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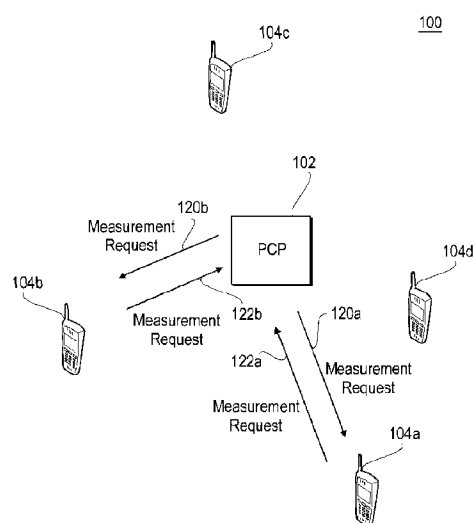


FIG. 1

(57) Abstract: Techniques for radio resource measurement (RRM) that support directionality, as well as scheduled media access techniques are described. For instance, a measurement request may be transmitted from a first device to a second device. This measurement request directs the second device to take one or more measurements of a wireless channel. Various characteristics for the one or more measurements may be included in the measurement request. For example, the measurement request may indicate at least one directional parameter and at least one timing parameter for the one or more measurements. In response to the request, the first device receives a measure report that includes measured values for each of the one or more measurements.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/038499**A. CLASSIFICATION OF SUBJECT MATTER*****H04W 24/10(2009.01)i, H04W 28/18(2009.01)i***

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)

H04W 24/10; H04M 1/00; H04B 7/216; H04B 1/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: channel measurement, request, direction, time

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004-0219926 A1 (KIM SO-HYUN et al.) 04 November 2004 See abstract; paragraph [33]-[40],[89]-[92],[96]; and claims 1,8;	1,3-5,8-11,13-15 ,18-20
A		2,6-7,12,16-17
A	US 7515878 B2 (ZHANG CHENGJIN et al.) 07 April 2009 See abstract; column 5 line 24 - column 6 line 3, column 8 line 54 - line 58; and claims 1-3.	1-20
A	US 2008-0310372 A1 (LI FENG et al.) 18 December 2008 See abstract; paragraphs [51]-[53],[57].	1-20

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

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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
US 2004-0219926 A1	04.11.2004	AU 2004-234754 A1	11.11.2004
		AU 2004-234754 B2	19.07.2007
		CA 2492786 A1	11.11.2004
		CA 2492786 C	29.12.2009
		CN 100433879 C	12.11.2008
		CN 1701621 A	23.11.2005
		EP 1473956 A2	03.11.2004
		EP 1473956 A3	10.08.2005
		EP 1473956 B1	10.11.2010
		JP 2006-524931 A	02.11.2006
		JP 2009-136026 A	18.06.2009
		KR 10-0606129 B1	28.07.2006
		KR 10-2004-0093994 A	09.11.2004
		RU 2005-102108 A	10.10.2005
		RU 2295843 C2	20.03.2007
		US 2008-0014958 A1	17.01.2008
		US 7260405 B2	21.08.2007
		WO 2004-098221 A1	11.11.2004
US 7515878 B2	07.04.2009	CN 100493213 C	27.05.2009
		CN 1937798 A	28.03.2007
		EP 1768275 A2	28.03.2007
		US 2007-0066237 A1	22.03.2007
		US 2009-0253381 A1	08.10.2009
US 2008-0310372 A1	18.12.2008	None	