

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 January 2006 (12.01.2006)

PCT

(10) International Publication Number
WO 2006/004628 A3

(51) International Patent Classification:

- G01S 3/02 (2006.01) H04B 7/15 (2006.01)
- G06F 15/00 (2006.01) H04B 7/185 (2006.01)
- G08B 5/22 (2006.01) H04B 7/208 (2006.01)
- G08B 23/00 (2006.01) H04B 7/212 (2006.01)
- G10L 13/06 (2006.01) H04B 7/216 (2006.01)
- H04B 1/02 (2006.01) H04B 17/00 (2006.01)
- H04B 1/69 (2006.01) H04B 17/02 (2006.01)
- H04B 7/00 (2006.01) H03D 1/04 (2006.01)
- H04B 7/02 (2006.01) H04H 1/00 (2006.01)
- H04B 7/14 (2006.01) H04J 1/00 (2006.01)

[Continued on next page]

(21) International Application Number:

PCT/US2005/022660

(22) International Filing Date: 28 June 2005 (28.06.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

10/881,550 30 June 2004 (30.06.2004) US

(71) Applicant (for all designated States except US): **SYMBOL TECHNOLOGIES, INC.** [US/US]; One Symbol Plaza, Holtsville, NY 11742 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **VESUNA, Sarosh** [US/US]; 300 Avalon Drive, Los Altos, CA 94022 (US).

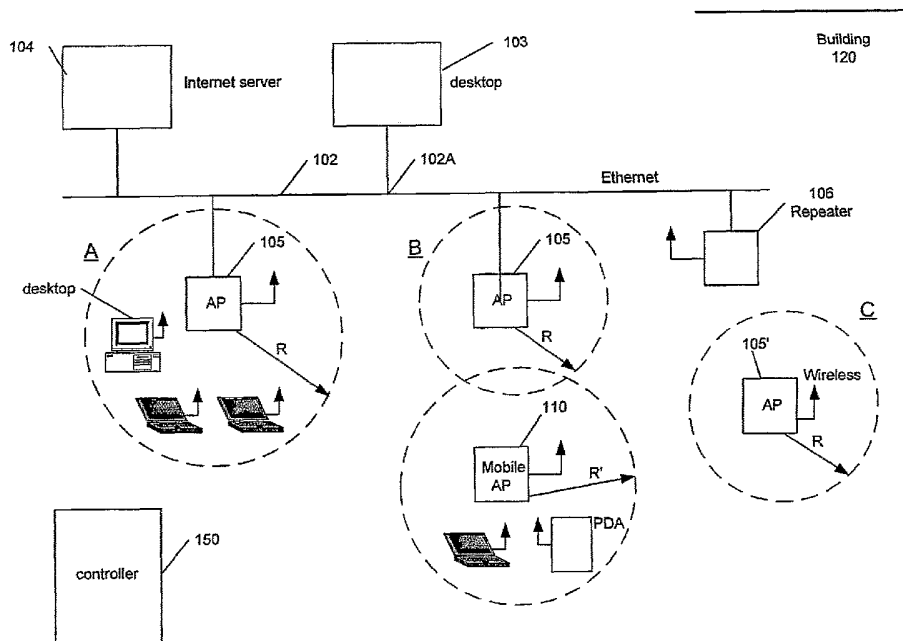
(74) Agents: **LORENZ, Timothy, J.** et al.; INGRASSIA, FISHER & LORENZ, 7150 E. Camelback Road, Suite 325, Scottsdale, Arizona 85251 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

[Continued on next page]

(54) Title: RECONFIGURABLE ARRAYS OF WIRELESS ACCESS POINTS



(57) Abstract: A wireless communications network includes a reconfigurable array of access points for linking wireless devices in an infrastructure mode. One or more of the access points are mobile. The mobile access points in the network can be repositioned to change the geographic distribution of the bandwidth coverage provided by the wireless network. The mobile access points may be repositioned to redistribute available network bandwidth heterogeneously according to the demand for bandwidth in local areas and to meet quality of service standards.

WO 2006/004628 A3



SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(51) **International Patent Classification [Continued]:**

<i>H04J</i> 3/00 (2006.01)	<i>H04L</i> 27/04 (2006.01)
<i>H04J</i> 3/14 (2006.01)	<i>H04M</i> 1/66 (2006.01)
<i>H04J</i> 3/16 (2006.01)	<i>H04M</i> 3/00 (2006.01)
<i>H04J</i> 3/24 (2006.01)	<i>H04M</i> 11/00 (2006.01)
<i>H04J</i> 3/26 (2006.01)	<i>H04M</i> 11/04 (2006.01)
<i>H04L</i> 7/00 (2006.01)	<i>H04Q</i> 7/00 (2006.01)
<i>H04L</i> 12/26 (2006.01)	<i>H04Q</i> 7/20 (2006.01)
<i>H04L</i> 12/28 (2006.01)	<i>H04Q</i> 7/24 (2006.01)
<i>H04L</i> 12/56 (2006.01)	<i>H04Q</i> 7/28 (2006.01)
<i>H04L</i> 12/66 (2006.01)	

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:

21 December 2006

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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/22660

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: Please See Continuation Sheet

USPC: Please See Continuation Sheet
 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. : 340/539.12,573.4,825.49;342/357.08,357.12,450,453-54,457,463,365;370/229,230.1,231,248,252,254-55,294,299,310,310.2,312.1,315-16,320,328-29,331-32,334-35,338,342-349,351-53,356,395.5,395.52,400-402,432,437;375/133,267,299,346-47,354;455/11.1,12.1,13.1,16,41,2,67,11,67,16,101,137,404,1,406,410-

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.
Y	US 6,674,403 B2 (GRAY et al) 06 January 2004 (06.01.2004), Abstract, Figs 1 and 3B, col. 1, lines 57-67, col. 2, lines 1-8, col. 6, lines 25-30, col. 10, lines 25-34, col. 11, lines 34-54.	1-20
Y	US 6,658,325 B2 (ZWEIG) 02 December 2003 (02.12.2003), Abstract, Fig. 1, col. 7, lines 61-67, col. 8, lines 1-8.	1-20
Y	US 5,225,863 A (WEIR-JONES) 06 July 1993 (06.07.1993), Figs. 1-5, col. 1, lines 1-2, 15-30.	7, 10-12
A	US 5,448,290 A (VANZEBELAND) 05 September 1995 (05.09.1995), see entire document.	1-20
A, E	US 7,053,826 B1 (MCBURNEY et al) 30 May 2006 (30.05.2006), see entire document.	1-20
A, E	US 7,072,323B2 (ROBERTS et al) 04 July 2006 (04.07.2006), see entire document.	1-20
A	US 6,529,164 B1 (CARTER) 04 March 2003 (04.03.2003), see entire document.	1-20

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"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
"O"	document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 28 June 2006 (28.06.2006)	Date of mailing of the international search report 10 OCT 2006
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Mark A. Mais Telephone No. 571-272-3138

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/22660

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, E	US 7,038,584 B2 (CARTER) 02 May 2006 (02.05.2006), see entire document.	1-20
A, E	US 6,920,319 B2 (KNUTSSON et al) 19 July 2005 (19.07.2005), see entire document.	1-20
A	US 6,590,884 B1 (PANASIK) 08 July 2003 (08.07.2003), see entire document.	1-20
A, P	US 6,771,609 B1 (GUDAT et al) 03 August 2004 (03.08.2004), see entire document.	1-20
A, E	US 7,042,867 B2 (WHITEHILL et al) 09 May 2006 (09.05.2006), see entire document.	1-20

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US05/22660

Continuation of IPC:

G01S 3/02(2006.01);**G04L 19/14**;**G06F 15/00**(2006.01);**G08B 5/22**(2006.01),**23/00**(2006.01);**G10L 13/06**(2006.01);**H04B 1/02**(2006.01),**1/69**(2006.01),**7/00**(2006.01),**7/02**(2006.01),**7/14**(2006.01),**7/15**(2006.01),**7/185**(2006.01),**7/208**(2006.01),**7/212**(2006.01),**7/216**(2006.01),**17/00**(2006.01),**17/02**(2006.01);**H03D 1/04**(2006.01),**7/10**(2006.01);**H04H 1/00**(2006.01);**H04J 1/00**(2006.01),**3/00**(2006.01),**3/14**(2006.01),**3/16**(2006.01),**3/24**(2006.01),**3/26**(2006.01),**5/14,5/22**;**H04L 3/06,7/00**(2006.01),**12/26**(2006.01),**12/28**(2006.01),**12/56**(2006.01),**12/66**(2006.01),**27/04**(2006.01);**H04M 1/66**(2006.01),**3/00**(2006.01),**11/00**(2006.01),**11/04**(2006.01);**H04Q 7/00**(2006.01),**7/20**(2006.01),**7/24**(2006.01),**7/28**(2006.01)

Continuation of USPC:

340/539.12,573.4,825.49;342/357.08,357.12,450,453-54,457,463,365;370/229,230.1,231,248,252,254-55,294,299,310,310.2,312.1,315-16,320,328-29,331-32,334-35,338,342-349,351-53,356,395.5,395.52,400-402,432,437;375/133,267,299,346-47,354;455/11.1,12.1,13.1,16,41.2,67.11,67.16,101,137,404.1,406,410-11,420,422,427,431,432.1,436,435.1,446,447,455,517,522;702/179;704/222,270.1