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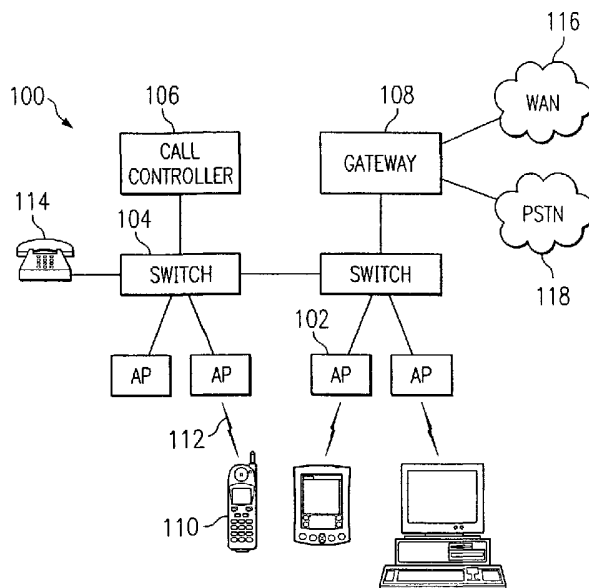
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

Published:

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[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR SUPPORTING USER MOBILITY IN A COMMUNICATION SYSTEM



(57) Abstract: A method includes identifying a plurality of communication channels at a wireless device and classifying each of the communication channels into one of a plurality of groups. The method also includes scanning the communication channels in the groups. The communication channels in at least one of the groups are scanned at a different frequency than the communication channels in at least one other of the groups. In addition, the method includes updating one or more of the groups based on the scans.

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— *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.*

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# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 03/34143

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 H04L12/28

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)  
IPC 7 H04L H04Q

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

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y  A	US 5 815 811 A (HEIMAN FREDERIC ET AL) 29 September 1998 (1998-09-29) abstract; claim 15; figures 2a-3 column 5, line 40 - column 6, line 50 *IDEM*	1, 14, 23, 33  2-13, 15-22, 24-32
Y	----- EP 0 817 521 A (LUCENT TECHNOLOGIES INC) 7 January 1998 (1998-01-07) abstract; claim 13; figures 1-4 page 5, line 13 - line 55 -----  -/--	1, 14, 23, 33

Further documents are listed in the continuation of box C.       Patent family members are listed in annex.

° Special categories of cited documents :

<p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* 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)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p>	<p>*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 invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*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 documents, such combination being obvious to a person skilled in the art.</p> <p>*&amp;* document member of the same patent family</p>
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Date of the actual completion of the international search  <b>7 May 2004</b>	Date of mailing of the international search report  <b>24/05/2004</b>
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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, Fax: (+31-70) 340-3016	Authorized officer  <b>Danielidis, S</b>
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## INTERNATIONAL SEARCH REPORT

International Application No

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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>"INFORMATION TECHNOLOGY-TELECOMMUNICATIONS AND INFORMATION EXCHANGE BETWEEN SYSTEMS-LOCAL AND METROPOLITAN AREA NETWORKS-SPECIFIC REQUIREMENTS- PART 11: WIRELESS LAN MEDIUM ACCESS CONTROL (MAC) AND PHYSICAL LAYER (PHY) SPECIFICATIONS" ANSI/IEEE STD 802.11, XX, XX, 1999, pages I-XIV,1, XP002250755 page 101, paragraph 10.3.2.1.1 - page 103, paragraph 10.3.2.2.4 page 125, paragraph 11.1.3 - page 127, paragraph 11.1.3.3</p> <p>-----</p>	1-33
A	<p>WO 94/22258 A (PHONEMATE INC) 29 September 1994 (1994-09-29) abstract; figures 4-6 page 29, line 3 - line 25 page 32, line 18 - page 33, line 12</p> <p>-----</p>	1-33
A	<p>EP 1 017 197 A (SYMBOL TECHNOLOGIES INC) 5 July 2000 (2000-07-05) abstract; figure 5 column 8, line 5 - line 54</p> <p>-----</p>	1,14,23, 33
A	<p>EP 0 851 631 A (LUCENT TECHNOLOGIES INC) 1 July 1998 (1998-07-01)  abstract; figures 1,2,4 column 5, line 57 - column 6, line 5 column 7, line 30 - line 43</p> <p>-----</p>	1,11,12, 20,21, 26,27
A	<p>EP 1 241 838 A (MICROSOFT CORP) 18 September 2002 (2002-09-18) abstract; claim 4; figure 6 page 7, line 56 - page 8, line 8</p> <p>-----</p>	1,10,22, 31

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/34143

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5815811	A	29-09-1998	US 5528621 A	18-06-1996
			US 5280498 A	18-01-1994
			US 5142550 A	25-08-1992
			US 5029183 A	02-07-1991
			CA 2186923 A1	28-04-1997
			EP 0781005 A1	25-06-1997
			JP 9215044 A	15-08-1997
			US 6580700 B1	17-06-2003
			US 6002918 A	14-12-1999
			AT 227914 T	15-11-2002
			AU 667264 B2	14-03-1996
			AU 5931994 A	13-10-1994
			CA 2119335 A1	09-10-1994
			DE 69431690 D1	19-12-2002
			DE 69431690 T2	21-08-2003
			DK 619663 T3	10-02-2003
			EP 0619663 A2	12-10-1994
			ES 2184747 T3	16-04-2003
			JP 7099500 A	11-04-1995
			AT 178748 T	15-04-1999
			AU 657149 B2	02-03-1995
			AU 2089992 A	03-06-1993
			CA 2072345 A1	28-05-1993
			DE 69228856 D1	12-05-1999
			DE 69228856 T2	11-11-1999
			EP 0544337 A1	02-06-1993
			ES 2130147 T3	01-07-1999
			JP 5244158 A	21-09-1993
			US 5479441 A	26-12-1995
			US 5668803 A	16-09-1997
			AT 168845 T	15-08-1998
			CA 2051212 A1	29-06-1992
			CA 2355192 A1	29-06-1992
			DE 69129838 D1	27-08-1998
			DE 69129838 T2	25-03-1999
			EP 0496986 A2	05-08-1992
			EP 0797332 A2	24-09-1997
			ES 2118733 T3	01-10-1998
			JP 3429782 B2	22-07-2003
			JP 4304049 A	27-10-1992
			US 5401944 A	28-03-1995
			AU 627333 B2	20-08-1992
			AU 5808090 A	03-01-1991
			CA 1310370 C	17-11-1992
			DE 69030936 D1	24-07-1997
			DE 69030936 T2	29-01-1998
			EP 0405074 A2	02-01-1991
			EP 0770962 A2	02-05-1997
			JP 2506481 B2	12-06-1996
			JP 3038133 A	19-02-1991
EP 0817521	A	07-01-1998	US 6108321 A	22-08-2000
			CA 2202807 A1	28-12-1997
			EP 0817521 A2	07-01-1998
			JP 3207135 B2	10-09-2001
			JP 10079977 A	24-03-1998
WO 9422258	A	29-09-1994	US 5197093 A	23-03-1993

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/34143

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9422258	A	US 5418839 A	23-05-1995
		WO 9422258 A1	29-09-1994
		AU 3933693 A	11-10-1994
-----			
EP 1017197	A	05-07-2000	
		US 6580700 B1	17-06-2003
		AU 767841 B2	27-11-2003
		AU 6530599 A	06-07-2000
		CN 1271902 A ,C	01-11-2000
		EP 1017197 A2	05-07-2000
JP 2000209234 A	28-07-2000		
-----			
EP 0851631	A	01-07-1998	
		US 5991287 A	23-11-1999
		CA 2221231 A1	30-06-1998
		EP 0851631 A2	01-07-1998
JP 10210053 A	07-08-1998		
-----			
EP 1241838	A	18-09-2002	
		US 2002176366 A1	28-11-2002
		CN 1375772 A	23-10-2002
		EP 1241838 A2	18-09-2002
JP 2002344458 A	29-11-2002		
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