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Datasheet for the decision
of 13 May 2020

Case Number: T 1718/14 - 3.5.04

Application Number: 06815754.4

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IPC: H04N7/26, H04N7/50

Language of the proceedings: EN

Title of invention:
REDUNDANT DATA ENCODING METHODS AND DEVICE

Applicant:
Qualcomm Incorporated

Headword:

Relevant legal provisions:
RPBA Art. 12(4)
RPBA 2020 Art. 25(2)
EPC 1973 Art. 84
EPC Art. 123(2)
EPC R. 103(1)(a)

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Keyword:
Admissission into appeal proceedings - main request - (no)
Admission into appeal proceedings - auxiliary requests II-B
and II-C - (no)
Substantial procedural violation - (no)
Claims - clarity - auxiliary requests I, II-A and II-C (no)
Amendments - extension beyond the content of the application
as filed- auxiliary requests I, II-A and II-D- (yes)
Reimbursement of appeal fee - (no)

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

Catchword:

Case Number: **T 1718/14 - 3.5.04**

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 13 May 2020

Appellant: (Applicant)	Qualcomm Incorporated 5775 Morehouse Drive San Diego, CA 92121 (US)
Representative:	Heselberger, Johannes Bardehle Pagenberg Partnerschaft mbB Patentanwälte, Rechtsanwälte Prinzregentenplatz 7 81675 München (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 19 March 2014 refusing European patent application No. 06815754.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	C. Kunzelmann
Members:	B. Willems
	T. Karamanli

Summary of Facts and Submissions

I.   The appeal is against the decision of the examining
        division dated 19 March 2014 refusing European patent
        application No. 06 815 754.4 pursuant to Article 97(2)
        EPC. The application was published as international
        application WO 2007/038724 A1.

II.   The application was refused on the grounds that,
        contrary to Article 78(1)(c) EPC, the application did
        not contain one or more claims because the examining
        division, making use of its discretion under
        Rule 137(3) EPC, had not admitted the appellant's
        requests then on file into the proceedings.

III.   The applicant filed notice of appeal. With the
        statement of grounds of appeal filed on 30 June 2014,
        the appellant submitted amended claims according to a
        main request, an auxiliary request I (AR-I), an
        auxiliary request II-A (AR-II-A), an auxiliary request
        II-B (AR-II-B), an auxiliary request II-C (AR-II-C) and
        an auxiliary request II-D (AR-II-D). The appellant
        provided a basis in the application as filed for the
        claimed subject-matter and requested 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 one of the auxiliary requests filed with the
        statement of grounds of appeal. The appellant also
        requested the reimbursement of the appeal fee.

IV.   The board issued a summons to oral proceedings dated
        28 October 2019. In a communication under Article 15(1)
        RPBA 2007 (Rules of Procedure of the Boards of Appeal,
        OJ EPO 2007, 536), annexed to the summons, the board
        gave the following provisional opinion.

- The main request and auxiliary requests AR-II-B and AR-II-C should not be admitted into the proceedings (Article 12(4) RPBA).

- Claim 1 of auxiliary requests AR-I, AR-II-A and AR-II-D did not meet the requirements of Article 84 EPC 1973 and Article 123(2) EPC.

- The reimbursement of the appeal fee would not be equitable by reason of a substantial procedural violation (Article 103(1)(a) EPC).

V.   By letter dated 16 March 2020, the appellant informed the board that it would not be attending the oral proceedings scheduled for 2 April 2020 and that it did not intend to file a response to the board's communication. The appellant requested a decision "*according to the current status of the case*".

VI.   The board notified the appellant that the oral proceedings to be held on 2 April 2020 were cancelled.

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

"A method of processing video data, the method comprising:

obtaining (900; 1702; 2315; 2705; 2805) content information of the video data, wherein the content information comprises a content classification including values that quantify the complexity of the video data itself,
wherein the complexity of the video data comprises a spatial complexity and a temporal complexity and the content classification is determined based on the

spatial complexity as well as the temporal complexity; and

encoding (1704; 2320; 2710; 2810) the video data to form an encoded bitstream, said encoding comprising inserting at least one redundant block of intra-coded data into the encoded bitstream based on the content classification."

VIII. Claim 1 of auxiliary request AR-I differs from claim 1 of the main request by the following definition of the encoding:

"encoding (1704; 2320; 2710; 2810) the video data into a base layer and an enhancement layer to form an encoded bitstream, said encoding comprising inserting at least one redundant frame of intra-coded data into the encoded bitstream based on the content classification, and wherein the intra-coded data is encoded by using the quantization parameter for the base layer or the quantization parameter for the enhancement layer".

IX. Claim 1 of auxiliary request AR-II-A reads as follows:

"A method of processing video data, the method comprising:

obtaining (900; 1702; 2315; 2705; 2805) content information of the video data, wherein the content information comprises a content classification including values that quantify the complexity of the video data itself;
evaluating a frame difference metric between two frames of each macroblock as a function of the sum of a first term reflecting the contrast ratios between previous

and current frames and a second term reflecting the
luminance histogram difference between previous and
current frames; and

encoding a current frame of the macro block as one of
an intra-coded I frame, a predictive P frame, a bi-
directional B frame, or a skip frame, based on the
evaluated frame difference metric to form an encoded
bitstream."

X.   Claim 1 of auxiliary request AR-II-B reads as follows:

"A method of processing video data, wherein the video
data comprises a plurality of macroblocks, the method
comprising:

evaluating a frame difference metric between two frames
of each macroblock, the frame difference metric
comprising a first term reflecting the contrast ratios
between previous and current frames and a second term
reflecting the luminance histogram difference between
previous and current frames;

encoding (1704; 2320; 2710; 2810) a current frame of
the macroblock as one of an intra-coded I frame, a
predictive P frame, a bi-directional B frame, or a skip
frame, based on the evaluated frame difference metric
to form an encoded bitstream by inserting a greater
number of intra-coded frames for higher complex video
data and fewer number of intra-coded frames for lower
complex video data."

XI.   Claim 1 of auxiliary request AR-II-C reads as follows:

"A method of processing video data, wherein the video data comprises a plurality of macroblocks, the method comprising:

evaluating a frame difference metric between two frames of each macroblock, the frame difference metric comprising a first term reflecting the contrast ratios between previous and current frames and a second term reflecting the luminance histogram difference between previous and current frames;

classifying the current frame as an abrupt scene change frame if the evaluated frame difference metric is larger or equal to a first threshold; and

encoding (1704; 2320; 2710; 2810) a current frame of the macroblock as one of an intra-coded I frame, a predictive P frame, a bi-directional B frame, or a skip frame, based on the evaluated frame difference metric to form an encoded bitstream by inserting a greater number of intra-coded frames for higher complex video data and fewer number of intra-coded frames for lower complex video data;

wherein the current frame of the macroblock is encoded as an intra-coded I frame if classified as an abrupt scene change frame."

XII.   Claim 1 of auxiliary request AR-II-D reads as follows:

"A method of processing video data, the method comprising:

obtaining (900; 1702; 2315; 2705; 2805) content information of the video data, wherein the content information comprises a content classification

including values that quantify the complexity of the video data itself;

evaluating a frame difference metric D between two frames of each macroblock as:

$$D = \gamma C / \gamma P + A\lambda(2\lambda + 1)$$

wherein γC is the current frame contrast ratio, γP is the previous frame contrast ratio, λ is the luminance histogram difference and A is a constant; and

encoding a current frame of the macroblock as one of an intra-coded I frame, a predictive P frame, a bi-directional B frame, or a skip frame, based on the evaluated frame difference metric to form an encoded bitstream."

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

(a) The main request should be admitted into the proceedings. The claims of the main request met the requirements of Articles 56, 84 and 123(2) EPC (see statement of grounds of appeal, pages 15 to 21, points 20 to 33).

(b) The requests filed on 23 January 2014 had been filed in due time. By not admitting these requests into the proceedings, the examining division "*overstretched*" its discretion (see statement of grounds of appeal, page 5, second paragraph).

During the oral proceedings before the examining division, the appellant was forced to abandon all higher ranking requests so that the division would

consider further requests and corresponding
arguments (see statement of grounds of appeal,
pages 5 and 6, point 4).

(c) The person skilled in the art would have had no
difficulties understanding the meaning of the
technical features from the wording of claim 1 of
AR-I (see statement of grounds of appeal, page 22,
point 36).

(d) The amendments made to claim 1 of AR-I were, *inter
alia,* based on originally filed claims 10, 11, 22
and 23 and paragraphs [0247] and [0273] of the
description as filed (see statement of grounds of
appeal, page 22, point 35).

(e) In the independent claims of AR-II-A, the frame
difference metric had been clearly defined as a
function of the sum of a first term reflecting the
contrast ratios between previous and current frames
and a second term reflecting the luminance
histogram difference between previous and current
frames (see statement of grounds of appeal, the
paragraph bridging pages 23 and 24).

(f) The amendments made to claim 1 of AR-II-A were,
inter alia, based on originally filed claims 10,
11, 22 and 23 and paragraphs [0247] and [0273] of
the description as filed (see statement of grounds
of appeal, page 24, point 39).

(g) The person skilled in the art would have had no
difficulties understanding the meaning of the
technical features from the wording of claim 1 of
AR-II-D (see statement of grounds of appeal,
page 37, point 69).

(h) The combination of features of claim 1 of AR-II-D
    was directly and unambiguously disclosed in
    paragraphs [0131] and [0169] of the description as
    filed (see statement of grounds of appeal, page 37,
    point 68).

(i) The appeal fee should be reimbursed because AR-II-B
    and AR-II-C should have been admitted into the
    examination proceedings (see statement of grounds
    of appeal, page 28, point 49, page 32, penultimate
    paragraph and page 35, penultimate paragraph). The
    claims of these requests met the requirements of
    Articles 56, 84 and 123(2) EPC (see statement of
    grounds of appeal, pages 28 to 36, points 50
    to 66).

Reasons for the Decision

1.   The appeal is admissible.

2.   *Admission of the main request under Article 12(4)*
        RPBA 2007 into the proceedings

2.1   In the present case, the statement of grounds of appeal
        was filed before the date on which the revised version
        of the Rules of Procedure of the Boards of Appeal
        (RPBA 2020) entered into force, i.e. 1 January 2020
        (see OJ EPO 2019, A63). Thus, in accordance with
        Article 25(2) RPBA 2020, Article 12(4) to (6) RPBA 2020
        does not apply. Instead, Article 12(4) of the Rules of
        Procedure of the Boards of Appeal in the version
        of 2007 (RPBA 2007 - see OJ EPO 2007, 536, and EPC,
        16th edition, June 2016, pages 601 to 629) continues to
        apply.

2.2   The main request was submitted with the statement of
        grounds of appeal.

2.3   Article 12(4) RPBA 2007 stipulates that the statement
        of grounds of appeal (Article 12(1)(a) RPBA 2007) has
        to be taken into account by the board if it meets the
        requirements of Article 12(2) RPBA 2007. In accordance
        with Article 12(4) RPBA 2007, the board has the
        discretionary power to hold inadmissible facts,
        evidence and requests which could have been presented
        or were not admitted in the first-instance proceedings
        (see Case Law of the Boards of Appeal of the European
        Patent Office ("Case Law"), 9th edition 2019,
        V.A.4.11.1).

        It follows that the boards generally have their own
        margin of discretion to admit on appeal facts, evidence
        and requests refused by a department of first instance
        in proper exercise of its discretion (see Case Law,
        V.A.3.5.2 b)).

2.4   Claim 1 of the main request corresponds to claim 1 of
        the main request marked "14:46" filed at the oral
        proceedings before the examining division with the
        "*such that*" clause deleted.

2.5   According to the minutes of the oral proceedings before
        the examining division, points 28 and 30, the examining
        division used its discretion under Rule 137(3) EPC to
        not admit the request to delete the "*such that*" clause
        into the proceedings.

2.6   The appellant did not submit any reason why it thought
        that the examining division was wrong in not admitting
        this request. Instead, the appellant submitted reasons
        why claim 1 of the main request met the requirements of

Article 84 EPC and why the subject-matter of claim 1 of the main request was inventive starting from the disclosure of document D4 or D5 as the closest prior art (see point XIII(a) above).

2.7   In summary, claim 1 of the present main request corresponds to claim 1 of a request which according to the minutes of oral proceedings was not admitted into the proceedings by the examining division, and the appellant did not provide any reason why the examining division was wrong in not admitting the request.

2.8   Moreover, claim 1 of the present main request is remarkably similar to claim 1 dated 27 September 2011 with the "*such that*" clause deleted. In the communication dated 26 January 2012, the examining division raised an objection under Article 84 EPC against that claim because it was not clear what role the determination of the complexity of video data played in the subsequent step of encoding the video data. This objection applies *a fortiori* to claim 1 of the present main request. In first-instance proceedings, the applicant did not argue that the division's objection was incorrect. Instead, in an attempt to overcome the objection, it filed amended claims including a feature not present in claim 1 of the present main request (see point 3 of the letter dated 10 July 2012). Hence, present claim 1 of the main request is in substance a reaction to the objection raised in the communication dated 26 January 2012, which avoids adding the feature identified in point 3 of the letter dated 10 July 2012. Thus, present claim 1 of the main request could have been presented to the examining division, for instance, with the letter dated 10 July 2012.

2.9   In view of the above, the board concludes that the main
        request could and should have been filed in the
        first-instance proceedings. Thus, the board has
        discretion not to admit this request into the appeal
        proceedings under Article 12(4) RPBA 2007.

2.10   In the communications dated 18 November 2009 and
        18 March 2011, the examining division objected that the
        term "*redundant*" in the phrase "*inserting at least* one
        redundant block of intra-coded data" was not clear. In
        response to these communications, the appellant deleted
        the term "*redundant*" from the claims (see also the
        minutes of the oral proceedings before the examining
        division, point 7). Removing the wording objected to
        from the claims precluded the issue of a reasoned
        decision by the examining division. If the board
        admitted the main request into the appeal proceedings,
        it would be compelled to either give a first ruling on
        the issue of clarity (Article 84 EPC 1973), which runs
        contrary to the purpose of a second-instance ruling, or
        to remit the case to the department of first instance,
        which is clearly contrary to procedural economy (see
        Case Law V.A.4.11.4c) and V.A.4.11.4d)).

2.11   In view of the above, the board exercises its
        discretion under Article 12(4) RPBA 2007 and decides
        not to admit the main request into the proceedings.

3.   *Admission of AR-II-B and AR-II-C under Article 12(4)*
        RPBA 2007 into the proceedings

3.1   Auxiliary requests AR-II-B and AR-II-C were submitted
        with the statement of grounds of appeal. They form part
        of the basis of the appeal proceedings (Article 12(1)
        RPBA 2007), relate to the case under appeal and meet
        the requirements of Article 12(2) RPBA 2007.

Article 12(4) RPBA 2007 stipulates that, in principle, they have to be taken into account by the board, unless the board has the discretionary power to hold inadmissible these requests because they could have been presented in the first-instance proceeding.

3.2   It is established case law (see Case Law, V.A.4.11.4.c) that, in accordance with Article 12(4) RPBA 2007, the boards, as a rule, do not admit into proceedings requests withdrawn during first-instance proceedings because the fact that the request is withdrawn in the first-instance proceedings precludes the issue of a reasoned decision on its merits by the examining division. Therefore, reinstating this request upon appeal would compel the board either to give a first ruling on the critical issues, which runs contrary to the purpose of a second-instance ruling, or to remit the case to the department of first instance, which is clearly contrary to procedural economy. Thus, for the purposes of Article 12(4) RPBA, the resubmission upon appeal of requests withdrawn during the first-instance proceedings is tantamount to the submission upon appeal of new requests that could have been presented in the first-instance proceedings. Therefore, Article 12(4) RPBA provides boards with the discretionary power to hold inadmissible requests withdrawn in the first-instance proceedings.

3.3   According to the appellant, AR-II-B and AR-II-C correspond to the main and auxiliary request filed on 23 January 2014.

3.4   According to point 12 of the minutes of the oral proceedings before the examining division, the appellant withdrew these requests.

3.5   The appellant argued that it "*felt obliged to abandon all higher ranking requests so that the division would even consider a further request [... it] was forced into the situation either to have the oral hearing immediately terminated followed by a refusal [...] or to withdraw all requests on file in order to have the division consider whatever arguments and amendments the applicant had prepared [...] in order to [...] advanc[e] the prosecution of the present application, had to withdraw all requests on file soon after the start of the oral hearing*". However, it did not explain why maintaining a request would have resulted in the immediate termination of the oral proceedings such that it felt obliged to abandon all higher ranking requests (see point XIII(b) above).

3.6   The minutes of the oral proceedings before the examining division do not mention any obligation to withdraw pending requests before further requests could be considered. According to the minutes, point 10, the examining division announced that the requests filed on 23 January 2014 would not be admitted into the proceedings, and the appellant was given the opportunity to file amendments. The oral proceedings were then interrupted (see minutes, point 11). After the break, the appellant filed requests replacing all previous requests (see minutes, point 12).

        In the present case, the correctness of the minutes is not formally in doubt. Thus, the board has to consider that the minutes correctly reflect the course of the oral proceedings. Therefore, the board cannot find any evidence that the appellant was obliged to withdraw its requests. Hence, the appellant deliberately withdrew its requests at the oral proceedings before the examining division.

3.7   In view of the above, the board exercises its
        discretion under Article 12(4) RPBA 2007 and decides
        not to admit auxiliary requests AR-II-B and AR-II-C
        into the appeal proceedings.

4.   *AR-I - clarity (Article 84 EPC 1973)*

4.1   Claims must be clear in themselves when read by the
        person skilled in the art without any reference to the
        content of the description (see Case Law, II.A.3.1).

4.2   Claim 1 of AR-I specifies that the encoding comprises
        "*inserting at least one redundant frame of intra-coded
        data into the encoded bitstream based on the content
        classification*".

4.3   The board is not convinced that the person skilled in
        the art would have had no difficulties understanding
        the claimed technical features (see point XIII(c)
        above).

4.3.1   It is not clear from the wording "*based on*" in the
        phrase quoted in point 4.2 above whether the decision
        to insert a redundant frame or the number of redundant
        frames inserted depends on the content classification.

        If the number of frames (amount of data) depends on the
        content classification, it is not clear how the number
        depends on the content classification or in which unit
        of pictures the redundant frames are to be inserted,
        i.e. whether the number is defined per group of
        pictures (GOP), per scene, etc.

4.3.2   The description, paragraph [0247] discloses that if the
        content classification is relatively high, more
        intra-coded macroblocks are inserted into P- or

B-frames, i.e. the amount of redundant data is directly
proportional to the complexity. In contrast, according
to paragraph [0268], the amount of redundant data
inserted is inversely proportional to the complexity of
the multimedia data. In summary, the description does
not give a clear definition of how the amount of data
to be inserted depends on the content classification.

4.4   In view of the above, claim 1 of AR-I does not meet the
        requirements of Article 84 EPC 1973.

5.   *AR-I - added subject-matter (Article 123(2) EPC)*

5.1   According to the consistent interpretation of
        Article 123(2) EPC by the Enlarged Board of Appeal, an
        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).

        The content of an application must not be considered to
        be a reservoir from which features pertaining to
        separate embodiments of the application can be combined
        to artificially create a particular embodiment. In the
        absence of any pointer to a combination, the combined
        selection of features would not, for the person skilled
        in the art, emerge clearly and unambiguously from the
        content of the application as filed (see Case Law,
        II.E.1.6.1).

5.2   Claim 1 of AR-I specifies that the encoding comprises
        "*inserting at least one redundant frame of intra-coded
        data into the encoded bitstream based on the content*

*classification, and wherein the intra-coded data is
encoded by using the quantization parameter for the
base layer or the quantization parameter for the
enhancement layer*".

5.3   The board is not convinced that the subject-matter of
       claim 1 of AR-I is directly and unambiguously derivable
       from paragraphs [0247] and [0273] and claims 10, 11, 22
       and 23 of the application as filed (see point XIII(d)
       above).

5.3.1 Paragraph [0247] discloses inserting more intra-coded
       macroblocks into P- of B-frames if the content
       classification is relatively high.

       Originally filed claims 10 and 11 are dependent on
       originally filed claim 1. The latter specifies
       inserting at least one "*redundant block of intra-coded
       data*" (emphasis added). Similarly, original claims 22
       and 23 were dependent on original claim 12 which
       specifies inserting at least one redundant block of
       intra-coded data.

       In summary, originally filed claims 10, 11, 22 and 23
       and paragraph [0247] relate to inserting a redundant
       (macro)block into a P- or B-frame.

5.3.2 Paragraph [0273] discloses inserting redundant I-frames
       based on multimedia content information. This paragraph
       does not refer to spatial or temporal complexity.

5.3.3 None of the passages cited by the appellant specifies a
       quantisation parameter for the base layer (QPb) or a
       quantisation parameter for the enhancement layer (QPe).

The application as filed discloses a QPb and a QPe in the context of inserting intra-coded macroblocks in P- or B-frames (see paragraph [0246]).

5.3.4   Paragraph [0268] mentions both "*at least one redundant block of intra-coded data*" and "*at least one frame of redundant data, wherein the at least one frame of redundant data comprises an I-frame*". However, this paragraph discloses that the amount of redundant data is inversely proportional to the complexity of the data. This seems to contradict paragraph [0247], which discloses that if the content classification is relatively high, more intra-coded macroblocks are inserted into P- or B-frames, i.e. the amount of redundant data is directly proportional to the complexity.

5.4   In summary, claim 1 of AR-I is a combination of features from separate embodiments, and the application as filed does not contain a pointer to this combination.

5.5   In view of the above, claim 1 of AR-I does not meet the requirements of Article 123(2) EPC.

6.   *AR-II-A – clarity (Article 84 EPC 1973)*

6.1   The claims must be clear in themselves when read by the person skilled in the art without any reference to the content of the description. The meaning of the essential features should be clear for the person skilled in the art from the wording of the claim alone (see Case law, II.A.3.1).

        A claim cannot be considered clear within the meaning of Article 84 EPC 1973 if it comprises an unclear

technical feature for which no unequivocal generally accepted meaning exists in the relevant art (see Case Law, II.A.3.1).

6.2   Claim 1 of AR-II-A specifies "*a frame difference metric between two frames of each macroblock*", the "*contrast ratios between previous and current frames*" and the "*luminance histogram difference between previous and current frames*".

6.3   The board is not convinced that the definition of the frame difference metric as a function of the sum of a first term reflecting the contrast ratios between previous and current frames and a second term reflecting the luminance histogram difference between previous and current frames is clear (see point XIII(e) above).

        The phrase "*luminance histogram difference*" does not have a generally accepted meaning in the relevant art.

        The term "*contrast ratio*" is normally used to refer to the ratio of the luminance of the brightest part of a picture (pixel) to the luminance of the darkest part of a picture (pixel). The current application attributes a very specific meaning to "*contrast ratio*" (see paragraph [0128]) which is not clear from the claim alone.

6.4   In view of the above, claim 1 of AR-II-A does not meet the requirements of Article 84 EPC 1973.

7.   *AR-II-D – clarity (Article 84 EPC 1973)*

7.1   Claim 1 of AR-II-D specifies a "*frame difference metric D between two frames of each macroblock*" and a "*luminance histogram difference*".

7.2   The board is not convinced that the person skilled in the art would have had no difficulties understanding the meaning of the technical features from the wording of claim 1 of AR-II-D (see point XIII(g) above).

7.2.1   The phrase "*of each macroblock*" suggests that D is calculated at the macroblock level. However, the contrast ratio and luminance histogram difference are calculated at the frame (picture) level (see paragraphs [0128] and [0130]). Therefore, it is not clear how D can be calculated at the macroblock level.

7.2.2   The term "*luminance histogram difference*" does not have a generally accepted meaning in the relevant art. It is not clear from claim 1 how the difference between histograms can be calculated.

          The description, paragraph [0130], sets out one example of calculating this difference. The formula calculates the difference between the number of blocks in the ith bin for the previous frame and the number of blocks in the ith bin for the current frame. However, the luminance is normally a property of a pixel, and the paragraph does not specify how the luminance for a block is derived from the luminance of the pixels in the block. According to paragraph [0168], the histogram "*operates on*" the DC coefficient of a block or uses the average value of the 256 luminance values in a 16x16 block.

7.2.3   The term "*contrast ratio*" is normally used to refer to the ratio of the luminance of the brightest part of a picture (pixel) to the luminance of the darkest part of a picture (pixel). The current application attributes a very specific meaning to "*contrast ratio*" (see paragraph [0128]) which is not clear from the claim alone.

7.3   In view of the above, claim 1 of AR-II-D does not meet the requirements of Article 84 EPC 1973.

8.   *AR-II-A and AR-II-D - added subject-matter (Article 123(2) EPC)*

8.1   In accordance with established case law, it is not normally allowable to base an amended claim on the extraction of isolated features from a set of features originally disclosed only in combination, e.g. an embodiment in the description (see Case Law, II.E.1.9).

8.2   Claim 1 of AR-II-A and AR-II-D specifies encoding the frame as an I-frame, P-frame, B-frame or skip frame based on the frame difference metric.

8.3   The board has not been persuaded that the passages indicated by the appellant (see points XIII(f) and XIII(h) above) provide a clear and unambiguous basis for the features identified in point 8.2 above.

8.3.1   None of the originally filed claims specifies the coding referred to in point 8.2 above.

8.3.2   Paragraphs [0247], [0273], and original claims 10, 11, 22 and 23 do not disclose coding a frame as an I-frame, P-frame, B-frame or skip frame based on the frame difference metric.

8.3.3   Equations [6], [7] and [8] are not defined in the
         context of coding a frame as an I-frame, P-frame,
         B-frame or skip frame based on the frame difference
         metric defined in equation [8] and paragraph [0131].

8.3.4   The frame difference defined in paragraph [0169] is
         used in the "*process of assigning compression types*"
         shown in Figure 42. However, according to
         paragraph [0172] and Figure 42, a frame is coded as an
         I-frame if the frame difference exceeds a threshold,
         but a frame is coded as a P-frame, B-frame or skip
         frame depending on the value of the "*accumulated*" frame
         difference.

8.4   Thus, the claimed encoding is based on the extraction
         of isolated features (coding based on the frame
         difference metric) only disclosed in combination, i.e.
         the specific embodiment disclosed in paragraph [0172]
         and Figure 42.

8.5   In view of the above, claim 1 of AR-II-A and AR-II-D
         does not meet the requirements of Article 123(2) EPC.

9.   Since none of the appellant's requests is allowable,
         the appeal is to be dismissed.

10.   *Request for the reimbursement of the appeal fee*

10.1   Rule 103 EPC as amended in accordance with the decision
         of the Administrative Council of 12 December 2019 (see
         OJ EPO 2020, A5, Article 1 of the decision) entered
         into force on 1 April 2020 (see Article 2.1 of the
         decision) and is applicable to the present appeal
         pending on 1 April 2020 (see Article 2.2 of the
         decision).

In accordance with Rule 103(1)(a) EPC, the reimbursement of the appeal fee is to be ordered if the board deems an appeal allowable if such reimbursement is equitable by reason of a substantial procedural violation.

10.2   Since the appeal is to be dismissed, the request for the reimbursement of the appeal fee is refused.

Order

For these reasons it is decided that:

1.   The appeal is dismissed.

2.   The request for reimbursement of the appeal fee is refused.

The Registrar: The Chairman:

K. Boelicke   C. Kunzelmann

Decision electronically authenticated