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(71) Applicant (for all designated States except US): **IWICS INC** [US/US]; 19125 North Creek Parkway, Suite 120, Bothell, Washington 98011 (US).

(71) Applicant (for MW only): **DONALD, Heather June** [ZA/ZA]; Building No.13, Highgrove Office Park Oak Avenue Centurion, 0001 Pretoria (ZA).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **LARSEN, James David** [US/US]; 221 11 55th Avenue SE, Woodinville, Washington 98072-8370 (US).

(74) Agents: **SPOOR & FISHER** et al; P O Box 454, 0001 Pretoria (ZA).

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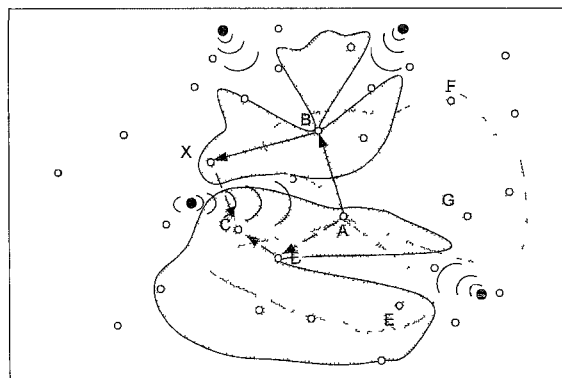
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(54) Title: ADAPTIVE ANTENNA SYSTEM FOR DIVERSITY AND INTERFERENCE AVOIDANCE IN A MULTI-STATION NETWORK



(57) Abstract: The invention provides a method of operating a communication network and a network itself. The network comprises a plurality of wireless stations, each station being able to transmit and receive data so that the network can transmit a message comprising a plurality of data packets from an originating station to a destination station via at least one intermediate station. At least some of the stations have a controllable antenna system operable to direct a null selectively. The method includes selecting, at each station, one or more probing channels for the transmission of probe signals to other stations. At stations having a controllable antenna system, the presence of interference on said one or more probing channels is detected, and one or more nulls are selectively directed towards the source or sources of the interference. Typically, a null is directed towards a source of interference where the level of the interference exceeds a predetermined level. Each station transmits neighbor gathering probe signals on the selected probing channel or channels, and other stations which receive the neighbor gathering probe signals from a probing station respond directly or indirectly to thereby indicate to the probing station their availability as destination or intermediate neighbor stations. The presence of the nulls affects the ability of other stations to receive the neighbor gathering probe signals, and the resulting variations in the connectivity between stations provides variations in the availability of neighbor stations to each station.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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According to International Patent Classification (IPC) or to both national classification and IPC

B. REIDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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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

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Y	GB 2 349 045 A (FUJITSU LTD [JP]) 18 October 2000 (2000-10-18) abstract page 1, line 18 - page 3, line 5 page 4, line 7 - page 5, line 21 page 20, line 26 - page 21, line 13 claims 1,8 ----- -/--	1-11

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

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'A' document defining the general state of the art which is not considered to be of particular relevance 'E' earlier document but published on or after the international filing date "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) "O" document referring to an oral disclosure, use, exhibition or other means 'P*' document published prior to the international filing date but later than the priority date claimed	'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 '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 '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. '&' document member of the same patent family
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Date of the actual completion of the international search 28 May 2008	Date of mailing of the international search report 05/06/2008
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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 Lombardi , Giuseppe
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 2002/136179 A1 (AOYAMA TAKAHISA [JP] ET AL) 26 September 2002 (2002-09-26) abstract paragraph [0051] - paragraph [0056] paragraph [0070] -----	1-11

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