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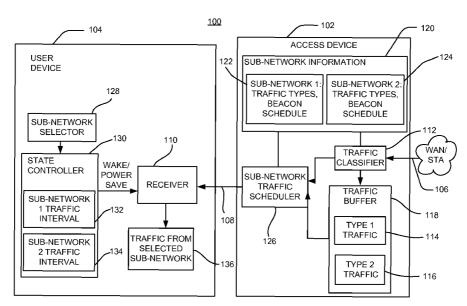
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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) Title: STANDBY TIME IMPROVEMENTS USING SUB-NETWORKS



(57) Abstract: Broadcast or multicast traffic is classified into different types of traffic such that different types of traffic are transmitted over different sub-networks. In addition, different transmission schedules may be associated with each of the different sub-networks. A device may thus be configured to receive only a selected portion of the different types of traffic by only waking from a power save mode at the intervals at which the corresponding sub-network sends the traffic. The standby time of the wireless station may thus be improved because the wireless station may awaken less frequently and for shorter periods of time. Different sub-networks carrying different types of broadcast and multicast traffic may be implemented in an 802.11-based system. For example, a single access point may define multiple basic service set identifiers for a single wireless channel.



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INTERNATIONAL SEARCH REPORT

International application No PCT/US2007/072681

A. CLASSIFICATION OF SUBJECT MATTER INV. H04L12/28 H04L1 H04L12/56 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) H04L 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 practical, search terms used) EPO-Internal, WPI Data, COMPENDEX, INSPEC C. DOCUMENTS CONSIDERED TO BE RELEVANT Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No. US 2004/266427 A1 (KUROKAWA HIDEKI [JP]) 1 - 89χ 30 December 2004 (2004-12-30) paragraph [0026] - paragraph [0061] paragraph [0091] - paragraph [0107] paragraph [0120] - paragraph [0155] EP 1 511 335 A (SAMSUNG ELECTRONICS CO LTD X 1 - 89[KR]) 2 March 2005 (2005-03-02) abstract paragraph [0040] - paragraph [0045] paragraph [0070] - paragraph [0087] US 2004/029586 A1 (LAROIA RAJIV [US] ET 1 - 89Α AL) 12 February 2004 (2004-02-12) paragraph [0009] - paragraph [0012] paragraph [0032] - paragraph [0036] paragraph [0080] - paragraph [0094] X Further documents are listed in the continuation of Box C. See patent family annex Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the "A" document defining the general state of the art which is not considered to be of particular relevance invention "E" earlier document but published on or after the international "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-ments, such combination being obvious to a person skilled document referring to an oral disclosure, use, exhibition or other means document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 17 January 2008 31/01/2008 Authorized officer Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, FRANTZESKAKIS, D Fax: (+31-70) 340-3016

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2007/072681

		PCT/US2007/072681
C(Continua	tion). DOCUMENTS CONSIDERED TO BE RELEVANT	
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2005/117530 A1 (ABRAHAM SANTOSH P [US] ET AL ABRAHAM SANTOSH P [US] ET AL) 2 June 2005 (2005-06-02) paragraph [0024] - paragraph [0031] paragraph [0060] - paragraph [0070]	1-89
A	WO 01/69859 A (ERICSSON TELEFON AB L M [SE]) 20 September 2001 (2001-09-20) page 6, line 13 - page 11, line 10 page 15, line 3 - page 16, line 12	1-89
A		1-89

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2007/072681

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US_2004266427	1 30-12-2004	AU 2004202850 A1 CN 1585366 A JP 2005020626 A	20-01-2005 23-02-2005 20-01-2005
EP 1511335	02-03-2005	CN 1592439 A JP 3967344 B2 JP 2005080287 A US 2005049013 A1	09-03-2005 29-08-2007 24-03-2005 03-03-2005
US 2004029586	12-02-2004	AU 2003256883 A1 AU 2003265388 A1 CA 2534849 A1 CA 2534851 A1 CN 1685745 A EP 1529405 A2 EP 1535482 A1 KR 20050059057 A WO 2004015877 A2 WO 2004016007 A1 US 2004106412 A1	25-02-2004 25-02-2004 19-02-2004 19-02-2005 11-05-2005 01-06-2005 17-06-2005 19-02-2004 19-02-2004 03-06-2004
US 2005117530	1 02-06-2005	NONE	
WO 0169859	20-09-2001	AU 4293701 A	24-09-2001