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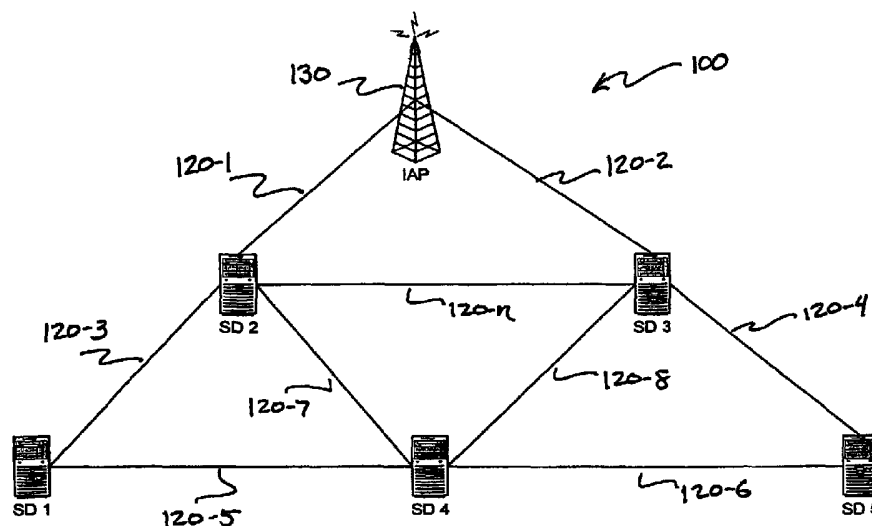
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[Continued on next page]

(54) Title: SYSTEM AND METHOD TO IMPROVE THE OVERALL PERFORMANCE OF A WIRELESS COMMUNICATION NETWORK



An Example network

(57) Abstract: A system and method for a media access control (MAC) scheduling algorithm having a distributed, self-coordinating approach to provide use fairness and service differentiation in an ad hoc network (100) by using control RTS/CTS messages carrying node status information. A local scheduling algorithm uses the overheard RTS/CTS information with attributes specifying nodes' (102, 106, 107) status to maximize the awareness of the neighborhood status for a multi-channel system where data and ACK messages are transmitted through different data channels. If the system uses a single channel, the corresponding information may be carried by using DATA or ACK messages. The algorithm measures the offered load, carried load, and backlogged load in the neighborhood to adjust the channel access timer to provide use fairness among different nodes, different links, and different streams.



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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04J 3/16; H04L 12/28, 12/413

US CL : 370/230,447

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. : 370/230.1,232,235-238,248,252,254,313,315,315,328,329,349,356,389,390,392,400,401,442-445,447,477

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	US 6,404,756 B1 (WHITEHILL et al) 11 June 2002 (11.06.2002), column 1, lines 25-51; column 2, lines 25-55; columns 6-7, lines 30-8; column 17, lines 13-16 and 23-38	1-7
A	US 2003/0067892 A1 (BEYER et al) 10 April 2003 (10.04.2003), entire document	1-7
A	US 2003/0012167 A1 (BENVENISTE) 16 January 2003 (16.01.2003), entire document	1-7
A	US 2002/0172186 A1 (LARSSON) 21 November 2002 (21.11.2002), entire document	1-7
A	US 6,556,582 B1 (REDI) 29 April 2003 (29.04.2003), entire document	1-7
A	US 6,363,062 B1 (AARONSON et al) 26 March 2002 (26.03.2002), entire document	1-7
A	US 5,844,905 A (MCKAY et al) 1 December 1998 (01.12.1998), entire document	1-7
A, P	US 2004/0100929 A1 (GARCIA-LUNA-ACEVES) 27 May 2004 (27.05.2004), entire document	1-7
A, P	US 2004/0057409 A1 (KENNEDY) 25 March 2004 (25.05.2004), entire document	1-7



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"P" document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family

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INTERNATIONAL SEARCH REPORTInternational application No.
PCT/US04/18123**C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, P	US 6,611,521 B1 (MCKAY et al) 26 August 2003 (26.08.2003), entire document	1-7