IMPROVED METHOD AND DESIGN FOR TRANSMITTING MULTIMEDIA DATA IN MOBILE WIRELESS APPLICATIONS

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ABSTRACT

The technical requirements for transmitting multimedia data in mobile wireless applications (e.g., cellular, 802.11 and video sensor networks) are significantly different from the requirements in wired PC and broadcast TV applications. For example, in contrast to wired and broadcast applications, mobile wireless applications are typically comprised of low-power devices with limited battery charge times, and low-bandwidth networks that are prone to channel loss. Consequently, popular CODECs such as MPEG and H.263 that were developed for wired and broadcast applications fail to simultaneously address the requirements of mobile wireless applications.

To address these more demanding requirements, researchers at the University of California at Berkeley have developed a multimedia CODEC and architecture that are optimized for mobile wireless applications. Based on the principles of distributed compression, this Berkeley model represents a significant departure from traditional CODEC models.

For mobile wireless multimedia transmission, the Berkeley model has several advantages over existing models. First, in comparison to intra-frame video coding methods, the Berkeley CODEC places low computational complexity on both encoding and decoding. Second, in comparison to full-motion video coding methods, the Berkeley CODEC offers high compression efficiency and can robustly handle packet and even frame drops. And third, in comparison to other distributed CODEC methods, the Berkeley CODEC does not require network feedback. Moreover, the syntax of the Berkeley encoder is rich enough to be easily trans-coded into the bit-streams of popular encoders such as MPEG.

APPLICATIONS

In general, real-time multimedia transmission over mobile wireless networks.

More specifically, video over standard cellular, 802.11 and video sensor networks.

ADVANTAGES

Multimedia CODEC method and network architecture that are optimized for low-power wireless devices with limited battery charge times, and low-bandwidth wireless networks with high packet drop rates

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	7,400,774	07/15/2008	2003-008

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OTHER INFORMATION

KEYWORDS

communications, wireless: system, wireless: method, wireless, networking, software

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