

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 15

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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***Ex parte*** DINEI AFONSO FERREIRA FLORENCIO

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Appeal No. 2002-1453  
Application No. 09/160,790

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ON BRIEF

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Before FLEMING, BLANKENSHIP, and SAADAT, ***Administrative Patent Judges.***

FLEMING, ***Administrative Patent Judge.***

#### ***DECISION ON APPEAL***

This is a decision on appeal from the final rejection of claims 1-32. The Examiner has withdrawn the rejection of claims 5-15, 17-19 and 22-32. See page 2 of the Examiner's answer. Thus, claims 1-4, 16, 20 and 21 are properly before us for review.

#### ***Invention***

The invention relates to a method and apparatus for resizing an image frame including field-mode encoding in an information stream decoder, such as a MPEG-like video decoder. See page 1 of Appellant's specification. Figure 2A depicts a frame-encoded 8x8

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block of original pixel samples, where the original block sample is denoted by an "x". Superimposed over the 8x8 pixel block is a 4x4 pixel block comprising a 4:1 resized version of the original 8x8 pixel block, where the resized block sample is denoted by an "\*". A resized pixel block is formed by processing the original 8x8 pixel block according to an 8x8 discrete cosine transform (DCT) to produce an 8x8 DCT coefficient block. See page 4 of Appellant's specification. Figure 2B is a graphical representation of the relative spacing of samples of a mixed frame-mode encoded and field-mode encoded original pixel block and superimposed samples of a pixel block resulting from a 4:1 resizing of the original pixel block. The resized sample associated with the field-mode encoded pixel blocks are not appropriately spaced with respect to the original sample. Moreover, the left and right resized blocks are not properly aligned. These errors are present because the original field-mode encoded pixels within a particular field are vertically separated by two lines, unlike the original frame-mode encoded pixels which are vertically separated by one line. Thus, there is a half picture element (pel) error introduced during the DCT domain resizing process. See pages 4 and 5 of Appellant's specification. Appellant corrects this error by using the flow

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diagram shown in Figure 3. At step 315, it is determined whether there is a mixed mode. If there is no mixed mode, then step 320 performs the IDCT using standard basis functions. If there is a mixed mode, it is determined at step 325 if there is a frame-mode. If there is a frame-mode, then at step 335 the system performs IDCT using modified basis function. By using the flow diagram shown in Figure 3, Appellant's invention avoids the error introduced as discussed above. See pages 8-11 of Appellant's specification.

Appellant's claim 1 is representative of the claimed invention and is reproduced as follows:

1. A method for decoding a compressed image stream including discrete cosine transform (DCT) coefficient blocks representative of pixel blocks having a first resolution, said method comprising the steps of:

resizing a DCT coefficient block, said resized DCT coefficient block being representative of a pixel block having a second resolution;

transforming, according to an inverse discrete cosine transform (IDCT), said resized DCT coefficient block to produce said pixel block having said second resolution, said step of transforming utilizing DCT basis functions adapted in response to an encoding mode of said DCT coefficient block.

#### **Reference**

The reference relied on by the Examiner is as follows:

Yonemitsu et al. (Yonemitsu)	5,485,279	Jan. 16, 1996
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**Rejection at Issue**

Claims 1-4, 16, 20 and 21 stand rejected under 35 U.S.C. § 102 as being anticipated by Yonemitsu.

**OPINION**

With full consideration being given the subject matter on appeal, the Examiner's rejection and the arguments of Appellant and the Examiner, for the reasons stated *infra*, we reverse the Examiner's rejection of claims 1-4, 16, 20 and 21 under 35 U.S.C. § 102.

It is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim. **See *In re King***, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986) and ***Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.***, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

Appellant argues that Yonemitsu fails to teach or suggest a decoding method and apparatus where resizing of an image frame is achieved by transforming, according to an inverse discrete cosine transform (IDCT), said resized DCT coefficient block to produce said pixel block having said second resolution, said step of transforming utilizing DCT basis functions adapted in response to

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an encoding mode of said DCT coefficient block. Appellant also shows that independent claims 1 and 20 positively recite this limitation. See pages 8 and 9 of Appellant's brief. Appellant points out that Yonemitsu merely provides an additional processing function at a decoder for correcting prediction errors produced. The basis functions used within the Yonemitsu process are standard basis functions. Appellant argues that there is no disclosure or suggestion within Yonemitsu of any adaptation of basis functions, much less the claimed adaptation of basis functions in response to an encoding mode of a DCT coefficient block. See pages 10-12 of Appellant's brief.

Upon our review of Yonemitsu, we find that Yonemitsu does teach an IDCT circuit 113. Also, we find that Yonemitsu teaches that the IDCT circuit 113 performs an inverse transform to produce 4x4 pixel data groups. See column 17, line 61 through column 18, line 8. However, we fail to find that Yonemitsu performs IDCT using modified basis functions versus the standard basis functions in response to an encoding mode such as the frame mode. Therefore, we fail to find that Yonemitsu teaches transforming, according to an inverse discrete cosine transform (IDCT), said resized DCT coefficient block to produce said pixel block having said second resolution, said step of transforming

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utilizing DCT basis functions adapted in response to an encoding mode of said DCT coefficient block.

In view of the foregoing, we have not sustained the Examiner's rejection of claims 1-4, 16, 20 and 21 under 35 U.S.C. § 102 as being anticipated by Yonemitsu.

**REVERSED**

MICHAEL R. FLEMING	)	
Administrative Patent Judge	)	
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	)	
	)	BOARD OF PATENT
HOWARD B. BLANKENSHIP	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
MAHSHID D. SAADAT	)	
Administrative Patent Judge	)	

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