

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TIHAO CHIANG, HUNG-JU LEE
and YA-QIN ZHANG

Appeal No. 2000-1540
Application No. 09/099,617

ON BRIEF

Before KRASS, BARRETT, and DIXON, Administrative Patent Judges.
KRASS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1, 4-7, 9-12, 14-18 and 20-22. Claims 8, 19 and 23 are now considered by the examiner [answer-page 2] to be directed to allowable subject matter and are not before us on appeal.

The invention is directed to a method and apparatus for optimizing the coding of motion video by adaptively adjusting a

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quantizer scale for each macroblock within a frame to maintain the overall quality of the motion video while optimizing the coding rate.

Representative independent claim 1 is reproduced as follows:

1. A method for allocating bits to encode each frame of an image sequence, each of said frame having at least one block, said method comprising the steps of:

(a) determining a target frame bit rate for the frame; and

(b) allocating said target frame bit rate among the at least one block in accordance with a target block bit rate for the at least one block, wherein said target block bit rate for the at least one block is selected in accordance with a mean absolute difference (Mad) of said block.

The examiner relies on the following reference:

Nickerson	5,528,238	June 18, 1996
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Claims 1, 4-7, 9-12, 14-18 and 20-22 stand rejected under 35 U.S.C. 102(b) as anticipated by Nickerson. Claims 8, 19 and 23 have been indicated by the examiner as being directed to allowable subject matter and are not before us on appeal.

Reference is made to the brief and answer for the respective positions of appellants and the examiner.

OPINION

With regard to independent claim 1, the examiner takes the position that Nickerson allocates bits to encode each frame of an image sequence, citing column 11, lines 27-55; that each frame has at least one block, citing column 11, lines 27-55; that a target frame bit rate for the frame is determined, citing, again, column 11, lines 27-55, and Figure 14; and that the target frame bit rate is allocated among the at least one block, once again citing column 11, lines 27-55.

Appellants contend that Nickerson does not disclose the allocation of bits to encode each frame, where a target block bit rate is allocated "in accordance with a mean absolute difference (Mad) of said block," as claimed. Appellants contend that the mean absolute difference serves an important function in that the target frame rate (the available coding bit for a frame) is then efficiently allocated based upon the mean absolute difference of each block, such concept not being disclosed by Nickerson. Rather, argue appellants, Nickerson teaches a "uniform bit distribution over the macroblocks," citing column 11, line 66- column 12, line 3, so that Nickerson simply distributes the specified coding bits for a frame evenly across all the

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macroblocks within the frame. Thus, argue appellants, Nickerson's block bit rate allocation is "completely different from Appellants' invention because Nickerson's invention is addressing the criticality of uniform bit rate" [brief-page 8], teaching away from the instant claimed invention which allocates the available frame bits in accordance with the content of each block as reflected in a measurement of the mean absolute difference of each block.

We agree with appellants and will not sustain the rejection of the claims under 35 U.S.C. 102(b). More specifically, we agree that Nickerson discloses the use of a mean absolute difference only as a measure to scale the selected quantization level for a macroblock and this is not the same as using the mean absolute difference to directly allocate bits to a block, as disclosed and claimed by appellants. From our review of Nickerson, appellants appear to be accurate when they indicate that Nickerson is mainly concerned with a *uniform* bit rate, wherein the mean absolute difference is used only as a modifying factor after both the macroblock bit rate and the quantization level have already been selected, in contrast to the instant claimed invention wherein the rate control is based on the mean absolute difference to allocate bits to each block, from which

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other functions, such as quantization level selection can be controlled.

Whether it was because the examiner recognized the weakness of his position in this regard, or for whatever reason, the examiner indicates an alternative interpretation in order to reject the claims under 35 U.S.C. 102(b). The examiner, quite reasonably, contends that since the claims call for "at least one block," this may include only one block. From that hypothesis, the examiner contends that if there is only one block, then each frame may constitute only one block and the block bit rate would be the same as the frame bit rate. Thus, the allocation would be among only one block. Since there is only one way to allocate the target frame bit among one block, the examiner concludes that there is an inherency at play here and that "no reference is needed for the rejection of this part of [the] claim" [answer-page 6].

While the examiner's approach is creative and shows some well thought out initiative, which we appreciate, after long and careful consideration to this argument we will still not sustain the rejection of the claims under 35 U.S.C. 102(b) despite a lack of position on the record by appellants regarding this interpretation (appellants have not filed a reply brief).

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If one could show that Nickerson discloses a situation wherein there might be only one block in a frame, then there would be prior art against which we could apply the examiner's interpretation. But, as it stands, the examiner's position appears to rely solely on appellants' own claim as a "prior art" reference applied against the claim. That is, the examiner uses the term, "at least one block" to somehow show that the prior art recognized that only one block per frame may be employed and we simply have nothing on the record to show that. Moreover, the examiner's interpretation appears to excise the claim limitation regarding the target block bit rate being "selected in accordance with a mean absolute difference (Mad) of said block" because, under the examiner's interpretation, it would be immaterial as to how the target block bit rate is selected. It appears to us that we would need to somehow ignore this specific claim language regarding the mean absolute difference if we adopted the examiner's rationale. Unless there is some good and sufficient reason for ignoring a specific claim limitation, e.g., a process limitation in a product-by-process claim, each and every claim limitation must be given weight when applying a rejection under 35 U.S.C. 102.

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Accordingly, we will not sustain the examiner's decision
rejecting claims 1, 4-7, 9-12, 14-18 and 20-22 under 35 U.S.C.
102(b).

REVERSED

ERROL A. KRASS)	
Administrative Patent Judge)	
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LEE E. BARRETT)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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JOSEPH L. DIXON)	
Administrative Patent Judge)	

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