Title: MULTI CHANNEL THROUGHPUT ENHANCEMENT

Abstract: A wireless access point includes an ability to transmit signals over a plurality of channels and receive signals over the plurality of channels and have means for synchronizing transmission on a first channel to a first station and transmission on a second channel to a second station, such that acknowledgements are not expected from one of the first and second stations while transmitting frames to one or more of the first and second stations, means for transmitting over at least two of the plurality of channels simultaneously, means for receiving over at least two of the plurality of channels simultaneously. The number of channels might differ from implementation to implementation, but allows for simultaneous communication over the multiple channels with synchronization such that transmission on a channel is done while not expecting acknowledgements on any of the other channels. Synchronization can be done by ending transmission on a first channel and a second channel at the same time or within a predetermined short time period and/or organizing frames to be of similar size and beginning transmission at approximately the same time, so that transmissions end at the same time or within a predetermined short time period. Organizing frames to be of similar size can be done by breaking up packets as needed to get similar sized frames, using an 802.11 fragmentation facility, padding short packets as needed to get similar sized frames, and/or other methods. The access point might use NAV intervals and CTS-to-self signals to clear channels.
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:
15 June 2006
### INTERNATIONAL SEARCH REPORT

**International application No.**
PCT/US05/11023

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC:  
H04J 3/06; H04B 7/00, 7/005

USPC:  
370/278, 310.350, 503

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

U.S.: 370/276, 278, 300, 310, 310.1, 310.2,350, 503

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

IEEE

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category *</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 6,487, 264 B1 (ALLEY et al) 26 November 2002, abstract, Column 3, Lines 1-67 and Figure 1</td>
<td>1</td>
</tr>
<tr>
<td>X.P</td>
<td>US 2004/0264475 A1 (KOWALSKI) 30 December 2004, Figure 1, abstract, Paragraph 36</td>
<td>1 and 11-17</td>
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<td>A</td>
<td>US 2005/0243849 A1 (WENTINK) 03 November 2005, abstract, Paragraph 27, Figures 8A and 8B</td>
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[ ] Further documents are listed in the continuation of Box C.  [ ] See patent family annex.

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**Date of the actual completion of the international search**
20 March 2006 (20.03.2006)

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