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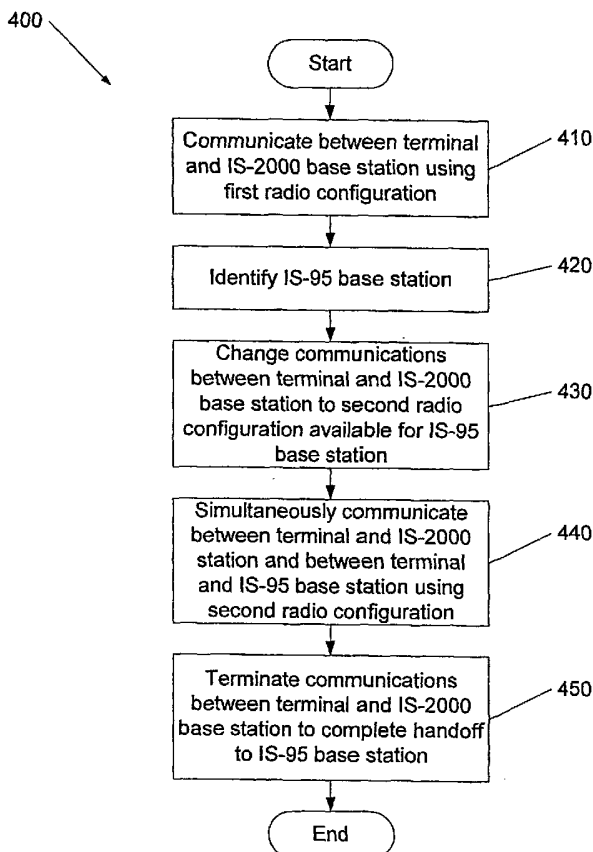
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[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR SOFT HANDOFF AND OTHER DIVERSITY COMMUNICATION USING BASE STATIONS SUPPORTING COMMON RADIO CONFIGURATIONS



(57) Abstract: A wireless terminal and a first node communicate according to a first radio configuration of a first set of radio configurations supported by the first node. A second radio configuration that is available for a second node that supports a second set of radio configurations that is different from the first set of radio configurations is then identified. The wireless terminal and respective ones of the first and second nodes then simultaneously communicate according to the identified second radio configuration. In other embodiments, a wireless terminal is handed off from a first base station to a second base station based on a determination of whether a common radio configuration is available for the first and second base stations. Related wireless communications systems and wireless terminal apparatus are also described.



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INTERNATIONAL SEARCH REPORT

International Application No.
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Electronic data base consulted during the international search (name of data base and, where practical, 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.
P, X	WO 01 65881 A (NOKIA NETWORKS' OY) 7 September 2001 (2001-09-07) abstract; figures 1-3 page 12, line 25 -page 14, line 11 ---	1
Y	WO 00 38465 A (TELEFONAKTIEBOLAGET LM ERICSSON) 29 June 2000 (2000-06-29) abstract; figures 1-4 page 10, line 3 -page 13, line 16 ---	1, 14, 24, 36, 40
Y	WO 99 35872 A (LE) 15 July 1999 (1999-07-15) abstract; figures 1-8 page 20, line 7 -page 21, line 6 ---	1, 14, 24, 36, 40
A	US 5 649 308 A (ANDREWS) 15 July 1997 (1997-07-15) abstract; claims 22-25; figures 1-3 --- -/--	32-35

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☒ Patent family members are listed in annex.

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International Application No
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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.
A	<p>WO 95 17077 A (SAINTON) 22 June 1995 (1995-06-22) abstract; figure 9 page 35, line 1 -page 36, line 5 page 37, line 27 -page 38, line 9 ---</p>	32-35
A	<p>ETSI: "Handover Requirements between UMTS and GSM or other Radio Systems (3G TS 22.129 version 3.2.0)" EUROPEAN TELECOMMUNICATION STANDARD, XX, XX, December 1999 (1999-12), pages 1-20, XP002143722 the whole document -----</p>	1-44

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0165881	A	07-09-2001	AU 3380001 A WO 0165881 A1	12-09-2001 07-09-2001
WO 0038465	A	29-06-2000	AU 3089400 A EP 1142413 A1 JP 2002534029 T WO 0038465 A1	12-07-2000 10-10-2001 08-10-2002 29-06-2000
WO 9935872	A	15-07-1999	US 6205128 B1 AU 749933 B2 AU 2215799 A CN 1256057 T EP 0976291 A1 JP 2001515689 T NO 994318 A WO 9935872 A1	20-03-2001 04-07-2002 26-07-1999 07-06-2000 02-02-2000 18-09-2001 06-09-1999 15-07-1999
US 5649308	A	15-07-1997	NONE	
WO 9517077	A	22-06-1995	AU 1674495 A CA 2179151 A1 EP 0734636 A1 WO 9517077 A1 US 5761621 A US 6134453 A US 5854985 A	03-07-1995 22-06-1995 02-10-1996 22-06-1995 02-06-1998 17-10-2000 29-12-1998