



The Chinese University of Hong Kong
Non-confidential Abstract of Technology Disclosure

Title:

Conversion between ICT and DCT Coefficients

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Inventor(s):

Professor CHAM Wai Kuen, Department of Electronic Engineering

Patent Status:

- ◆ Chinese Patent Pending
- ◆ Hong Kong Patent Pending

Non-confidential abstract:

In the recent decades, JPEG, MPEG 1 and 2, which employ Discrete Cosine Transform (DCT) for coding, are widely used. This trend keeps growing rapidly as handheld digital image/video cameras become more and more popular in recent years. On the other hand, another transform, Integer Cosine Transform (ICT) which is an integer version of the DCT requiring mainly shift and addition operations, receives growing attention. An order-4 ICT and order-8 ICT $ICT(10,9,6,2;10,4;8)$ were adopted in H.264 and AVS video coding standards respectively. Therefore, it is anticipated that there will be a growing demand for transcoding between video sequences coded using DCT based methods and those coded using ICT based methods. This invention provides a fast and efficient method for the conversion between order-8 DCT and ICT coefficients, which is an essential step in the transcoding operation. The ICT can be $ICT(10,9,6,2;10,5;8)$, $ICT(10,9,6,2;9,3;8)$, $ICT(10,9,6,2;8,4;8)$ and $ICT(10,9,6,2;10,4;8)$.

For further queries, please contact:

Mr Billy Lam
Technology Licensing Coordinator
Tel: (852) 2609 8882
Fax: (852) 2603 5451
Email: billylam@cuhk.edu.hk

Address:
Technology Licensing Office
The Chinese University of Hong Kong
Room 226, Pi Ch'iu Bldg, Shatin, New Territories
Hong Kong SAR