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Rao et al.

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(54) **MULTIFUNCTION MOBILE DEVICES AND APPLIANCE CONTROL**

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Related U.S. Application Data

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(51) **Int. Cl.**
H04W 4/00 (2009.01)
H04M 1/725 (2006.01)
H04M 11/00 (2006.01)
G08C 17/02 (2006.01)
H04L 12/28 (2006.01)

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CPC **H04M 1/72533** (2013.01); **G08C 17/02** (2013.01); **H04L 12/2803** (2013.01); **H04M 11/007** (2013.01)

(58) **Field of Classification Search**
CPC H04M 1/72533; H04M 1/725; H04M 1/6041; H04M 1/6058; H04M 2250/74; H04M 11/007; G08C 17/02; H04L 12/2803; H04L 29/08567
USPC 370/335, 351, 352; 379/58; 455/434, 455/437, 420, 555, 553, 461; 709/221; 710/104

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,671,267	A *	9/1997	August	.....	H04M 1/72502	379/102.03
5,764,730	A *	6/1998	Rabe et al.	.....	455/403	
5,903,832	A *	5/1999	Seppanen et al.	.....	455/435.3	
6,112,088	A *	8/2000	Haartsen	.....	455/437	
6,119,186	A *	9/2000	Watts et al.	.....	710/104	
6,167,464	A *	12/2000	Kretschmann	.....	710/15	
6,223,029	B1 *	4/2001	Stenman et al.	.....	455/420	
6,308,083	B2 *	10/2001	King	.....	455/556.1	
6,341,304	B1 *	1/2002	Engbersen et al.	.....	709/203	
6,356,543	B2 *	3/2002	Hall et al.	.....	370/352	
6,401,059	B1 *	6/2002	Shen et al.	.....	703/27	
6,421,429	B1	7/2002	Merritt et al.			
6,453,127	B2 *	9/2002	Wood et al.	.....	399/8	

(Continued)

OTHER PUBLICATIONS

Lawrence Harte, Morris Hoenig, Daniel McLaughlin, and Roman K. Kta. CDMA IS-95 for Cellular and PCS: Technology, Economics and Services. McGraw-Hill. 1999.*

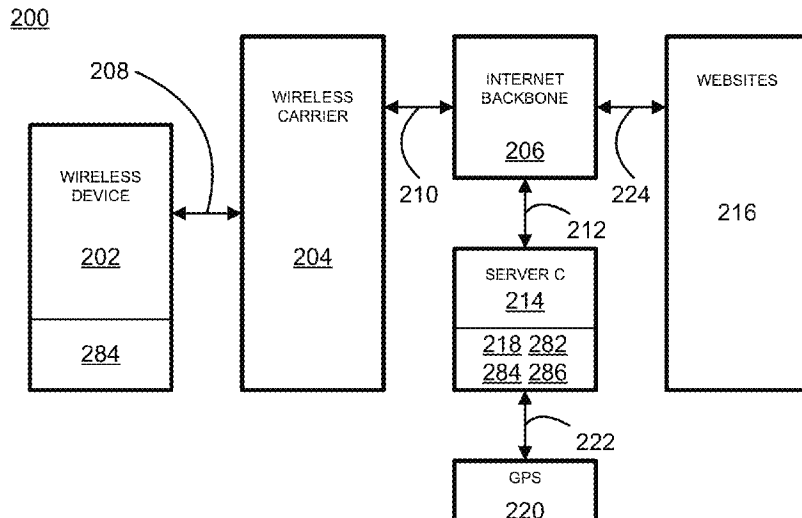
(Continued)

Primary Examiner — Ajit Patel

(57) **ABSTRACT**

A wireless communication and control system including a wireless device. There is a central server for storing communication protocols and control protocols and communicating the communication protocols and selectively communicating the control protocols between the wireless device and the central server. A communication protocol configures the system for communication and control protocols configure the system as one of a selection of intelligent appliance controllers. Alternately the control protocols configure the system as one of a selection of Internet terminals. The wireless device is any hand-held communication device, such as a hand-held computing device, wireless telephone, or cellular phone.

34 Claims, 5 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

6,493,751 B1 * 12/2002 Tate et al. 709/221
6,529,491 B1 * 3/2003 Chang et al. 370/335
6,539,237 B1 * 3/2003 Sayers et al. 455/555
6,546,002 B1 * 4/2003 Kim 370/351
6,591,103 B1 * 7/2003 Dunn et al. 455/436
6,625,451 B1 * 9/2003 La Medica et al. 455/434
6,628,964 B1 * 9/2003 Bates et al. 455/556.1
6,826,405 B2 11/2004 Doviak et al.
6,832,230 B1 * 12/2004 Zilliacus et al. 455/414.3
6,853,851 B1 * 2/2005 Rautiola et al. 455/553.1
6,937,972 B1 * 8/2005 Van Ee 703/20
6,993,359 B1 * 1/2006 Nelakanti et al. 455/554.1
7,213,061 B1 * 5/2007 Hite H04L 12/2803
361/803
7,286,658 B1 10/2007 Henderson
7,639,157 B1 * 12/2009 Whitley G08C 17/02
340/870.02
7,894,474 B1 * 2/2011 Bell 370/466
8,670,405 B1 * 3/2014 Lee et al. 370/331
2002/0046083 A1 * 4/2002 Ondeck 705/14

OTHER PUBLICATIONS

GB 2294563 published 1/5/1196.*

* cited by examiner

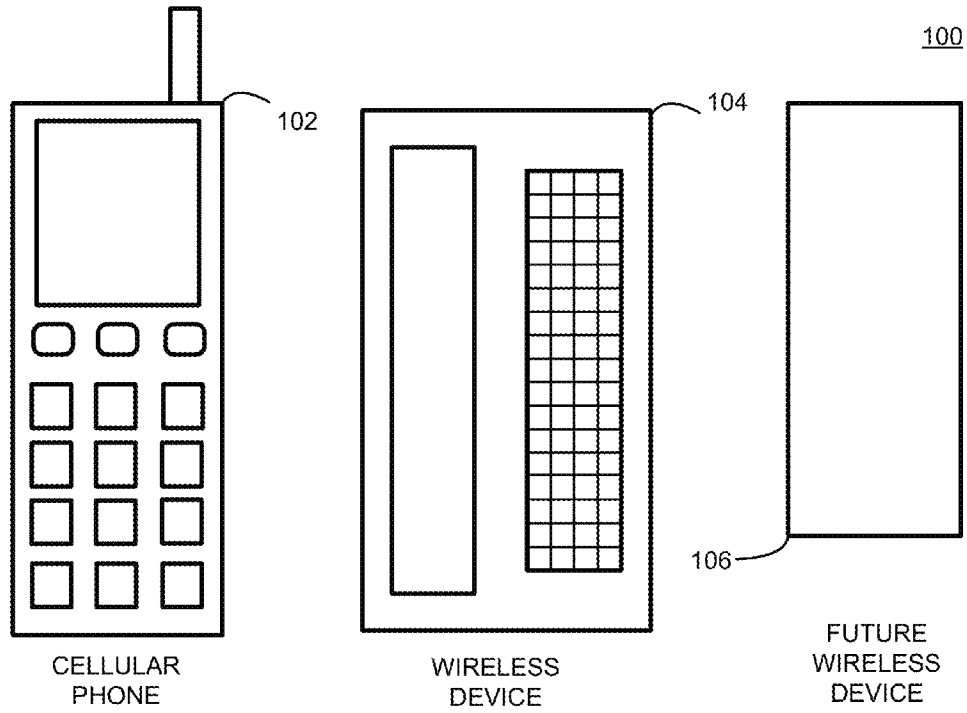


FIG. 1

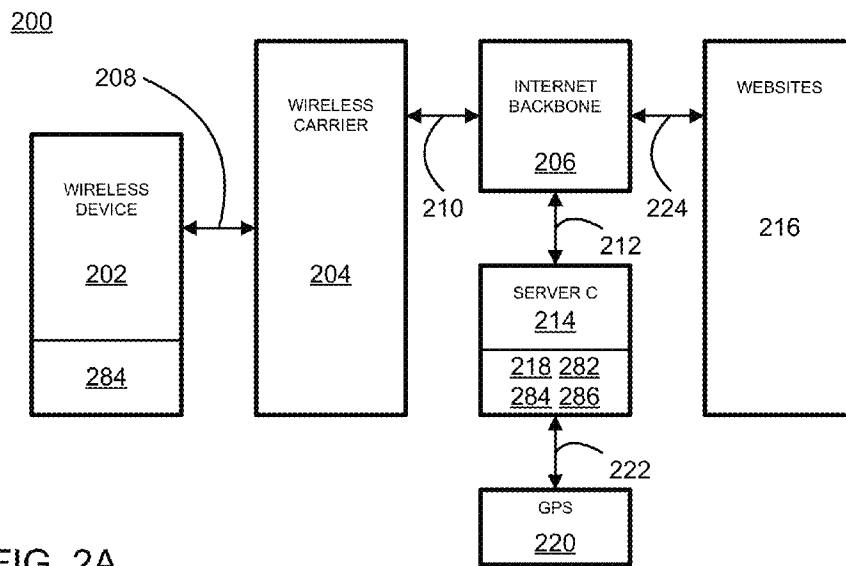
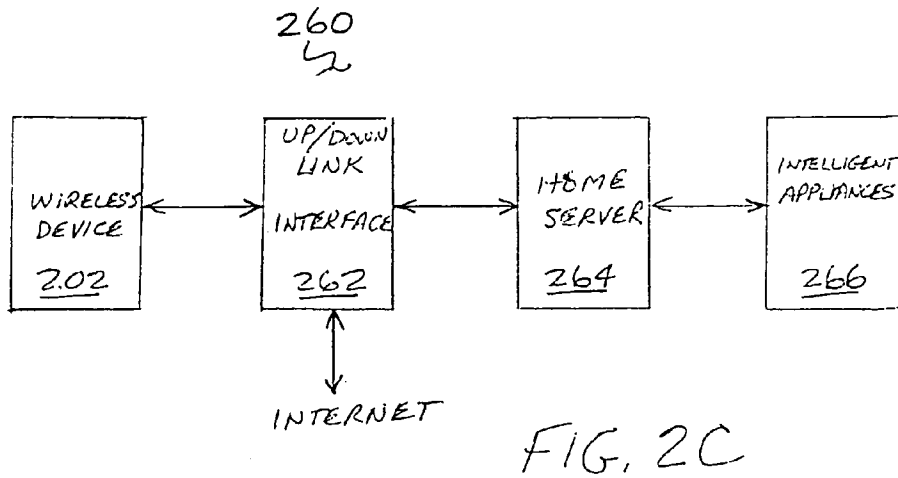
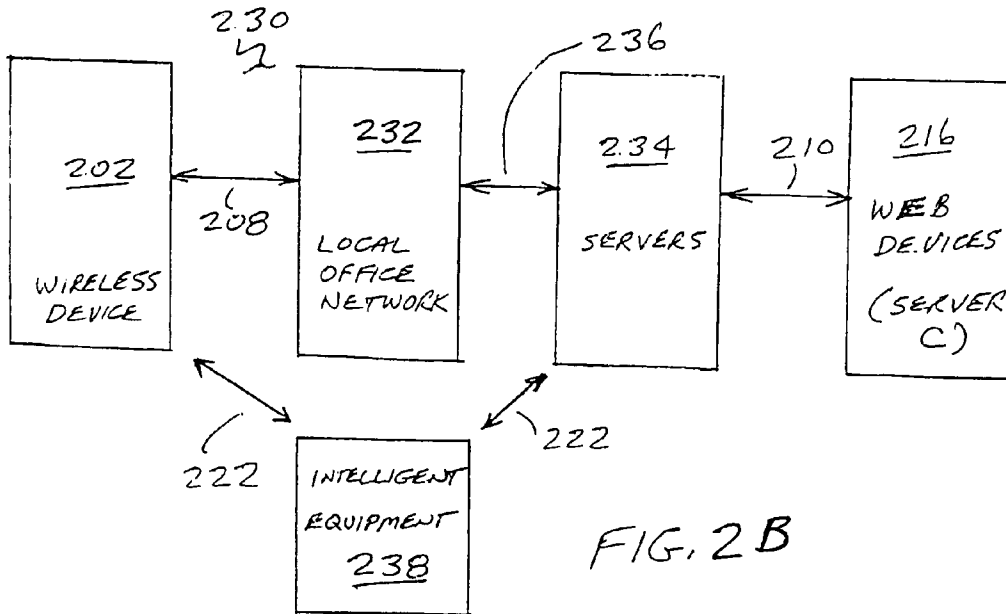


FIG. 2A



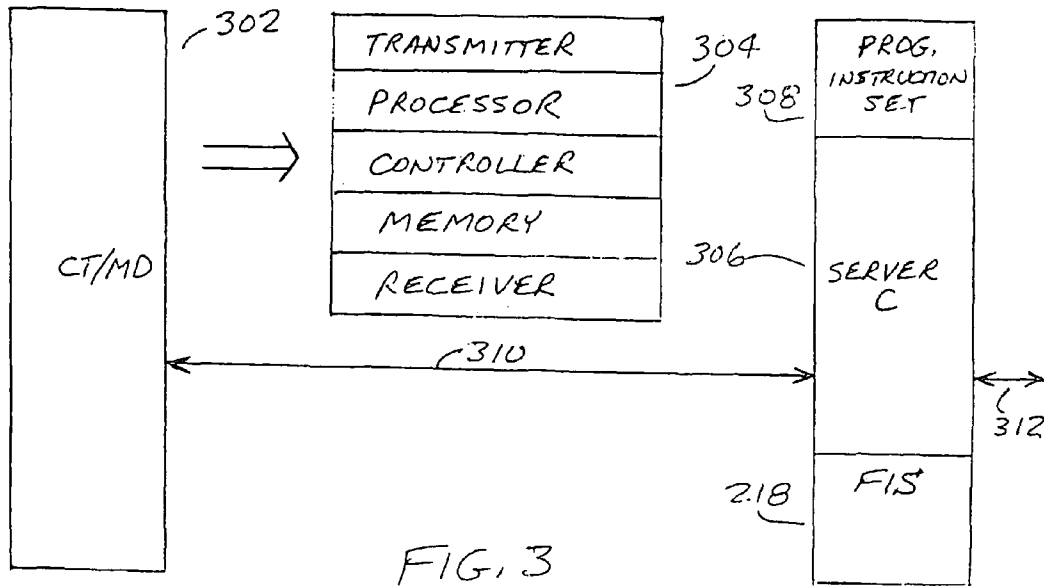


FIG. 3

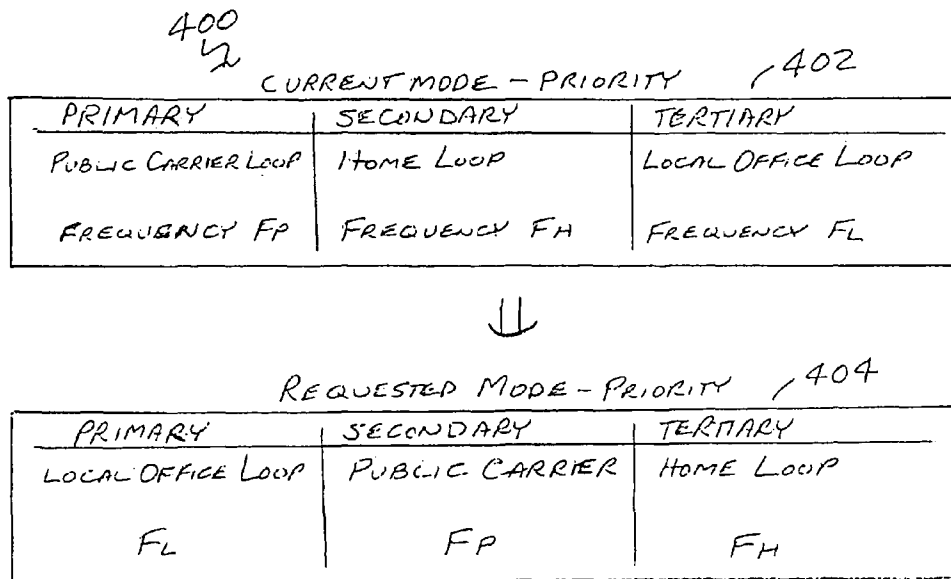


FIG. 4

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