The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PIOTR WILINSKI and CORNELIS W.A.M. VAN OVERVELD

Appeal No. 2006-0068
Application No. 09/241,957

ON BRIEF

Before HAIRSTON, BLANKENSHIP, and MACDONALD, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-10, which are all the claims in the application.

We reverse.

BACKGROUND

The invention relates to motion or depth estimation in video coding applications. Representative claim 1 is reproduced below.

1. A motion estimation method, comprising the steps:

generating, for a given image part of interest, a set of candidate motion vectors formed by already obtained motion vectors for neighboring image parts which are spatio-temporally adjacent to said given image part of interest;

prioritizing those candidate motion vectors which correspond to neighboring image parts containing more reliable texture information than other neighboring image parts, to obtain a prioritized set of candidate motion vectors; and

furnishing motion data for said given image part of interest in dependence upon said prioritized set of candidate motion vectors.

The examiner relies on the following reference:

Eifrig et al. (Eifrig)	6,026,195	Feb. 15, 2000 (effective filing date Jul. 21, 1997)

Claims 1-10 stand rejected under 35 U.S.C. § 102 as being anticipated by Eifrig.

We refer to the Final Rejection (mailed Feb. 27, 2002) and the Examiner's Answer (mailed Aug. 12, 2002) for a statement of the examiner's position and to the Brief (filed Jun. 27, 2002) and the Reply Brief (filed Aug. 27, 2002) for appellants' position with respect to the claims which stand rejected.

OPINION

The examiner contends (Answer at 3-4) that all claims are anticipated by the disclosure of Eifrig. According to appellants, Eifrig does not show or suggest prioritizing "candidate motion vectors which correspond to neighboring image parts containing more reliable texture information than other neighboring image parts," as recited in representative claim 1. Further, appellants submit that the reference fails to show or suggest prioritizing candidate motion vectors at all. (Brief at 4.)

The examiner responds that "prioritizing" is synonymous with "weighting." In particular, Tables 5 and 6 of Eifrig are deemed to illustrate the weights used in prioritizing candidate motion vectors. The darkened lines of Figures 7 through 9 are submitted to contain more reliable texture information than other neighboring image parts (those in dashed lines). The examiner also relates Eifrig's teachings with respect to entropy and SAD (Sum of Absolute Difference) values to appellants' disclosure. (Answer at 4-5.) Appellants respond, in turn, that the "weighting factors" shown in Tables 5 and 6 of Eifrig are fixed, and not related to the claimed "neighboring image parts containing more reliable texture information than other neighboring image parts." In appellants' interpretation of the reference, the blocks in the reference depicted in bold lines represent selected neighboring macroblocks, with no disclosure of the macroblocks containing more reliable texture information. Further, appellants contend there is no disclosure of how the description of "entropy" or "SAD" may relate to reliability of the texture information. (Reply Brief at 1-3.)

We have studied the reference, with particular emphasis on the sections relied upon by the rejection. However, we agree with appellants that a prima facie case for anticipation has not been established on this record.

Eifrig teaches that texture information may be encoded with an 8x8 Discrete Cosine Transformation (DCT) utilizing overlapped block-motion compensation. Motion compensated texture coding includes motion estimation and compensation (ME/MC), most commonly done by block matching. Eifrig proposes providing differential encoding of the motion vectors of a block or macroblock using motion vectors of neighboring blocks or macroblocks. Col. 1, l. 45 - col. 2, l. 13. Eifrig's system includes a texture coder 240 (Fig. 2) that performs the DCT to provide texture information. Col. 7, ll. 34-40. Motion estimation and motion compensation involve matching a block of a current video frame with a block in a search area of a reference frame (e.g., a predicted block). A motion compensated difference block is formed by subtracting the pixel values of the predicted block from those of the current block. Texture coding is then performed on the difference block. To have small residue values for the difference block, the Sum of Absolute Difference is commonly used to select the motion vector which meets the criteria for the optimum full-pixel motion vector. Col. 7, l. 56 - col. 8, l. 39.

As described in column 12 of the reference, each pixel in an 8x8 luminance predicted block is a weighted sum of three prediction values. Weighting matrices, representative of weights of neighboring motion vectors, are shown in Tables 4 through 6. Figure 7 illustrates a current field mode macroblock with neighboring frame mode

blocks having associated candidate motion vector predictors. The motion vectors are coded differentially by using a spatial neighborhood of motion vectors which are already transmitted. Motion vectors from blocks which are above and/or to the left of a current block are available for processing the current block. The motion vectors are thus "candidate predictors" for differential coding. When a particular 8x8 sub-block of a macroblock is used as a candidate, the macroblock will have three other sub-blocks that are suitable for use in differentially encoding the motion vector components of the current field coded macroblock. Eifrig teaches that, in general, it is desirable to select the sub-block in the particular macroblock which is closest to the upper left-hand portion of the current macroblock as the candidate block, as shown in Figure 7. Col. 13, l. 20 - col. 14, l. 12.

Even assuming that Eifrig discloses prioritizing candidate motion vectors, we do not find any teaching of prioritizing those candidate motion vectors which correspond to neighboring image parts "containing more reliable texture information than other neighboring image parts" as claimed. As appellants indicate, Eifrig's teachings relating to the selection of particular, adjacent macroblocks have not been shown to meet the terms of the instant claims. We thus cannot sustain the rejection of claims 1-10 under 35 U.S.C. § 102 as being anticipated by Eifrig.

CONCLUSION

The rejection of claims 1-10 under 35 U.S.C. § 102 as being anticipated by Eifrig is reversed.

REVERSED

KENNETH W. HAIRSTON Administrative Patent Judge	)
HOWARD B. BLANKENSHIP Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
ALLEN R. MACDONALD Administrative Patent Judge	)

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