

Title (en)  
APPARATUS AND METHOD FOR COMPRESSING VIDEO INFORMATION

Title (de)  
VORRICHTUNG UND VERFAHREN ZUR KOMPRIMIERUNG VON VIDEODATEN

Title (fr)  
SYSTEME ET PROCEDE POUR COMPRIMER DES DONNEES VIDEO

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Application  
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Abstract (en)  
[origin: WO9926418A1] A method and apparatus is disclosed for efficiently encoding data representing a video image, thereby reducing the amount of data that must be transferred to a decoder. The method includes transforming data sets utilizing a tensor product wavelet transform (32) which is capable of transmitting remainders from one subband to another. Collections of subbands, in macro-block form (36) are weighted (42), detected (46) and ranked (52) enabling prioritization of the transformed data. A motion compensation technique (56, 60) is performed on the subband data producing motion vectors (58) and prediction errors (68) which are positionally encoded into bit stream packets for transmittal to the decoder. Subband macro-blocks and subband blocks which are equal to zero are identified as such in the bit stream packets to further reduce the amount of data that must be transferred to the decoder.

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Citation (search report)  
• [XA] NGAN K N ET AL: "VERY LOW BIT RATE VIDEO CODING USING 3D SUBBAND APPROACH", IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, IEEE INC. NEW YORK, US, vol. 4, no. 3, 1 June 1994 (1994-06-01), pages 309 - 316, XP000460762, ISSN: 1051-8215  
• [X] YOON S H ET AL: "A SCALABLE WAVELET VIDEO CODER FOR HYBRID COMMUNICATION CHANNELS", CONFERENCE RECORD OF THE 31ST ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS & COMPUTERS. PACIFIC GROVE, CA., NOV. 2 - 5, 1997, ASILOMAR CONFERENCE ON SIGNALS, SYSTEMS AND COMPUTERS, LOS ALAMITOS, CA.: IEEE, US, vol. 1, 2 November 1997 (1997-11-02), pages 382 - 386, XP000883963, ISBN: 0-8186-8317-1  
• [XA] MARTUCCI S A ET AL: "A ZEROTREE WAVELET VIDEO CODER", IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, IEEE INC. NEW YORK, US, vol. 7, no. 1, 1 February 1997 (1997-02-01), pages 109 - 118, XP000678884, ISSN: 1051-8215  
• [XA] YANG X ET AL: "HIERARCHICAL BACKWARD MOTION COMPENSATION FOR WAVELET VIDEO CODING USING OPTIMIZED INTERPOLATION FILTERS", PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON IMAGE PROCESSING. ICIP 1997. SANTA BARBARA, CA, OCT. 26 - 29, 1997, LOS ALAMITOS, CA: IEEE, US, vol. 1, 26 October 1997 (1997-10-26), pages 85 - 88, XP000792722, ISBN: 0-8186-8184-5  
• [X] SONG M ET AL: "MOTION ESTIMATION IN DCT DOMAIN", 1996 IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS (ICC). CONVERGING TECHNOLOGIES FOR TOMORROW'S APPLICATIONS. DALLAS, JUNE 23 - 27, 1996, IEEE INTERNATIONAL CONFERENCE ON COMMUNICATIONS (ICC), NEW YORK, IEEE, US, vol. 3, 1996, pages 670 - 674, XP000910243, ISBN: 0-7803-3251-2  
• [X] SCOTTON P ET AL: "A LOW COMPLEXITY VIDEO SUBBAND CODER FOR ATM", SIGNAL PROCESSING. IMAGE COMMUNICATION, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 6, no. 5, 1 October 1994 (1994-10-01), pages 421 - 433, XP000466025, ISSN: 0923-5965  
• [A] UHL A: "Digital image compression based on non-stationary and inhomogeneous multiresolution analyses", PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON IMAGE PROCESSING (ICIP) AUSTIN, NOV. 13 - 16, 1994, LOS ALAMITOS, IEEE COMP. SOC. PRESS, US, vol. 3 CONF. 1, 13 November 1994 (1994-11-13), pages 378 - 382, XP010146399, ISBN: 0-8186-6952-7  
• [A] TAN T K ET AL: "A FREQUENCY SCALABLE CODING SCHEME EMPLOYING PYRAMID AND SUBBAND TECHNIQUES", IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS FOR VIDEO TECHNOLOGY, IEEE INC. NEW YORK, US, vol. 4, no. 2, 1 April 1994 (1994-04-01), pages 203 - 207, XP000489693, ISSN: 1051-8215  
• [A] JIN TAE KIM ET AL: "SUBBAND CODING USING HUMAN VISUAL CHARACTERISTICS FOR IMAGE SIGNALS", IEEE JOURNAL ON SELECTED AREAS IN COMMUNICATIONS, IEEE INC. NEW YORK, US, vol. 11, no. 1, 1993, pages 59 - 64, XP000377997, ISSN: 0733-8716  
• See references of WO 9926418A1

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