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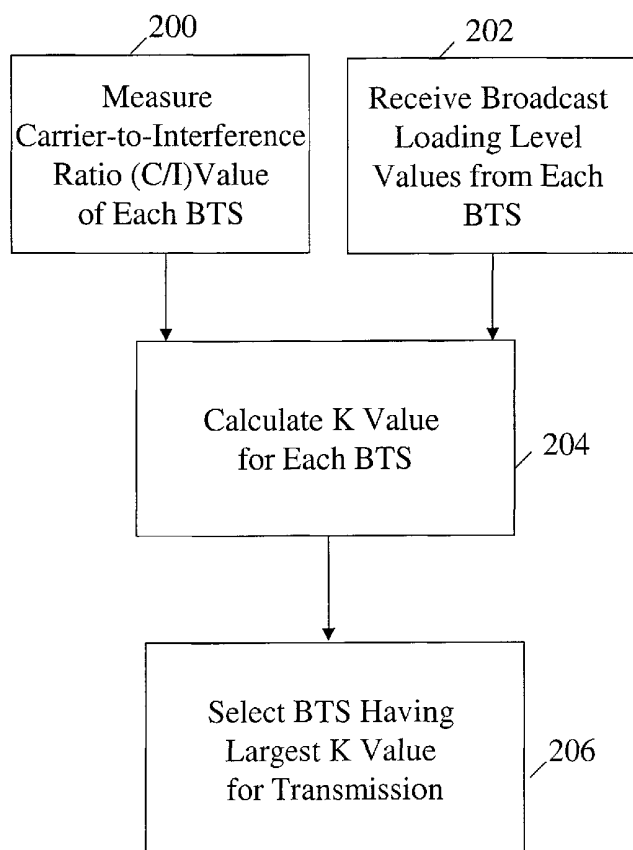
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[Continued on next page]

(54) Title: MOBILE STATION DRIVEN CELL SWITCHING AND HANDOFF WITH LOAD BALANCING FOR WIRELESS SYSTEMS



(57) Abstract: A remote station selects one of a plurality of base stations for communicating with the remote station. Quality information associated with at least two of the plurality of base stations is determined at predefined intervals. Loading information associated with the base stations is received at further predefined intervals. A respective one of the base stations is selected as a function of the quality information and the loading information. Communication with the selected base station is initiated.



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## INTERNATIONAL SEARCH REPORT

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H04Q7/38

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)

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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, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99 14972 A (HAEMAELAEINEN SEPPO ;NOKIA MOBILE PHONES LTD (FI); LAAKSONEN NIINA) 25 March 1999 (1999-03-25)	1-3, 5, 13-15, 17, 25, 27, 28, 30, 39, 41, 42, 44
Y	abstract  page 5, line 6 - line 26 page 7, line 15 -page 8, line 2 page 10, line 19 -page 13, line 1 figure 6  ---  -/--	4, 6-12, 16, 18-24, 26, 29, 31-38, 40, 43, 45-52

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

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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.
Y	EP 0 530 165 A (ERICSSON TELEFON AB L M) 3 March 1993 (1993-03-03) abstract column 3, line 5 - line 14 column 7, line 21 - line 49 ---	1-52
Y	WO 99 51052 A (ERICSSON TELEFON AB L M) 7 October 1999 (1999-10-07) abstract page 1, line 18 -page 2, line 26 page 6, line 5 - line 13 page 10, line 26 -page 13, line 7 figures 2A,3A,3B ---	1-52
A	WO 99 59368 A (HILLIER ADRIAN PAUL ;RICHARDSON ANDREW JAMES (GB); SIMOCO INT LTD) 18 November 1999 (1999-11-18) abstract page 1, line 23 -page 2, line 29 page 42, line 14 - line 23 ---	1,13,25, 39
A	US 4 765 753 A (SCHMIDT WERNER) 23 August 1988 (1988-08-23) abstract column 3, line 43 - line 66 -----	1,13,25, 39

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 01/01407

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9914972	A	25-03-1999	FI 973718 A	18-03-1999
			AU 9267798 A	05-04-1999
			BR 9803438 A	03-11-1999
			CN 1211887 A	24-03-1999
			EP 1038411 A2	27-09-2000
			WO 9914972 A2	25-03-1999
EP 0530165	A	03-03-1993	AU 661497 B2	27-07-1995
			AU 2123592 A	25-02-1993
			CA 2076571 A1	24-02-1993
			EP 0530165 A2	03-03-1993
			FI 923783 A	24-02-1993
			JP 6189362 A	08-07-1994
			NZ 244066 A	27-04-1995
WO 9951052	A	07-10-1999	AU 3633099 A	18-10-1999
			BR 9909304 A	21-11-2000
			CN 1304624 T	18-07-2001
			DE 19983085 T0	21-06-2001
			GB 2352139 A	17-01-2001
			WO 9951052 A1	07-10-1999
			US 2001046879 A1	29-11-2001
WO 9959368	A	18-11-1999	AU 3941899 A	29-11-1999
			EP 1078548 A1	28-02-2001
			WO 9959368 A1	18-11-1999
			GB 2337426 A	17-11-1999
US 4765753	A	23-08-1988	DE 3607687 A1	10-09-1987
			AU 593619 B2	15-02-1990
			AU 6978287 A	10-09-1987
			CA 1272816 A1	14-08-1990
			DE 3787916 D1	02-12-1993
			DK 113387 A	09-09-1987
			EP 0241954 A2	21-10-1987
			FI 870968 A ,B,	09-09-1987
			JP 2532865 B2	11-09-1996
			JP 62213435 A	19-09-1987