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(54) Title: ENHANCING PS-POLL FOR LOW-POWER WiFi

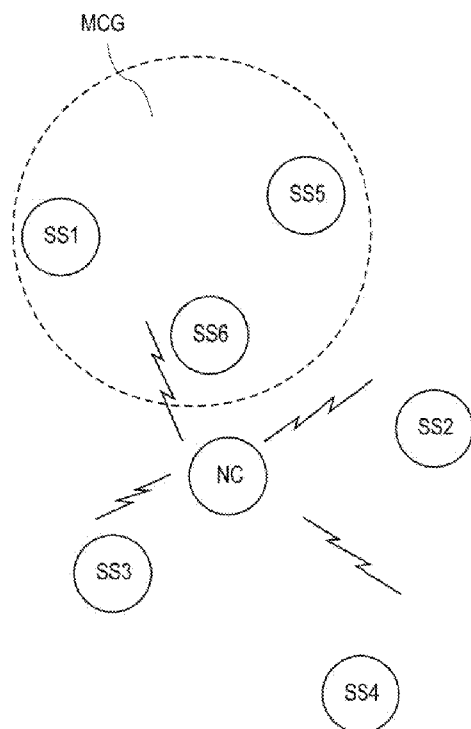


FIG. 1
(PRIOR ART)

(57) Abstract: After waking from a sleep mode, a wireless communication device may poll a network controller for any broadcast and/or multicast messages. The device and the network controller may agree to this arrangement ahead of time, so that the network controller will know to buffer such messages until the device requests them. A format for enabling this capability is described.





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A. CLASSIFICATION OF SUBJECT MATTER***H04W 28/14(2009.01)i, H04W 74/06(2009.01)i, H04W 52/02(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 28/14; G08C 17/00; H04J 15/00; H04L 12/28

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: group-addressed packet, sleep mode

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2008-0144559 A1 (GRISWOLD VICTOR J. et al.) 19 June 2008	1-2, 4, 6-9, 11, 13-14
A	See abstract; paragraphs [0021]-[0029]; claims 1-6, 10, 15-20; figures 2, 3. See whole document.	3, 5, 10, 12
Y	US 2007-0104179 A1 (ROSHNI SRINIVASAN et al.) 10 May 2007	1-2, 4, 6-9, 11, 13-14
A	See paragraphs [0005]-[0011], [0016], [0025]; figure 1. See whole document.	3, 5, 10, 12



Further documents are listed in the continuation of Box C.



See patent family annex.

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Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008-0144559 A1	19.06.2008	AT 441294 T	15.09.2009
		AU 2004-297927 A1	23.06.2005
		AU 2004-297927 B2	03.12.2009
		CA 2543240 A1	23.06.2005
		CA 2543240 C	12.10.2010
		CN 100555984 C	28.10.2009
		CN 1879367 A	13.12.2006
		CN 1879367 C0	13.12.2006
		DE 602004022853 D1	08.10.2009
		EP 1692826 A1	23.08.2006
		EP 1692826 B1	26.08.2009
		US 2005-0114537 A1	26.05.2005
		US 7362757 B2	22.04.2008
		WO 2005-057867 A1	23.06.2005
US 2007-0104179 A1	10.05.2007	US 2011-0103279 A1	05.05.2011
		US 7693555 B2	06.04.2010
		US 8259634 B2	04.09.2012
		WO 2007-048056 A1	26.04.2007