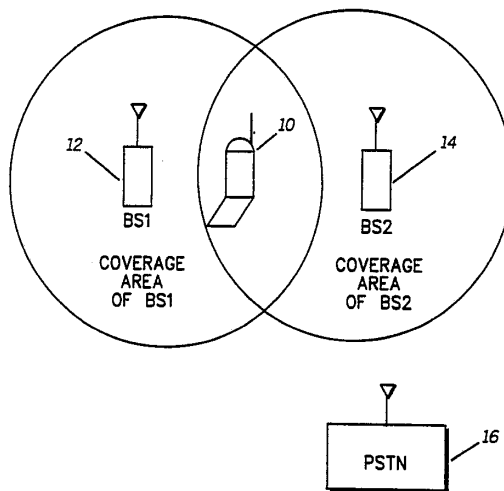




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁵ : H04Q 7/00</p>	<p>A1</p>	<p>(11) International Publication Number: WO 92/21214 (43) International Publication Date: 26 November 1992 (26.11.92)</p>
<p>(21) International Application Number: PCT/US92/02536 (22) International Filing Date: 30 March 1992 (30.03.92) (30) Priority data: 703,428 17 May 1991 (17.05.91) US (71) Applicant: MOTOROLA, INC. [US/US]; 1303 E. Algonquin Road, Schaumburg, IL 60196 (US). (72) Inventors: PATSIOKAS, Stelios, J. ; 9324 N.W. 18th Street, Plantation, FL 33322 (US). D'AMICO, Thomas, V. ; 2707 North Ocean Boulevard #302, Boca Raton, FL 33431 (US). SUTER, Charles, D. ; 4408 Main Street, Lake Worth, FL 33461 (US). POMBO, Raul, A. ; 8361-D Trent Court, Boca Raton, FL 33433 (US).</p>		<p>(74) Agents: NICHOLS, Daniel, K. et al.; Motorola, Inc., Intellectual Property Department, 8000 West Sunrise Boulevard, Ft. Lauderdale, FL 33322 (US). (81) Designated States: AT (European patent), AU, BE (European patent), BR, CA, CH (European patent), DE, DE (European patent), DK (European patent), ES (European patent), FI, FR (European patent), GB (European patent), GR (European patent), HU, IT (European patent), KR, LU (European patent), MC (European patent), NL (European patent), NO, SE (European patent). Published <i>With international search report.</i></p>

(54) Title: CHANNEL ACQUISITION METHOD AND APPARATUS FOR A COMMUNICATION SYSTEM



(57) Abstract

A method and apparatus whereby a communication unit (10) transmits a communication channel request and the nearest base site (12) makes the communication channel grant or allocation. A base site receives the channel request signal, measures the received signal strength (RSSI) level of the received signal, and if that level is above a threshold level, a communication channel is allocated to the requesting communication unit, thus establishing a communication link. If the channel request signal does not have an RSSI level above the threshold, the base site delays the grant of a communication channel for a period inversely proportional to the measured RSSI level to allow other base sites the opportunity to grant a communication channel to the requesting communication unit. If the base site determines that another base site has granted a communication channel to the requesting

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FI	Finland	MI	Mali
AU	Australia	FR	France	MN	Mongolia
BB	Barbados	GA	Gabon	MR	Mauritania
BE	Belgium	GB	United Kingdom	MW	Malawi
BF	Burkina Faso	GN	Guinea	NL	Netherlands
BG	Bulgaria	GR	Greece	NO	Norway
BJ	Benin	HU	Hungary	PL	Poland
BR	Brazil	IE	Ireland	RO	Romania
CA	Canada	IT	Italy	RU	Russian Federation
CF	Central African Republic	JP	Japan	SD	Sudan
CG	Congo	KP	Democratic People's Republic of Korea	SE	Sweden
CH	Switzerland	KR	Republic of Korea	SN	Senegal
CI	Côte d'Ivoire	LI	Liechtenstein	SU	Soviet Union
CM	Cameroon	LK	Sri Lanka	TD	Chad
CS	Czechoslovakia	LU	Luxembourg	TG	Togo
DE	Germany	MC	Monaco	US	United States of America
DK	Denmark	MG	Madagascar		
ES	Spain				

5

10 **CHANNEL ACQUISITION METHOD AND APPARATUS
 FOR A COMMUNICATION SYSTEM**

Technical Field

15 This invention relates generally to communication systems
 and more specifically to radio telephone communication systems .

Background

 Radio telephone communication systems (such as second
20 generation cordless telephone, or Digital European Cordless
 Telephone) comprise a plurality of base sites (also known as
 telepoints) and a plurality of radio telephones (also known as
 handsets). Taking second generation cordless telephone (CT2)
 as an example, the users of the CT2 radio telephones
25 communicate with users of other radio telephones or subscribers
 in a public switched telephone network (PSTN) via the base
 points. A large number of base points is desirable in certain
 areas (such as shopping malls) where many persons are likely to
 place radio telephone calls because that eliminates gaps in
30 coverage by the base site network. However, these base sites
 are not synchronized with each other. When a radio telephone
 user wishes to place a call, he or she causes the radio telephone
 unit to transmit a channel request signal. Since each base site is
 monitoring the channels of the CT2 system independently, the
35 base site that grants the channel request is not necessarily the
 one closest to the radio telephone unit transmitting the channel

request signal. That may be a problem because the user may move out of range of the base site, thus causing the communication link to be dropped. On the other hand, if the nearest base station had made the channel grant, the radio telephone user would have been able to continue the communication while moving in a greater area. Accordingly, a need exists for a method and apparatus for acquiring a communication channel that overcomes the above problem.

10 Summary of the Invention

Briefly, according to the invention, a method and apparatus are provided whereby a communication unit transmits a communication channel request and the nearest base site makes the communication channel grant. A base site receives the channel request signal, measures the received signal strength (RSS) level of the received signal, and if that level is above a first threshold level, a communication channel is granted to the requesting unit, thus establishing a communication link. Then, the base site maintains the communication link as long as RSSI level does not drop below a second threshold level that is substantially lower than the first threshold level.

Brief Description of the Drawings

FIG. 1 is a simplified block diagram of a communication system in accordance with the invention.

FIG. 2 is a simplified block diagram of a base site in accordance with the invention.

FIG. 3 is a flow chart of a channel acquisition method in accordance with the invention.

FIG. 4 is a flow chart of another channel acquisition method in accordance with the invention.

Detailed Description of the Preferred Embodiment

Referring to FIG. 1, there is shown a simplified block diagram of a communication system in accordance with the invention. A communication unit 10 (preferably, a radio

telephone) operates in a CT2 communication system that comprises at least first and second base sites, 12 and 14, respectively. The system may also comprise several other base sites, communication units, and a public switched telephone network (PSTN) 16. The communication unit 10 is closer to the first base site 12 than to the second base site 14. When the user of the communication unit 10 wishes to make a call, he or she causes the communication unit to transmit a channel request signal (which includes the unit's identification number) requesting a communication channel. The communication unit 10 is within the coverage areas (i.e., ranges) of both the first base site 12 and the second base site 14. Thus, in a conventional CT2 system, either of the base sites could grant a communication channel to the communication device, establishing a communication link. In the event that the second base site 14 is the first to receive the channel request signal, it would grant the channel to the communication unit 10. That would create a problem for the user of the communication unit 10 because if the user moves any further away from the second base site 14, the unit would move out of the range of the second base site 14 and consequently the communication link would be lost. However, in accordance with the invention the first base station 12 would be the one granting the communication channel to the communication unit 10, thus solving the problem that would have been caused by a more distant base site granting the communication channel.

Referring to Figure 2, a public base site (or wireless phonebooth) 20, in accordance with the invention, is shown in block diagram form. Each of the components of the base site 20 represented by a block is conventional. The base site 20, which is coupled to a network controller 38, comprises a radio transceiver 30, an RSSI detector 32, and a memory 36 for storing information (including the identification numbers corresponding to communication units sending channel request signals, and memory templates containing information relating to subscribers). The RSSI detector 32 is used to determine the RSSI level of signals received by the base site 20. The base site 20 also

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.