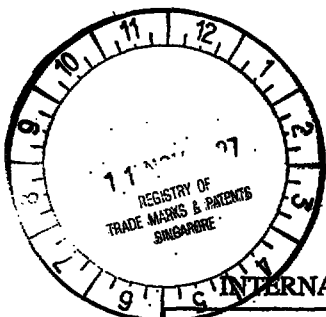




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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G06T 3/40	A1	(11) International Publication Number: WO 96/36939
		(43) International Publication Date: 21 November 1996 (21.11.96)
(21) International Application Number: PCT/US96/01154		(81) Designated States: CA, JP, <u>SG</u> , European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).
(22) International Filing Date: 26 January 1996 (26.01.96)		Published <i>With international search report.</i>
(30) Priority Data: 08/440,631 15 May 1995 (15.05.95) US		
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(54) Title: A SYSTEM AND METHOD FOR SAMPLE RATE CONVERSION OF AN IMAGE USING DISCRETE COSINE TRANSFORMS

(57) Abstract

An image processing system for sample rate conversion of an image signal representing an image of pixels from a first sample rate to a second sample rate includes: an image acquisition device for acquiring the image signal from an image signal source at the first sample rate; a first memory for buffering the input signal; a second memory for storing predetermined discrete cosine transform coefficients; a dot product multiplier for multiplying the image signal retrieved from the first memory times the predetermined coefficients to produce an output signal at the second sampling rate; a third memory for buffering the output signal; control sequencer logic for controlling operation of the image processing system; and an output device for providing a resampled image at the second sampling rate from the output signal. The image processing system facilitates sample rate conversion by segmenting the image into segments of image data points wherein a separate and different offset is determined for each segment. A discrete cosine transform is performed on each segment of image data points to generate corresponding DCT coefficients. Thereafter, resampled image data points are generated by taking a modified IDCT of the DCT coefficients using a modified IDCT basis matrix which is dependent upon a sampling rate conversion ratio and/or an offset.

