 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.

VI. 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.

VII. 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 or, in the alternative, the first or second auxiliary requests, all 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.

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

"A method of processing multimedia data, comprising:

receiving (302) a first version of a first portion of multimedia data, wherein the first version (860) is inter-coded into an enhancement layer;

receiving (304) a second version of the first portion of multimedia data, wherein the second version (858) is intra-coded into a base layer;

receiving information relating to the encoded first and second versions; and

selectively decoding (306) the first and second received versions based on whether the received information comprises reference data upon which the inter-coded version depends."

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

"A method of processing multimedia data, comprising:

receiving (302) a first version of a first portion of multimedia data over an enhancement layer communication link, wherein the first version (860) is inter-coded;

receiving (304) a second version of the first portion of multimedia data over an base layer communication link, wherein the second version (858) is intra-coded;

receiving information relating to the encoded first and second versions; and

selectively decoding (306) the first and second received versions based on whether the received information comprises reference data upon which the inter-coded version depends."

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

"A method of processing multimedia data, comprising:

receiving (302) a first version of a first portion of multimedia data, wherein the first version (860) is inter-coded into an enhancement layer;

receiving (304) a second version of the first portion of multimedia data, wherein the second version (858) is intra-coded into a base layer;

receiving information relating to the encoded first and second versions; and

selectively decoding (306) the first and second received versions based on whether the received information comprises reference data upon which the inter-coded version depends by:

determining (308) whether reference data is available, the reference data being associated with the first inter-coded version;

locating the second intra-coded version within the multimedia data based on the received information, and decoding (312) the second intra-coded version in response to determining the reference data (310) to be unavailable; or

decoding the first inter-coded version in response to determining the reference data to be available."

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

(a) Paragraphs [0099] to [0112] "*at best indicate[d]*" selectively decoding the second version if a channel switch condition was in effect, or the first superframe was received with erroneous reference data. These passages of the application as filed did not provide a basis for selectively decoding the first or second received version based on whether the received information comprised reference information upon which the inter-coded version depended (see decision, Reasons, point 2.1.1).

(b) Claim 1 could be understood as meaning that either the base layer or the enhancement layer was decoded. However, the common meaning of the

enhancement layer was that it provided an addition to the base layer, not an alternative. If the terms "*enhancement layer*" and "*base layer*" had a different meaning, then this should have been defined in the claims (see decision, Reasons, point 2.1.2).

- (c) The terms "*enhancement layer communication link*" and "*base layer communication link*" did not have well-defined meanings in the technical field of the application (see decision, Reasons, point 2.3.1).

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

- (a) The subject-matter of claim 1 of the main request and the first auxiliary request was directly and unambiguously derivable from the following parts of the description as originally filed: paragraphs [0048], [0051], [0053], [0055], [0099], [0105] to [0107] and [0112]. In particular, the appellant quoted the description of Figure 8B set out in paragraphs [0105] to [0107] (see statement of grounds of appeal, pages 3 to 5).
- (b) Paragraph [0055] disclosed that the "*selective decoder 160 can then determine whether to decode the inter-coded version (e.g., if the reference data is available) or to decode the intra-coded version*" (emphasis added) (see statement of grounds of appeal, section "III. SECOND AUXILIARY REQUEST").
- (c) Basis for the step of decoding the first inter-coded version defined in claim 1 of the second auxiliary request was "*found in paragraph*

0051" [sic] (see statement of grounds of appeal, section "III. SECOND AUXILIARY REQUEST").

- (d) 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 enhancement layer not being an alternative to but an addition to the base layer (see statement of grounds of appeal, page 3, paragraph starting with "*As highlighted*").

Reasons for the Decision

1. The appeal is admissible.
2. *Main request and first auxiliary request - added subject-matter (Article 123(2) EPC)*
 - 2.1 According to the case law of the Enlarged Board of Appeal for assessing compliance with Article 123(2) EPC, any amendment can only be made within the limits of what a skilled person would derive directly and unambiguously, using common general knowledge, and seen objectively and relative to the date of filing, from the whole of the description, claims and drawings as filed (see G 3/89, OJ EPO 1993, 117; G 11/91, OJ EPO 1993, 125; G 2/10, OJ EPO 2012, 376).

2.2 Claim 1 of the main request and the first auxiliary request specifies:

"selectively decoding (306) the first and second received versions based on whether the received information comprises reference data upon which the inter-coded version depends."

Hence, the claim specifies that the first or second version is decoded depending on whether the reference data is available, i.e. present in the received data.

2.3 Unlike the appellant, the board finds that the subject-matter of claim 1 of the main request and the first auxiliary request is not directly and unambiguously derivable from the cited passages (see point XII(a) above).

2.3.1 Paragraphs [0106] and [0107] disclose that "*[if] a channel switch condition is in effect [...] or when the first superframe 866 is received with erroneous reference data [...] then the I frame 858 is decoded [...] If [...] all reference data is available [...] then [...] the enhancement layer quality P frames may be decoded*"). Therefore, the board agrees with the examining division that paragraphs [0099] to [0112] "*at best indicate*" (see point XI(a) above) selectively decoding the second version if a channel switch condition is in effect, or if the first superframe is received with erroneous reference data.

Thus, according to the description related to Figure 8B, the I frame is decoded if the reference frame is not available after a channel switch, or frames of the preceding "*superframe*" are received but possibly contain erroneous data. The latter suggests

that the I frame would be decoded despite the reference frame being "available" (albeit with propagated errors). This contradicts claim 1.

2.3.2 According to paragraph [0055], errors in the reference frames are signalled to the decoder to determine whether to decode the inter-coded version if the reference data is available or to decode the intra-coded version if the reference data is not available. This suggests that the received information comprises reference frames which might contain erroneous data and are, therefore, not to be used for decoding the inter-coded version of the data. Thus, the decision to decode the inter-coded or intra-coded version would depend on whether the reference frame can be used for decoding rather than whether the received information comprises the reference frame.

2.3.3 Paragraphs [0048] and [0051] specify that reference data may be transmitted and received over a sideband communication link. Paragraph [0053] specifies that the received reference data enables the decoder to determine if the reference data, upon which inter-coded data depends, is available. None of these paragraphs address the claimed "*selectively decoding*" or defines what is meant by "*available*".

2.3.4 Therefore, the board is not convinced that any of the passages referred to by the appellant provide a clear and unambiguous basis for the claimed subject-matter.

2.4 Hence, claim 1 of the main request and claim 1 of the first auxiliary request do not meet the requirements of Article 123(2) EPC.

3. *Second auxiliary request - added subject-matter
(Article 123(2) EPC)*

3.1 Claim 1 of the second auxiliary request specifies:

*"selectively decoding (306) the first and second received versions based on whether the received information comprises reference data upon which the inter-coded version depends by:
determining (308) whether reference data is available, the reference data being associated with the first inter-coded version".*

3.2 The added phrase *"determining whether reference data is available"* confirms that the inter-coded or intra-coded version is decoded depending on whether the received information comprises the reference frame (see also point 2.2 above).

3.3 Although paragraph [0055] discloses that the *"selective decoder 160 can then determine whether to decode the inter-coded version (e.g., if the reference data is available) or to decode the intra-coded version"* (see point XII(b) above), the adjective *"available"* in paragraph [0055] is used to indicate whether the decoder can use the data, not whether the data is present in the received information (see also points 2.3.1 and 2.3.2 above).

3.4 Paragraph [0052] of the description discloses that inter-coded data *"can be decoded after the reference data upon which it was predicted is decoded [...] If the portion of the frame identified by the motion vector and the frame identifier of the inter-coded version is available (e.g., already decoded), then the selective decoder 160 can decode the inter-coded*

version. If however, the reference data is not available, then the selective decoder 160 can decode the intra-coded version" (see point XII(c) above). This passage attributes yet a different meaning to "available", i.e. already decoded rather than present in the received information.

3.5 In view of the above, the board comes to the conclusion that the subject-matter of claim 1 of the second auxiliary request is not directly and unambiguously derivable from the application as filed.

3.6 Hence, claim 1 of the second auxiliary request does not meet the requirements of Article 123(2) EPC.

4. *Main and second auxiliary request - clarity (Article 84 EPC)*

4.1 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).

4.2 Claim 1 of the main request and the second auxiliary request specifies:

"receiving (302) a first version of a first portion of multimedia data, wherein the first version (860) is inter-coded into an enhancement layer;

receiving (304) a second version of the first portion of multimedia data, wherein the second version (858) is intra-coded into a base layer".

4.3 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 second auxiliary request (see point XI(b) above).

4.4 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 subsequence 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.

- 4.5 Claim 1 specifies "*selectively decoding (306) the first and second received versions*", which corresponds to paragraph [0105] of the description. Thus, either the base layer portion or the enhancement layer portion is decoded (see point XII(d) above).

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 XII(d) above).

- 4.6 Summarising, claim 1 is ambiguous because the idiosyncratic use of the terms "*base layer*" and "*enhancement layer*" casts doubt on the meaning of these terms.

- 4.7 Moreover, the board notes that claim 1 does not make reference to a channel switch or a switch frame, even though the embodiment of Figure 8B belongs

to the section "*Switch Frame Methods Utilizing Base and Enhancement Layers*". Thus, the appellant's arguments based on the embodiment of Figure 8B are not reflected in the wording of the claim, which does not comprise essential features of the embodiment allegedly pertaining to the claimed invention.

4.8 In view of the above, the board finds that claim 1 of the main request and claim 1 of the second auxiliary request do not meet the requirements of Article 84 EPC.

5. *First auxiliary request - clarity (Article 84 EPC)*

5.1 Claim 1 of the first auxiliary request specifies an enhancement layer communication link and a base layer communication link.

5.2 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 XI(c) above).

5.3 In the statement of grounds of appeal, page 5, the appellant essentially repeated the arguments put forward for the main request. The board does not find these arguments convincing (see section 4 above) and concludes that specifying a separate "*base layer communication link*" and "*enhancement layer communication link*" adds to the ambiguity identified in section 4 above.

5.4 In view of the above, the board finds that claim 1 of the first auxiliary request does not meet the requirements of Article 84 EPC.

6. 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