



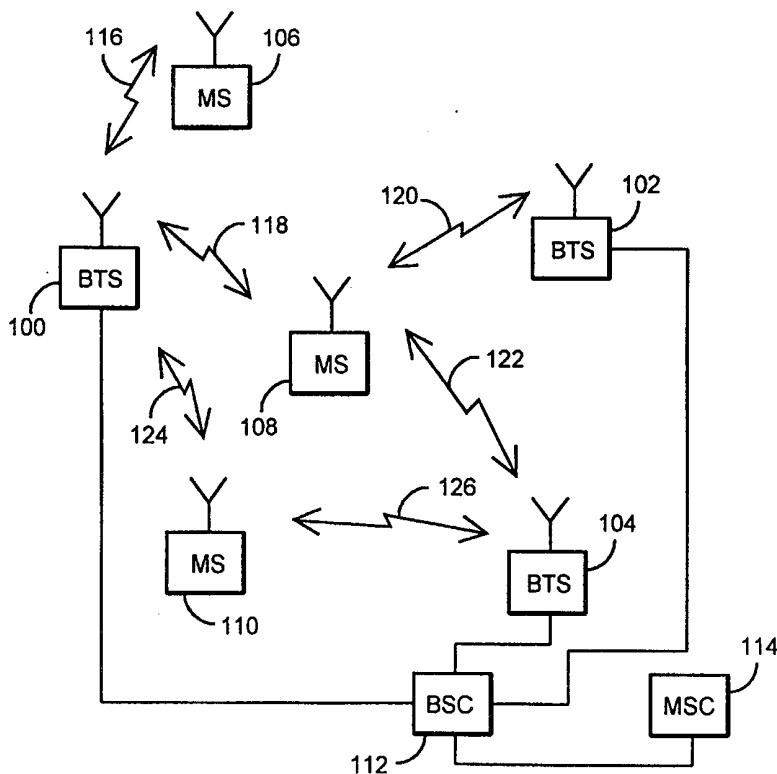
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>6</sup> : <b>H04B 7/216, 7/26, H04Q 7/38</b></p>	<p><b>A3</b></p>	<p>(11) International Publication Number: <b>WO 99/13652</b> (43) International Publication Date: 18 March 1999 (18.03.99)</p>
<p>(21) International Application Number: PCT/FI98/00702 (22) International Filing Date: 9 September 1998 (09.09.98) (30) Priority Data: 973652 10 September 1997 (10.09.97) FI (71) Applicant (for all designated States except US): NOKIA TELECOMMUNICATIONS OY [FI/FI]; Keilalahdentie 4, FIN-02150 Espoo (FI). (72) Inventors; and (75) Inventors/Applicants (for US only): TOSKALA, Antti [FI/FI]; Katajajarjuntie 4 C 48, FIN-00200 Helsinki (FI). WICHMAN, Risto [FI/FI]; Viipurinkatu 10 A 20, FIN-00510 Helsinki (FI). (74) Agent: PATENTTITOIMISTO TEKNOPOLOIS KOLSTER OY; c/o Kolster Oy AB, Iso Roobertinkatu 23, P.O. Box 148, FIN-00121 Helsinki (FI).</p>		<p>(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p><b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. In English translation (filed in Finnish).</i></p> <p>(88) Date of publication of the international search report: 27 May 1999 (27.05.99)</p>

(54) Title: METHOD OF IMPLEMENTING MACRODIVERSITY

(57) Abstract

The invention relates to a method of implementing macrodiversity in a cellular radio network having in each cell at least one base station (100 to 104) which communicates with subscriber terminals (106 to 110) within its area. Packet switched connections (116 to 126) are provided between the base station and the terminals, the connections comprising an actual traffic channel and a separate control channel. In signal transmission, the terminals use IQ modulation in which the traffic and control channels are multiplexed to be transmitted on different branches, and the terminals can communicate with more than one base station simultaneously. To enable macrodiversity in packet switched connections, the actual traffic channel connection is also maintained between the terminal and only one base station, and the control channel connection is maintained between the terminal and more than one base station simultaneously.



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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/FI 98/00702

## A. CLASSIFICATION OF SUBJECT MATTER

IPC6: H04B 7/216, H04B 7/26, H04Q 7/38  
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)

IPC6: H04B, H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, EPODOC, JAPIO

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5621723 A (JAY R. WALTON JR. ET AL), 15 April 1997 (15.04.97), abstract, see line 11, column 17-24 --	1-12
A	WO 9508901 A1 (NOKIA TELECOMMUNICATIONS OY), 30 March 1995 (30.03.95), figure 2, see whole document --	1-12
A	US 5583913 A (MASANORI TAKETSUGU), 10 December 1996 (10.12.96), see whole document --	1-12
P,A	US 5828659 A (PAUL TEDER ET AL), 27 October 1998 (27.10.98), see whole document --	1

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

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Date of the actual completion of the international search <b>6 April 1999</b>	Date of mailing of the international search report <b>07 -04- 1999</b>
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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 98/00702

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 5577047 A (BENGT PERSSON ET AL), 19 November 1996 (19.11.96), abstract  --	1
A	WO 9430024 A1 (TELEFONAKTIEBOLAGET LM ERICSSON), 22 December 1994 (22.12.94), see whole document  -- -----	1

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Information on patent family members

02/03/99

International application No.

PCT/FI 98/00702

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