

Optimal Spatial Sub-channel Resources Allocation Mechanism for Sustainable Bit Rate Wireless Conduits

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BACKGROUND

The latest video compression standard (MPEG-4) has moved the wireless industry one step closer to the world of high quality multimedia services. Commercial wireless MPEG-4 video codec systems can already support up to Level 3 of the MPEG Simple Visual Profile. However, the issue of how to effectively transport such high quality multimedia streams across fluctuating radio channels remains a challenge because highly compressed data is very susceptible to low quality fluctuating channel conditions. Advancement in adaptive antenna array technologies such as BLAST, makes it possible to support sustainable bit rate (SBR) conduits in a practical manner. However the use of multiple antennas introduces another dimension of variation - the diversity or different fading levels among sub-channels.

TECHNOLOGY DESCRIPTION

University researchers have developed an optimal algorithm that optimizes the transmitting power and bits-per-symbol allocation to each of the transmitting antennas in a multiple-input-multiple-output wireless system, so that an overall constant bit rate can be maintained with minimal power consumption. A Leaky Bucket-based power budget algorithm is also devised to smooth out total power allocation among channel burst periods.

APPLICATIONS

In a wireless LAN environment, the algorithm can be used to build a multiple antenna system that not only increases bandwidth but also maintain a constant bit rate pipe. The scheme can be implemented in other wireless networks such as 3G.

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	7,430,190	09/30/2008	2004-111

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OTHER INFORMATION

KEYWORDS

antenna system, 3G

CATEGORIZED AS

- » **Communications**
 - » Networking
 - » Wireless
- » **Computer**
 - » Other
 - » Software

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