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(54) **METHOD AND SYSTEM FOR ENHANCED MESSAGING**

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(56) **References Cited**

U.S. PATENT DOCUMENTS

3,975,941	A	8/1976	Smith
4,719,920	A	1/1988	Alt et al.
5,337,579	A	8/1994	Saia, III et al.
5,347,274	A	9/1994	Hassett
5,389,934	A	2/1995	Kass

(Continued)

FOREIGN PATENT DOCUMENTS

EP	0 874 529 A2	10/1998
EP	1 037 447 A2	9/2000

(Continued)

OTHER PUBLICATIONS

Danger Product Overview, Danger, Inc., date unknown, 5 pgs.

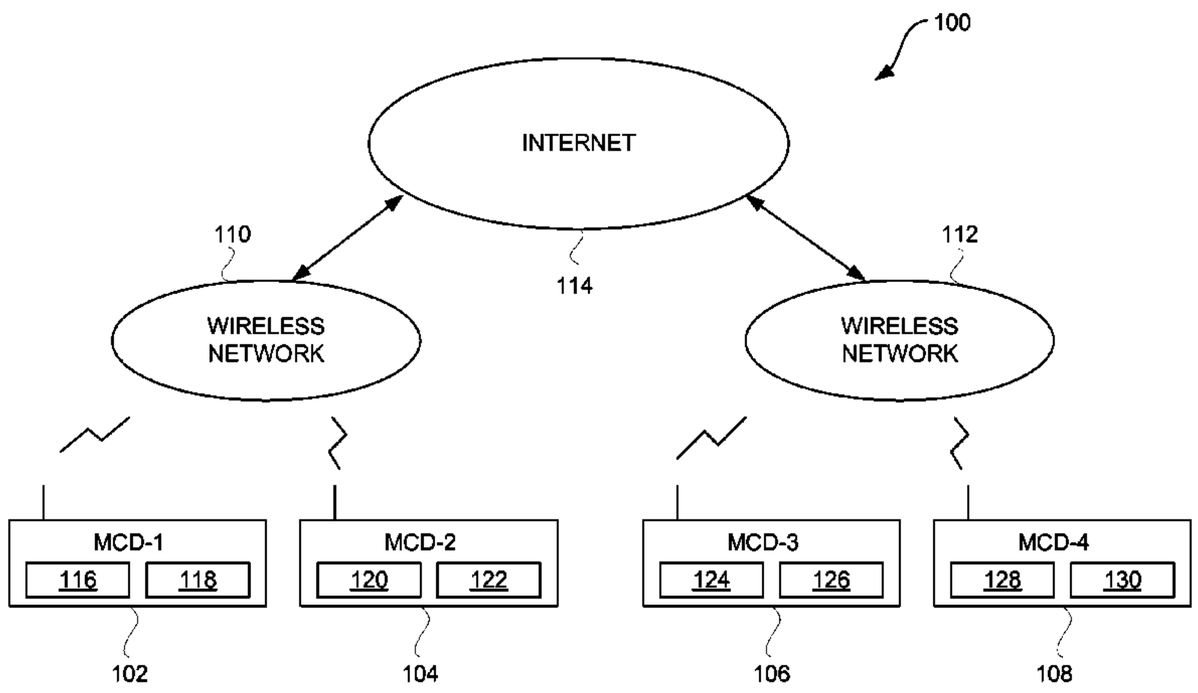
(Continued)

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(57) **ABSTRACT**

Techniques for acquiring, sending, receiving or using status information from a remote location over a network are disclosed. The status information is transmitted over the network between or among electronic devices. The status information can be provided by one or more sensors associated with the electronic device that is transmitting the status information. The status information can be transmitted with messages so as to enhance the messages. The electronic devices include at least computing devices, such as personal computers, personal digital assistants, pagers, and mobile telephones.

51 Claims, 7 Drawing Sheets



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(56) **References Cited**

U.S. PATENT DOCUMENTS

5,394,333	A	2/1995	Kao
5,400,020	A	3/1995	Jones et al.
5,422,816	A	6/1995	Sprague et al.
5,461,365	A	10/1995	Schlager et al.
5,491,486	A	2/1996	Welles, II et al.
5,512,902	A	4/1996	Guthrie et al.
5,515,858	A	5/1996	Myllymaki
5,528,247	A	6/1996	Nonami
5,528,518	A	6/1996	Bradshaw et al.
5,532,690	A	7/1996	Hertel
5,539,748	A	7/1996	Raith
5,541,845	A	7/1996	Klein
5,543,789	A	8/1996	Behr et al.
5,550,551	A	8/1996	Alesio
5,568,119	A	10/1996	Schipper et al.
5,570,412	A	10/1996	LeBlanc
5,576,716	A	11/1996	Sadler
5,592,173	A	1/1997	Lau et al.
5,598,460	A	1/1997	Tendler
5,604,708	A	2/1997	Helms et al.
5,623,260	A	4/1997	Jones
5,623,418	A	4/1997	Rostoker
5,627,517	A	5/1997	Theimer et al.
5,629,678	A	5/1997	Gargano et al.
5,633,874	A	5/1997	Diachina et al.
5,650,770	A	7/1997	Schlager et al.
5,652,570	A	7/1997	Lepkofker
5,673,692	A	10/1997	Schulze et al.
5,686,888	A	11/1997	Welles, II et al.
5,710,551	A	1/1998	Ridgeway
5,712,619	A	1/1998	Simkin
5,731,757	A	3/1998	Layson, Jr.
5,731,788	A	3/1998	Reeds
5,742,233	A	4/1998	Hoffman et al.
5,751,245	A	5/1998	Janky et al.
5,771,001	A	6/1998	Cobb
5,771,455	A	6/1998	Kennedy, III et al.
5,774,876	A	6/1998	Woolley et al.
5,786,789	A	7/1998	Janky
5,797,091	A	8/1998	Clise et al.
5,808,565	A	9/1998	Matta et al.
RE35,920	E	10/1998	Sorden et al.
5,825,283	A	10/1998	Camhi
5,826,195	A	10/1998	Westerlage et al.
5,835,907	A	11/1998	Newman
5,841,352	A	11/1998	Prakash
5,844,862	A	12/1998	Cocatre-Zilgien
5,850,196	A	12/1998	Mowers
5,861,841	A	1/1999	Gildea et al.
5,883,594	A	3/1999	Lau
5,889,770	A	3/1999	Jokiaho et al.
5,892,454	A	4/1999	Schipper et al.
5,894,266	A	4/1999	Wood, Jr. et al.
5,902,347	A	5/1999	Backman et al.
5,905,461	A	5/1999	Neher
5,910,799	A	6/1999	Carpenter et al.
5,913,078	A	6/1999	Kimura et al.
5,917,433	A	6/1999	Keillor et al.
5,918,180	A	6/1999	Dimino
5,938,721	A	8/1999	Dussell et al.
5,948,040	A	9/1999	DeLorme et al.
5,948,043	A	9/1999	Mathis
5,959,575	A	9/1999	Abbott
5,959,577	A	9/1999	Fan et al.
5,963,130	A	10/1999	Schlager et al.
5,982,285	A	11/1999	Bueche et al.
5,982,807	A	11/1999	Snell
5,983,108	A	11/1999	Kennedy, III et al.
5,991,690	A	11/1999	Murphy
5,995,849	A	11/1999	Williams et al.
6,002,363	A	12/1999	Krasner
6,002,982	A	12/1999	Fry
6,009,319	A	12/1999	Khullar et al.
6,013,007	A	1/2000	Root et al.
6,014,080	A	1/2000	Layson, Jr.
6,014,090	A	1/2000	Rosen et al.
6,023,241	A	2/2000	Clapper
6,031,496	A	2/2000	Kuittinen
6,032,051	A	2/2000	Hall et al.
6,034,622	A	3/2000	Levine
6,054,928	A	4/2000	Lemelson et al.
6,064,336	A	5/2000	Krasner
6,067,018	A	5/2000	Skelton et al.
6,067,044	A	5/2000	Whelan et al.
6,072,396	A	6/2000	Gaukel
6,078,290	A	6/2000	McBurney et al.
6,083,248	A	7/2000	Thompson
6,083,353	A	7/2000	Alexander
6,094,168	A	7/2000	Duffett-Smith et al.
6,100,806	A	8/2000	Gaukel
6,101,710	A	8/2000	Selinger et al.
6,111,540	A	8/2000	Krasner
6,115,595	A	9/2000	Rodal et al.
6,121,921	A	9/2000	Ishigaki
6,131,067	A	10/2000	Girerd et al.
6,140,863	A	10/2000	Fujisawa
6,141,570	A	10/2000	O'Neill, Jr. et al.
6,144,303	A	11/2000	Federman
6,148,280	A	11/2000	Kramer
6,154,422	A	11/2000	Shinkawa et al.
6,163,696	A	12/2000	Bi et al.
6,169,902	B1	1/2001	Kawamoto
6,171,264	B1	1/2001	Bader
6,172,640	B1	1/2001	Durst et al.
6,175,616	B1	1/2001	Light et al.
6,198,390	B1	3/2001	Schlager et al.
6,198,431	B1	3/2001	Gibson
6,198,930	B1	3/2001	Schipper
6,199,045	B1	3/2001	Giniger et al.
6,212,133	B1	4/2001	McCoy et al.
6,226,622	B1	5/2001	Dabbiere
6,231,519	B1	5/2001	Blants et al.
6,232,916	B1	5/2001	Grillo et al.
6,236,358	B1	5/2001	Durst et al.
6,238,337	B1	5/2001	Kambhatla et al.
6,243,039	B1	6/2001	Elliot
6,243,660	B1	6/2001	Hsu et al.
6,246,376	B1	6/2001	Bork et al.
6,252,543	B1	6/2001	Camp
6,252,544	B1	6/2001	Hoffberg
6,259,944	B1	7/2001	Margulis et al.
6,263,280	B1	7/2001	Stingone, Jr.
6,266,612	B1	7/2001	Dussell et al.
6,272,457	B1	8/2001	Ford et al.
6,278,936	B1	8/2001	Jones
6,281,797	B1	8/2001	Forster
6,282,362	B1	8/2001	Murphy et al.
6,282,495	B1	8/2001	Kirkhart et al.
6,292,687	B1	9/2001	Lowell et al.
6,298,306	B1	10/2001	Suarez et al.
6,300,875	B1	10/2001	Schafer
6,302,844	B1	10/2001	Walker et al.
6,304,467	B1	10/2001	Nebrigic
6,314,308	B1	11/2001	Sheynblat et al.
6,317,049	B1	11/2001	Toubia et al.
6,323,807	B1	11/2001	Golding et al.
6,324,213	B1	11/2001	Harrison

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,327,533	B1	12/2001	Chou	
6,330,149	B1	12/2001	Burrell	
6,331,817	B1	12/2001	Goldberg	
6,331,825	B1	12/2001	Ladner et al.	
6,339,397	B1	1/2002	Baker	
6,340,928	B1	1/2002	McCurdy	
6,342,847	B1	1/2002	Archuleta et al.	
6,349,257	B1	2/2002	Liu et al.	
6,353,390	B1	3/2002	Beri et al.	
6,353,798	B1	3/2002	Green et al.	
6,356,836	B1	3/2002	Adolph	
6,356,841	B1	3/2002	Hamrick et al.	
6,362,778	B2	3/2002	Neher	
6,363,254	B1	3/2002	Jones et al.	
6,363,323	B1	3/2002	Jones	
6,373,430	B1	4/2002	Beason et al.	
6,377,810	B1	4/2002	Geiger et al.	
6,388,612	B1	5/2002	Neher	
6,393,346	B1	5/2002	Keith et al.	
6,404,352	B1	6/2002	Ichikawa et al.	
6,407,698	B1	6/2002	Ayed	
6,411,892	B1	6/2002	Van Diggelen	
6,411,899	B2	6/2002	Dussell et al.	
6,421,538	B1	7/2002	Byrne	
6,426,719	B1	7/2002	Nagareda et al.	
6,427,120	B1	7/2002	Garin et al.	
6,430,602	B1	8/2002	Kay et al.	
6,433,732	B1	8/2002	Dutta et al.	
6,434,396	B1	8/2002	Rune	
6,441,778	B1	8/2002	Durst et al.	
6,442,380	B1	8/2002	Mohindra	
6,442,391	B1	8/2002	Johansson et al.	
6,443,890	B1	9/2002	Schulze et al.	
6,445,937	B1	9/2002	daSilva	
6,453,237	B1	9/2002	Fuchs et al.	
6,463,272	B1	10/2002	Wallace et al.	
6,466,821	B1	10/2002	Pianca et al.	
6,469,639	B2	10/2002	Tanenhaus et al.	
6,471,087	B1	10/2002	Shusterman	
6,478,736	B1	11/2002	Mault	
6,496,775	B2	12/2002	McDonald, Jr. et al.	
6,505,048	B1	1/2003	Moles et al.	
6,505,049	B1	1/2003	Dorenbosch	
6,513,532	B2	2/2003	Mault et al.	
6,522,871	B1	2/2003	Patrick et al.	
6,522,889	B1	2/2003	Aarnio	
6,529,164	B1	3/2003	Carter	
6,544,193	B2	4/2003	Abreu	
6,552,652	B2	4/2003	Beken	
6,553,336	B1	4/2003	Johnson et al.	
6,559,620	B2	5/2003	Zhou et al.	
6,560,463	B1	5/2003	Santhoff	
6,569,094	B2	5/2003	Suzuki et al.	
6,571,193	B1	5/2003	Unuma et al.	
6,579,231	B1	6/2003	Phipps	
6,579,844	B1	6/2003	Morrison et al.	
6,611,688	B1	8/2003	Raith	
6,625,437	B1	9/2003	Jampolsky et al.	
6,630,885	B2	10/2003	Hardman et al.	
6,640,085	B1	10/2003	Chatzipetros et al.	
6,650,907	B1	11/2003	Kamperschroer et al.	
6,661,372	B1	12/2003	Girerd et al.	
6,679,071	B1	1/2004	Storey et al.	
6,696,982	B2	2/2004	Yoshioka et al.	
6,714,158	B1	3/2004	Underbrink et al.	
6,714,791	B2	3/2004	Friedman	
6,721,542	B1	4/2004	Anttila et al.	
6,741,927	B2	5/2004	Jones	
6,747,675	B1	6/2004	Abbott et al.	
6,748,318	B1	6/2004	Jones	
6,788,766	B2	9/2004	Logan	
6,801,853	B2	10/2004	Workman	
6,804,606	B2	10/2004	Jones	
6,847,892	B2	1/2005	Zhou et al.	
6,856,804	B1	2/2005	Ciotta	
6,856,807	B1	2/2005	Raith	
6,865,385	B1	3/2005	Kohda et al.	
6,876,862	B1	4/2005	Tanaka	
6,888,879	B1	5/2005	Lennen	
6,937,900	B1	8/2005	Pianca et al.	
6,952,645	B1	10/2005	Jones	
6,975,941	B1	12/2005	Lau et al.	
6,980,813	B2	12/2005	Mohi et al.	
6,980,826	B2	12/2005	Yamaguchi	
6,997,882	B1	2/2006	Parker et al.	
7,010,144	B1	3/2006	Davis et al.	
7,071,842	B1	7/2006	Brady, Jr.	
7,085,253	B2	8/2006	Yang	
7,110,773	B1	9/2006	Wallace et al.	
7,136,832	B2	11/2006	Li et al.	
7,187,278	B2	3/2007	Biffar	
7,212,829	B1	5/2007	Lau et al.	
7,218,938	B1	5/2007	Lau et al.	
7,253,731	B2	8/2007	Joao	
7,308,272	B1	12/2007	Wortham	
7,321,774	B1	1/2008	Lau et al.	
7,325,061	B2	1/2008	Haruki	
7,366,522	B2	4/2008	Thomas	
7,375,682	B1	5/2008	Tester et al.	
7,403,972	B1	7/2008	Lau et al.	
7,482,920	B2	1/2009	Joao	
7,539,557	B2	5/2009	Yamauchi	
7,809,377	B1	10/2010	Lau et al.	
7,905,832	B1	3/2011	Lau et al.	
7,953,809	B2	5/2011	Lau et al.	
8,176,135	B2	5/2012	Lau et al.	
8,285,484	B1	10/2012	Lau et al.	
8,301,158	B1	10/2012	Thomas	
8,447,822	B2	5/2013	Lau et al.	
8,611,920	B2	12/2013	Lau et al.	
8,620,343	B1	12/2013	Lau et al.	
8,700,050	B1	4/2014	Thomas	
8,725,165	B2	5/2014	Lau et al.	
8,753,273	B1	6/2014	Lau et al.	
8,868,103	B2	10/2014	Thomas	
8,886,220	B2	11/2014	Lau et al.	
9,049,571	B2 *	6/2015	Lau et al.	455/411
9,074,903	B1	7/2015	Lau et al.	
9,182,238	B2	11/2015	Lau et al.	
9,219,988	B2	12/2015	Lau et al.	
2001/0006891	A1	7/2001	Cho	
2001/0020204	A1	9/2001	Runyon et al.	
2001/0027378	A1	10/2001	Tennison et al.	
2001/0027525	A1	10/2001	Gamlin	
2001/0028304	A1	10/2001	I'Anson et al.	
2001/0044299	A1	11/2001	Sandegren	
2001/0044332	A1	11/2001	Yamada et al.	
2001/0047125	A1	11/2001	Quy	
2001/0052849	A1	12/2001	Jones, Jr.	
2002/0000916	A1	1/2002	Richards	
2002/0000930	A1	1/2002	Crowson et al.	
2002/0008661	A1	1/2002	McCall et al.	
2002/0016173	A1	2/2002	Hunzinger	
2002/0027507	A1	3/2002	Yarin et al.	
2002/0028988	A1	3/2002	Suzuki et al.	
2002/0036593	A1	3/2002	Ying	
2002/0038182	A1	3/2002	Wong et al.	
2002/0049742	A1	4/2002	Chan et al.	
2002/0050945	A1	5/2002	Tsukishima et al.	
2002/0057192	A1	5/2002	Eagleson et al.	
2002/0063622	A1	5/2002	Armstrong et al.	
2002/0071677	A1	6/2002	Sumanaweera	
2002/0077080	A1	6/2002	Greene	
2002/0087260	A1	7/2002	Hancock et al.	
2002/0087619	A1	7/2002	Tripathi	
2002/0094067	A1	7/2002	August	
2002/0099567	A1	7/2002	Joao	
2002/0111171	A1	8/2002	Boesch et al.	
2002/0111819	A1	8/2002	Li et al.	
2002/0115453	A1	8/2002	Poulin et al.	
2002/0116080	A1	8/2002	Birnbach et al.	
2002/0119770	A1	8/2002	Twitchell et al.	

(56) **References Cited**

U.S. PATENT DOCUMENTS

2002/0119789	A1	8/2002	Friedman
2002/0120475	A1	8/2002	Morimoto
2002/0120503	A1	8/2002	Iwayama et al.
2002/0140081	A1	10/2002	Chou et al.
2002/0173910	A1	11/2002	McCall et al.
2002/0193121	A1	12/2002	Nowak et al.
2002/0198003	A1	12/2002	Klapman
2003/0003943	A1	1/2003	Bajikar
2003/0009410	A1	1/2003	Ramankutty et al.
2003/0013445	A1	1/2003	Fujiwara et al.
2003/0018430	A1	1/2003	Ladetto et al.
2003/0068605	A1	4/2003	Kullok et al.
2003/0069759	A1	4/2003	Smith
2003/0083011	A1	5/2003	Haller et al.
2003/0083046	A1	5/2003	Mathis
2003/0083814	A1	5/2003	Gronemeyer
2003/0095540	A1	5/2003	Mulligan et al.
2003/0100326	A1	5/2003	Grube et al.
2003/0107514	A1	6/2003	Syrjarinne et al.
2003/0114206	A1	6/2003	Timothy et al.
2003/0151507	A1	8/2003	Andre et al.
2003/0163287	A1	8/2003	Vock et al.
2003/0182052	A1	9/2003	DeLorme
2003/0204132	A1	10/2003	Suzuki et al.
2004/0034470	A1	2/2004	Workman
2004/0046637	A1	3/2004	Wesby Van Swaay
2004/0114731	A1	6/2004	Gillett et al.
2004/0117108	A1	6/2004	Nemeth
2004/0192352	A1	9/2004	Vallstrom et al.
2004/0233065	A1	11/2004	Freeman
2005/0250440	A1	11/2005	Zhou et al.
2006/0173444	A1	8/2006	Choy et al.
2007/0156286	A1	7/2007	Yamauchi
2008/0021645	A1	1/2008	Lau et al.
2008/0261636	A1	10/2008	Lau et al.
2009/0042540	A1	2/2009	Bodnar et al.
2011/0022533	A1	1/2011	Lau et al.
2011/0223884	A1	9/2011	Lau et al.
2012/0220266	A1	8/2012	Lau et al.
2013/0203388	A1	8/2013	Thomas et al.
2013/0297524	A1	11/2013	Lau et al.
2014/0011524	A1	1/2014	Lau et al.
2014/0067708	A1	3/2014	Lau et al.
2014/0273953	A1	9/2014	Lau et al.
2014/0278084	A1	9/2014	Lau et al.
2014/0296659	A1	10/2014	Lau et al.
2015/0011243	A1	1/2015	Thomas et al.
2015/0038168	A1	2/2015	Thomas et al.
2016/0264576		9/2015	Lau et al.
2016/0025863	A1	1/2016	Lau et al.
2016/0029175	A1	1/2016	Lau et al.
2016/0050533	A1	2/2016	Lau et al.

FOREIGN PATENT DOCUMENTS

EP	1 037 447	A3	10/2001
JP	09251069	A	9/1997
JP	11-64482		3/1999
JP	11-258325		9/1999
JP	11-289574		10/1999
JP	11-306491		11/1999
JP	2001344678	A	12/2001
WO	WO 97/14054		4/1997
WO	WO 97/41654	A1	11/1997
WO	WO 98/01769	A1	1/1998
WO	WO 98/16045	A1	4/1998
WO	WO 98/40837		9/1998
WO	WO 00/51391		8/2000
WO	WO 01/50151	A1	7/2001
WO	WO 01/63318	A1	8/2001
WO	WO 01/75700	A2	10/2001
WO	WO 02/42979	A1	5/2002
WO	WO 02/084618	A1	10/2002
WO	WO 03/012720	A1	2/2003

OTHER PUBLICATIONS

PCVtrak™ Installation and Operator's Manual, Trimble Navigation, 24623-00 Rev. A, May 1994, pp. 1-259.

"Advanced Traveler Aid Systems for Public Transportation," Final Report, Federal Transit Administration, Sep. 1994, pp. 1-131.

Campbell, Laurel, "Security—Military satellite enlisted to thwart car crime," The Commercial Appeal, Sep. 26, 1996, pp. 5B.

Law, Alex, "Week in Wheels/ . . . From a Driver's Notebook," Newsday, Inc., Sep. 20, 1996, pp. C03.

Cortez, Angela, "Springs police can track thief, vehicles," The Denver Post, Sep. 10, 1996, pp. B-01.

"OnGuard Tracker Nabs Auto Burglar," Global Positioning & Navigation News, vol. 6, No. 16, Aug. 8, 1996.

"OnGuard Tracker Nabs Auto Burglar," Section: Financial News, PR Newswire, Jul. 29, 1996.

Nauman, Matt, "Pressing the Panic Button: Car Security Enters a New Age with Cellular Phones and Satellites that Watch Over You," San Jose Mercury News, Jun. 21, 1996, pp. 1G.

"Monday Briefing" San Antonio Express-News, p. 1, Part B, Jun. 10, 1996.

"OnGuard Tracker Makes Debut on 'One Lap of America'," PR Newswire, Jun. 7, 1996.

"OnGuard Tracker Makes Debut on 'One Lap of America'," Southwest Newswire, Jun. 7, 1996.

Dominguez, Raul, "Women get their day in sun—American Golf planning events nationwide May 18," San Antonio Express-News, Apr. 18, 1996, pp. 2, part B.

"Vehicle Navigation Units Being Measured in Luxury Autos," Global Positioning & Navigation News, vol. 6, No. 7, Apr. 4, 1996.

"Advanced Business Sciences, Inc. Announces Completion of Acquisition of Comguard of Illinois," Business Wire, Aug. 26, 1998.

"Advanced Business Sciences, Inc. Announces Filing With Securities and Exchange Commission," Business Wire, Jun. 25, 1999.

"Advanced Business Sciences, Inc. Announces Preliminary Fourth Quarter 1998 Revenue Results," Business Wire, Feb. 4, 1999.

"Business People Burnsy's Grill Names Two," Omaha World-Herald, Section Business, p. 4M, Oct. 20, 1996.

"Company Sees Prisoner Tracking and Monitoring Market Niche," Global Positioning & Navigation News, vol. 6, No. 10, May 16, 1996.

GPS-Based Personal Monitoring Systems Offered to Corrections, Private Market, Global Positioning & Navigation News, vol. 8, No. 11, Jun. 3, 1998.

GPS tracks parolees, probationers, Corrections Professional, vol. 5, No. 6, Nov. 19, 1999.

High-Tech System Tracks Offenders—Satellites Watching Criminals, Business Wire, Nov. 14, 1997.

Briefs, Global Positioning & Navigation News, vol. 9, No. 4, Feb. 24, 1999.

Dunkelberger, Lloyd, "Lawmakers question criminal-tracking system," Sarasota Herald-Tribune (Florida), pp. 16A, Nov. 28, 1999.

Powell, Barbara. "New gadgets help drivers find their way," Fort Worth Star-Telegram (Texas), p. 1, Jan. 20, 1997.

"New Service Lets Corrections Agencies Track Offenders by Satellite," PR Newswire, Jan. 11, 1999.

"New Service Lets Corrections Agencies Track Offenders by Satellite; SecutityLink Offers "GPS" Tracking for Offenders on Electronic Monitoring—Sandusky Municipal Court Adopts Technology for Local Offenders," PR Newswire, Jan. 12, 1999.

"New Service Lets Corrections Agencies Track Offenders by Satellite; SecurityLink Offers 'GPS' Tracking for Offenders on Electronic Monitoring," PR Newswire, Section: Financial News, Jan. 11, 1999.

"New Service Lets Corrections Agencies Track Offenders by Satellite," Satellite Today, vol. 2, No. 8, Jan. 13, 1999.

"Prisoner Security Monitoring Company Grabs Contracts for GPS-Based System," Global Positioning & Navigation News, vol. 7, No. 1, Jan. 15, 1997.

Atwater, Andi, "Proposal seeking 24-hour tracking of all sex offenders," The News-Press (Fort Meyers, FL), pp. 1A, Feb. 20, 2000.

(56) **References Cited**

OTHER PUBLICATIONS

Briefs, Global Positioning & Navigation News, vol. 9, No. 3, Feb. 10, 1999.
Brauer, David, "Satellite 'Big Brother' Tracks Ex-Inmates; Agencies Experiment with GPS to Monitor Parolee Whereabouts," Chicago Tribune, Section: News, p. 31, Dec. 18, 1998.
"Satellite Spotlight; Eye in the Sky to Monitor Parolees," Satellite News, vol. 21, No. 15, Apr. 13, 1998.
"Satellite Spotlight: Fighting Crime From Space," Satellite News, vol. 19, No. 20, May 13, 1996.
Prohaska, Thomas J, "Satellite Will Keep Tabs on Convicts," Buffalo News (New York), Section: Local, p. 5B, Sep. 20, 1999.
"Sierra Wireless and Pro Tech Team Up on Monitoring Product," Global Positioning & Navigation News, vol. 8, No. 8, Apr. 22, 1998.
Anderson, Larry, "Technology rules at Securing New Ground," Access Control & Security Systems Integration, Section: Industry Outlook; ISSN 1084-6425, Dec. 1999.
Trimble Navigation Warns 2nd-Quarter Earnings to Miss Target, Dow Jones Business News, Jul. 10, 1998.
"Trimble Navigation's Net Income Skidded 93% Amid Order Delays," Dow Jones Business News, Jul. 23, 1998.
Briefs, Global Positioning & Navigation News, vol. 9, No. 2, Jan. 27, 1999.
Briefs, Global Positioning & Navigation News, vol. 9, No. 14, Jul. 14, 1999.
Dailey et al. "Automatic Transit Location System," Final Research Report, 55 pgs., Feb. 1996.
Maguire, Jr. et al. "SmartBadges: a wearable computer and communication system," codes/CASHE '98, 47 pgs., 1998.
Koshima et al. "Personal locator services emerge," IEEE Spectrum, Feb. 2000, pp. 41-48.
Zygowicz et al. "State of the Art in Automatic Vehicle Location Systems," Center for Urban Transportation Studies, University of Wisconsin, Milwaukee, Feb. 1998.
Ashworth, Jon. "Big brother is watching you," The Times (London), Section: Features, May 7, 1999.
"Car Thieves Take the "Bait" in Michigan; Two Suspects Reeled in With OnGuard," Business Wire, Sep. 11, 1997.
Sauer, Matthew, "Company Finds Niche by Giving Directions . . . " Sarasota Herald-Tribune (Florida), Section: Business Weekly, p. 1, Jul. 7, 1997.
"ATX Technologies Signs Nationwide Service Deal with AT&T," Global Positioning & Navigation News, vol. 7, No. 9, May 7, 1997.
"Car Thieves Take the 'Bait' in Tulsa; Two Suspects Caught Off Guard with OnGuard Once Again," PR Newswire, Section: Financial News, Jan. 8, 1997.
"Car Thieves Take the 'Bait' in Tulsa; Two Suspects Caught Off Guard with on Guard," PR Newswire, Section: Financial News, Dec. 9, 1996.
Jackson, Terry, "Smart Cars Whether by Satellite or the Internet, High-Tech Devices and Services May Make Crumpled Road Maps A Thing of the Past," The Miami Herald, Section: Travel, p. 1J, Oct. 6, 1996.
"San Antonio Personal Security Company Links Up with Senior PGA Golfer," PR Newswire, Section: Financial News, Apr. 1, 1996.
"San Antonio Personal Security Company Links Up with Senior PGA Golfer," Southwest Newswire, Apr. 1, 1996.
Business Briefs, San Antonio Express-News, Mar. 25, 1996.
"ATX Research Signs Exclusive Sales Agreement with Arizona Company," PR Newswire, Mar. 21, 1996.
"ATX Research Signs Exclusive Sales Agreement with Arizona Company," Southwest Newswire, Mar. 21, 1996.
"Automotive GPS Satellite/Safety System Race Is On," Southwest Newswire, Feb. 20, 1996.
"Dealerships Can Track Down New Aftermarket Revenues," PR Newswire, Feb. 9, 1996.
"ATX Research Unveils New Stealthtrac Capability," PR Newswire, Feb. 9, 1996.
"Dealerships Can Track Down New Aftermarket Revenues," Southwest Newswire, Feb. 9, 1996.
Briefs, Global Positioning & Navigation News Wire, vol. 6, No. 2, Jan. 24, 1996.
"ATX Research Provides Police Departments With Onguard Personal Security and Vehicle Tracking System," PR Newswire, Jan. 15, 1996.
"ATX Research Provides Police Departments With Onguard Personal Security and Vehicle Tracking System," Southwest Newswire, Jan. 15, 1996.
"ATX Research Relocates to New Corporate Headquarters," PR Newswire, Dec. 12, 1995.
"ATX Research Relocates to New Corporate Headquarters," Southwest Newswire, Dec. 12, 1995.
"Texas invention tracks stolen cars, lets driver call for help," The Vancouver Sun, Oct. 20, 1995.
"San Antonio Company Unveils Satellite/Cellular Personal Security System," PR Newswire, Oct. 3, 1995.
"San Antonio Company Unveils Satellite/Cellular Personal Security System," Southwest Newswire, Oct. 3, 1995.
Office Action for U.S. Appl. No. 12/214,434, dated Dec. 7, 2010.
Notice of Allowance for U.S. Appl. No. 12/214,434, dated Feb. 9, 2011.
Office Action for U.S. Appl. No. 13/113,972, dated Aug. 11, 2011.
Notice of Allowance for U.S. Appl. No. 13/113,972, dated Nov. 28, 2011.
Notice of Allowance for U.S. Appl. No. 13/113,972, dated Apr. 4, 2012.
Office Action for U.S. Appl. No. 13/459,025, dated Sep. 13, 2012.
Notice of Allowance for U.S. Appl. No. 13/459,025, dated Oct. 17, 2012.
Notice of Allowance for U.S. Appl. No. 13/459,025, dated Apr. 8, 2013.
U.S. Appl. No. 13/802,594, filed Mar. 13, 2013.
Office Action for U.S. Appl. No. 13/802,594, dated May 8, 2014.
Notice of Allowance for U.S. Appl. No. 13/802,594, dated Oct. 27, 2014.
Notice of Allowance for U.S. Appl. No. 13/802,594, dated Feb. 2, 2015.
"352C22 Miniature Low Profile ICP Accelerometer," Precision Accelerometers, PCB Piezoelectronics Products—SVS Division, webpages, pp. 1-2 (downloaded Apr. 11, 2002: www.pcb.com/products/svs/svs352c22.html).
"3G Mobile Internet Revolution, . . . only with Location Based Services!" pp. 1, (downloaded Aug. 10, 2002: http://webhome.idirect.com/~dental/3glocator/home.htm).
"Airline Cargo Containers," Case Study, RJI Incorporated, webpages, pp. 1-2 (downloaded Mar. 16, 2002: www.rji.cc/casestudies/airlinecargocontainers.html).
"Airline Food Carts," Case Study, RJI Incorporated, webpages, pp. 1-2 (downloaded Mar. 16, 2002: www.rji.cc/casestudies/airlinefoodcarts.html).
"An Introduction to SnapTrack Server-Aided GPS Technology," SnapTrack Inc., Apr. 3, 2007.
Archived page entitled "Money-Back Guarantee Policy" from fedex.com, archived by the Internet Archive on Aug. 17, 2000.
"Audiovox Intros GPS, Bluetooth Phone;" INT Media Group, Inc. (allNetDevices), Apr. 5, 2002. (downloaded: www.allnetdevices.com/wireless/news/2001/1/15/audiovox_intros.html).
"Carrier and end-user applications for wireless location systems," TruePosition, Inc., http://www.trueposition.com/spie_app.htm, downloaded, Jul. 30, 2000, pp. 1-7.
"Danger -Products" and "Hiptop Communicator Brochure," Danger, Inc., downloaded Oct. 26, 2002: www.danger.com/products.php).
"Developing a GPSs for the Global Supply Chain," Aberdeen Group, Inc., Executive White Paper, Jun. 2002.
"Devices for Text Messages in Deutsche Telekom's fixed network have already found their way into many households," Deutsche Telekom AG, Press Release, Mar. 13, 2002, pp. 1-2.
"Digital/Analog Compass Sensors" and "1655 Digital Compass Sensor," webpages, The ADRobson Company, Inc., pp. 1-2 (downloaded Apr. 11, 2002: www.dinsmoresensors.com/index.html).
"EarthTrack™ Vehicle Tracking Systems," Outfitter Satellite, Inc., 1998 (downloaded Jan. 22, 2000).

(56) **References Cited**

OTHER PUBLICATIONS

"Enhanced Tracking," United Parcel Service of America, Inc. (UPS), webpages, pp. 1-2 (downloaded Jun. 1, 2002: www.ups.com/myupsinfo/info/etrack?pnav=stdservice).
"Fleet Management Systems—Asset Tracking Devices," Axiom Navigation Inc., 2000-2001 (downloaded Oct. 19, 2002: www.axiomnav.com/Prod_Systems/prod_system.asp).
"Frozen Food Warehouse," Case Study, RJI Incorporated, webpages, pp. 1-3 (downloaded Mar. 16, 2002: www.rji.cc/casestudies/frozenfoodwarehouse.html).
"FunMail Launches on the NTT DoCoMo i-mode network," FunMail, Press Release, May 1, 2001, pp. 1-2.
"Global Cell Phone Location," Axiom Navigation Inc., 2000-2001 (downloaded Oct. 19, 2002: www.axiomnav.com/Prod_Global/prod_global.asp).
"Global Locating Services," SkyBitz, webpage, p. 1, (downloaded Nov. 15, 2002: www.skybitz.com/services/gls.html).
"GLS Communicator," SkyBitz, webpages, pp. 1-2, (downloaded Nov. 15, 2002: www.skybitz.com/gls/communicator.html).
"Guide to Tracking Info.," Nippon Express, website page, p. 1 (downloaded Jun. 9, 2002: www.nittsu.co.jp/edoc/howtoe.htm).
"Introduction to SMS," by C. Tull of Anywhere YouGo.com, pp. 1-4 (downloaded:www.devx.com/wireless/articles/SMS/SMSintro-asp), Aug. 10, 2002.
"IO Data Develops GPS Adapter for I-Mode Mobile," AsiaBizTech, Sep. 17, 2002, pp. 1-2.
"Locate Networks: Our Service," Locate Networks, webpages, pp. 1-7 (downloaded Sep. 26, 2002: www.locatenetworks.com/).
"MMS phones: Don't believe the hype," CNN.com/SCI-TECH, Aug. 8, 2002, pp. 1-3.
"Mobile Location Based Services: Cell Tracking Devices of People & Thongs . . . ," pp. 1-2, (downloaded Aug. 10, 2002: http://3glocate.com).
"MoniTrack," Case Study, RJI Incorporated, webpages, pp. 1-2 (downloaded Mar. 16, 2002: www.rji.cc/technology/telematic.html).
"My ups.com Benefits," United Parcel Service of America, Inc. (UPS), webpage, p. 1 (downloaded Apr. 13, 2002: www.ups.com/myupsinfo/info/benefits?pnav=stdsservice).
"NavMate® Navigation System," Visteon Corporation, webpage, pp. 1-2 (downloaded Jun. 21, 2002: www.visteon.com/technology/automotive/navmate.html).
"News," SkyBitz, webpages, pp. 1-8, (downloaded Nov. 15, 2002: www.skybitz.com/about/news.html).
"Pakhound: Your Watchdog in the Shipping Industry," website pages, pp. 1-3 (downloaded Jun. 9, 2002: www.pakhound.com/fact.asp).
"Parkwatch and Wherenet Unveil the First Amusement Visitor Locating system," ParkWatch, Press Release, Jun. 27, 2000.
"pulver.com's Location Based Services Report," pulver.com, Inc., Oct. 2001, pp. 1-17 (downloaded Jun. 4, 2002: www.pulver.com/lbsreport/lastbsreport.02/oct01.txt).
"Radio Frequency Identification (RFID)," Case Study, RJI Incorporated, webpage, p. 1 (downloaded Mar. 16, 2002: www.rji.cc/technology/rfid.html).
"Real Time Location System (RTLS)," Case Study, RJI Incorporated, webpage, p. 1 (downloaded Mar. 16, 2002: www.rji.cc/technology/rtls.html).
"Real-Time Warehouse Tracking," Case Study, RJI Incorporated, webpages, pp. 1-2 (downloaded Mar. 16, 2002: www.rji.cc/casestudies/rtwarehousetracking.html).
"Savi Reusable Transport Container," Savi Technology, Inc., Apr. 30, 2002, pp. 1-2.
"Send images to i-mode phones," Mobile Media Japan, 2001, pp. 1-3.
"Ski Rental with Auto ID and Tracking," Case Study, RJI Incorporated, webpages, pp. 1-2 (downloaded Mar. 16, 2002: www.rji.cc/casestudies/skirentalcompany.html).
"SnapTrack and SignalSoft Corp. Team Up to Trial Location-based Information Service for GSM Test Group," Press Release, SnapTrack Inc., Dec. 6, 1999.
"SnapTrack Awarded Additional Key Patents for Enhanced GPS System," Press Release, SnapTrack Inc., Jan. 4, 2000.
"Start-up crams single chip with phone, GPS and Bluetooth," CNET Network, Inc. (ZDNET), Mar. 22, 2002 (downloaded: http://news.zdnet.co.uk/story/0,t284-x2107163,00.html).
"Status Icons/Messages," Yahoo! Messenger Help, Yahoo! Inc., 2002, pp. 1-2.
"Technical Applications of Our Current Technology," Aetherwire, webpages, pp. 1-4 (downloaded Mar. 16, 2002: www.aetherwire.com/CDROM/General/appl1.html).
"The Always on Network," Position Paper, Nortel Networks, 2002.
"Theme Park Visitors & Cashless Purchasing," Case Study, RJI Incorporated, webpages, pp. 1-2 (downloaded Mar. 16, 2002: www.rji.cc/casestudies/themepark.html).
"Track Shipments—Detailed Results," FedEx, webpages, pp. 1-2 (downloaded Oct. 29, 2002: www.fedex.com).
"Track Your FedEx Shipments via Email," FedEx, webpages, pp. 1-2 (downloaded Oct. 29, 2002: www.fedex.com).
"Tracking Helpful Tips," United Parcel Service of America, Inc. (UPS), webpages, pp. 1-2 (downloaded Jun. 1, 2002: www.ups.com/tracking/nm_help.html).
"Trimble and Rosum Team to Develop Universal Positioning Technology," Trimble Navigation, Inc., News Release, Feb. 27, 2003.
"Turning Position Into Knowledge," SkyBitz, webpage, p. 1, (downloaded Nov. 15, 2002: www.skybitz.com).
"UPS Package Tracking," United Parcel Service of America, Inc. (UPS), webpages, pp. 1-2 (downloaded Apr. 13, 2002: www.ups.com/tracking/tracking.html).
"UPS Wireless Solutions," United Parcel Service of America, Inc. (UPS), webpage, p. 1 (downloaded Apr. 13, 2002: www.ups.com/myupsinfo/info/wireless?pnav=stdsservice).
"Welcome to Iship, Inc.," iShip, Inc., webpages, pp. 1-2, (downloaded Jun. 9, 2002: www.iship.com/).
"Welcome to Traker Systems," Tracker Systems, webpages, pp. 1-2 (downloaded Jun. 9, 2002: www.trakersystems.com).
"What are Instant Messages?" Yahoo! Messenger Help, Yahoo! Inc., 2002, pp. 1.
"What is "3G" technology?," CNN.com/SCI-TECH, Oct. 22, 2001, pp. 1-3.
"What is a Friend List?" Yahoo! Messenger Help, Yahoo! Inc., 2002, pp. 1.
"Wherify Wireless and SiRF Team to Deliver Child Locator System," Wherify Wireless, Inc., Press Release, Mar. 19, 2001, pp. 1-2.
"Wherify Wireless Breakthrough in Location-Based Services," Mobilemag.com, Feb. 28, 2001, p. 1.
"Wherify Wireless GPS Locator for Kids User Guide," Wherify Wireless, Inc., 2003, pp. 1-106.
"Wherify Wireless Location Services," Wherify Wireless, Inc., webpages, pp. 1-5 (downloaded: Mar. 25, 2003: www.wherifywireless.com/prod_watches.htm).
"X-GPS™—Hybrid GPS Location Server Solution," Axiom Navigation Inc., 2000-2001 (downloaded Oct. 19, 2002: www.axiomnav.com/Prod_Global/x-gps.asp).
"Yahoo! Messenger—Sending Messages to a Mobile Phone," Yahoo! Messenger, Yahoo! Inc., 2002, pp. 1-7 (downloaded Oct. 27, 2002: http://messenger.yahoo.com/messenger/wireless/pc2sms/tour1.html(through /tour7.html)).
"Yahoo! Messenger for Text Messaging," Yahoo! Messenger, Yahoo! Inc., 2002, pp. 1-10 (downloaded Oct. 27, 2002: http://messenger.yahoo.com/messenger/wireless/smsmsgr/tour1.html (through /tour7.html)).
"Yahoo! Messenger for WAP," Yahoo Messenger, Yahoo! Inc., 2002 (tours 1-9), pp. 1-17 (downloaded Oct. 27, 2002: www.messenger.yahoo.com/messenger/wireless/wap/tour1.html(through /tour9.html)).
Accelerometers—General Purpose, LP Series, Crossbow Technology, Inc., data sheet, pp. 1-3 (downloaded Apr. 11, 2002: www.xbow.com/Products/Accelerometers.htm).

(56) **References Cited**

OTHER PUBLICATIONS

Bickers, "Eyes in the sky," SafeTzone Technology Corporation, webpages, 2001, pp. 1-3 (downloaded: www.safetzone.com/newsKiosk.asp).
Chertkoff, Rachel, "Vehicle Locator Systems," Pager Technology, pp. 1-2, 1998.
Commercial Uses for LoJack (webpage), LoJack Corporation, downloaded Jan. 22, 2000.
Crossbow Product Guide—Accelerometers, Crossbow Technology, Inc., webpages, pp. 1-3 (downloaded Apr. 11, 2002: www.xbow.com/Products/Accelerometers.htm).
Culler, D. et al., "MICA: The Commercialization of Microsensor Motes," Sensors (Apr. 1, 2002), pp. 1-5.
Darabi et al., "A 2.4-GHz CMOS Transceiver for Bluetooth," IEEE Journal of Solid-State Circuits, vol. 36, No. 12 (Dec. 2001), pp. 2016-2024.
Delphi and MobileAria Demonstrate True Hands Free In-Vehicle Mobile Productivity Services At CES, Press Release, Delphi Automotive Systems, Jan. 8, 2002 (downloaded Apr. 5, 2002: www.delphiauto.com/news/pressRelease/pr6828-01082002).
F. Rivera, "Special Report: Keeping Tabs on Your Teen," 7 News, Boston, Apr. 30, 2002, pp. 1-3.
FedEx Insight, FedEx, webpages, pp. 1-11 (downloaded Oct. 29, 2002: www.fedex.com).
Fraden, J., Handbook of Modern Sensors: Physics, Designs and Applications, Second Edition, Springer-Verlag (1996), cover, pp. 310-354, 384-431, 458-493, and 513-528.
GPS2000, Omega Research and Development, Inc., webpages, pp. 1-9 (pp. 7-9 pertain to an online tour) (downloaded Jul. 14, 2003: www.gps2000online.com/).
Grimes, et al., "Wireless Magnetoelastic Resonance Sensors: A Critical Review," Sensors, vol. 2 (Jul. 23, 2002), pp. 294-313.
Helfenstein et al., Circuits and Systems for Wireless Communications, Kluwer Academic Publishers (2000), cover pages, pp. 3-7, 9-34, and 37-47.
Hill et al., "System Architecture Directions for Networked Sensors," ACM/ASPLOS-IX (Nov. 2000), 12 pages.
IMVironment, Yahoo! Messenger Yahoo! Inc., 2002, pp. 1-12 (downloaded (including) Oct. 27, 2002: http://help.yahoo.com/help/us/mesg/imv/imv-01.html(through /index5.html).
J.Wrolstad, "Chrysler Claims First With Bluetooth Mobile Phone System," Wireless Newsfactor, Oct. 26, 2001.
K. Hill, "Prada Uses Smart Tags to Personalize Shopping," CRMDaily.com, Apr. 24, 2002., pp. 1-4.
Madou, Marc J., Fundamentals of Microfabrication: the Science of Miniaturization, Second Edition, CRC Press (2002) 139 pages.
K. Miyake, "Sharp to unveil 3G PDA-type cell phone," ITworld.com, Inc., Jan. 11, 2002.
Kleinknecht, William, "Juvenile authorities want satellite tracking for felons," The Star-Ledger of New Jersey, Nov. 18, 1997.
LoadTrak, pp. 1-2 (downloaded Jun. 4, 2002: www.load-trak.com).
Mainwaring et al., "Wireless Sensor Networks for Habitat Monitoring," ACM (Sep. 28, 2002) pp. 88-97.
Marek, "The Unstoppable SnapTrack," Wireless Week, Dec. 18, 2000.
Motorola Consumer Catalog: Pagers (webpage), Motorola, Inc., downloaded Jan. 19, 2000.
My.Roadway!, Roadway Express, Inc., webpages, pp. 1-2, (downloaded Jun. 9, 2002: www.quiktrak.roadway.com/cgi-bin/quiktrak).
Package, Dictionary.com, http://dictionary.reference.com/browse/package (last accessed Nov. 6, 2013), 3 pgs.
"Package" definition, Oxford English Dictionary (OED) Online, Oxford University Press, Jun. 2014 (printed Aug. 1, 2014).
"Portable" definition, Oxford English Dictionary (OED) Online, Oxford University Press, Jun. 2014 (printed Aug. 1, 2014).
Packtrack™, PackTrack.com, webpages, pp. 1-2 (downloaded Jun. 9, 2002: www.packtrack.com).
Precision Accelerometers, PCB Piezoelectronics Products—SVS Division, webpages, pp. 1-2 (downloaded Apr. 11, 2002: www.pcb.com/products/svs/index.html).
Rabinowitz and Spilker, Jr., "A New Positioning System Using Television Synchronization Signals," Rosum Corporation, pp. 1-11 (downloaded May 21, 2003).
Rabinowitz and Spilker, Jr., "Positioning Using the ATSC Digital Television Signal," Rosum Corporation Whitepaper, Rosum Corporation (downloaded May 21, 2003).
Razavi, Behzad, RF Microelectronics, Prentice Hall (1998), cover pages, pp. 1-10, and 118-297.
Real Time Locating System, Executive Summary, Technology Systems International, Inc., 2007.
Rofougaran et al., "A Single-Chip 900-MHz Spread-Spectrum Wireless Transceiver in 1-μm CMOS—Part II: Receiver Design," IEEE Journal of Solid-State Circuits, vol. 33, No. 4 (Apr. 1998), pp. 535-547.
Ryan, "Catching up with Dick Tracy," San Francisco Chronicle, news article, Mar. 18, 2002.
SandPiper GPS Receiver, Specification sheet by Axiom Navigation Inc. (www.axiomnav.com) 2006.
Senturia, Stephen D., Microsystem Design, Kluwer Academic Publishers (2001), cover pages, and pp. 3-14.
SiRF Debuts Revolutionary Architecture and Technologies to Further Drive GPS into the Mainstream, SiRF.com, Aug. 16, 1999 (archived Dec. 22, 1999), http://web.archive.org/web/19991222194810/http:/www.sirf.com/as_prss2_3.htm, 4 pgs.
Smart Antenna, Specification sheet by Axiom Navigation Inc. (www.axiomnav.com) 2008.
SnapTrack—Privacy Protection (webpage), SnapTrack Inc., downloaded Jan. 19, 2000.
SnapTrack—Technology At Work (webpage), SnapTrack Inc., downloaded Jan. 19, 2000.
SnapTrack in Action (webpage), SnapTrack Inc., downloaded Jan. 19, 2000.
Steyaert et al., "A 2-V CMOS Cellular Transceiver Front-End," IEEE Journal of Solid-State Circuits, vol. 35, No. 12, Dec. 2000, pp. 1895-1907.
Stilp, Louis A., "Examining the Coming Revolution in Location Services," pp. 1-11.
Strom, Stephanie. "A Wild Sleigh Ride at Federal Express," The New York Times, Dec. 20, 1994.
Swift A2 GPS Receiver, Specification sheet by Axiom Navigation Inc. (www.axiomnav.com) 2010.
Swift B2 GPS Receiver, Specification sheet by Axiom Navigation Inc. (www.axiomnav.com) 2010.
TruePosition Virtual Brochure (webpage), TruePosition, Inc.
Wong, "Fishers, golfers join the rush to GPS," San Jose Mercury News, news article, Mar. 25, 2002.
Office Action for U.S. Appl. No. 10/397,474, dated Aug. 23, 2006.
Office Action for U.S. Appl. No. 10/397,474, dated Feb. 27, 2007.
Office Action for U.S. Appl. No. 10/397,474, dated Sep. 6, 2007.
Notice of Allowance for U.S. Appl. No. 10/397,474, dated Mar. 28, 2008.
Restriction Requirement for U.S. Appl. No. 12/214,434, dated Nov. 16, 2010.
Capozza, P.T., et al. "A single-chip narrow-band frequency domain excisor for a Global Positioning System (GPS) receiver," IEEE Journal of Solid-State Circuits, vol. 35, Issue 3, 2000, pp. 401-411.

* cited by examiner

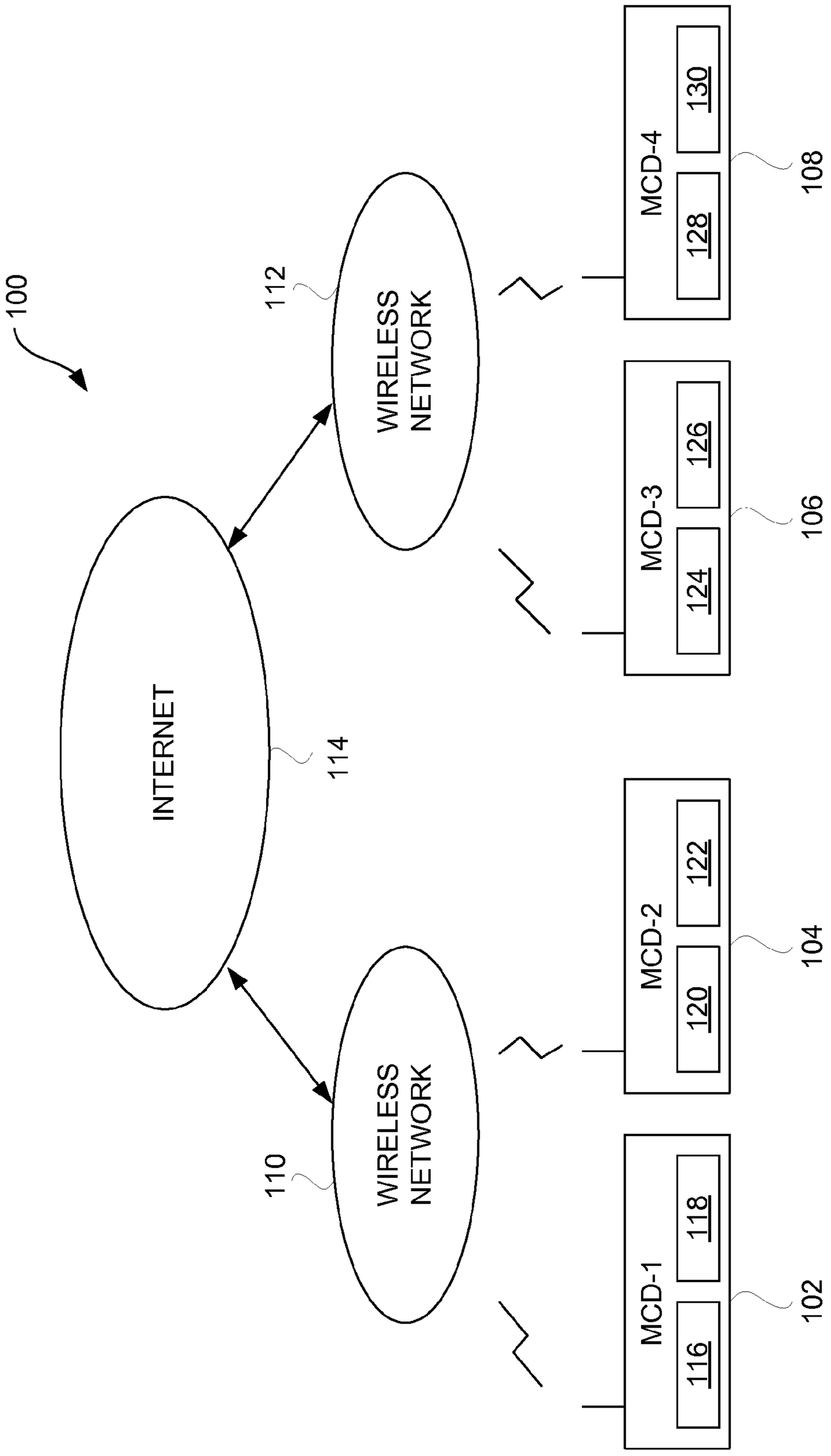

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INTERNET
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WIRELESS NETWORK
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WIRELESS NETWORK
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108

FIG. 1

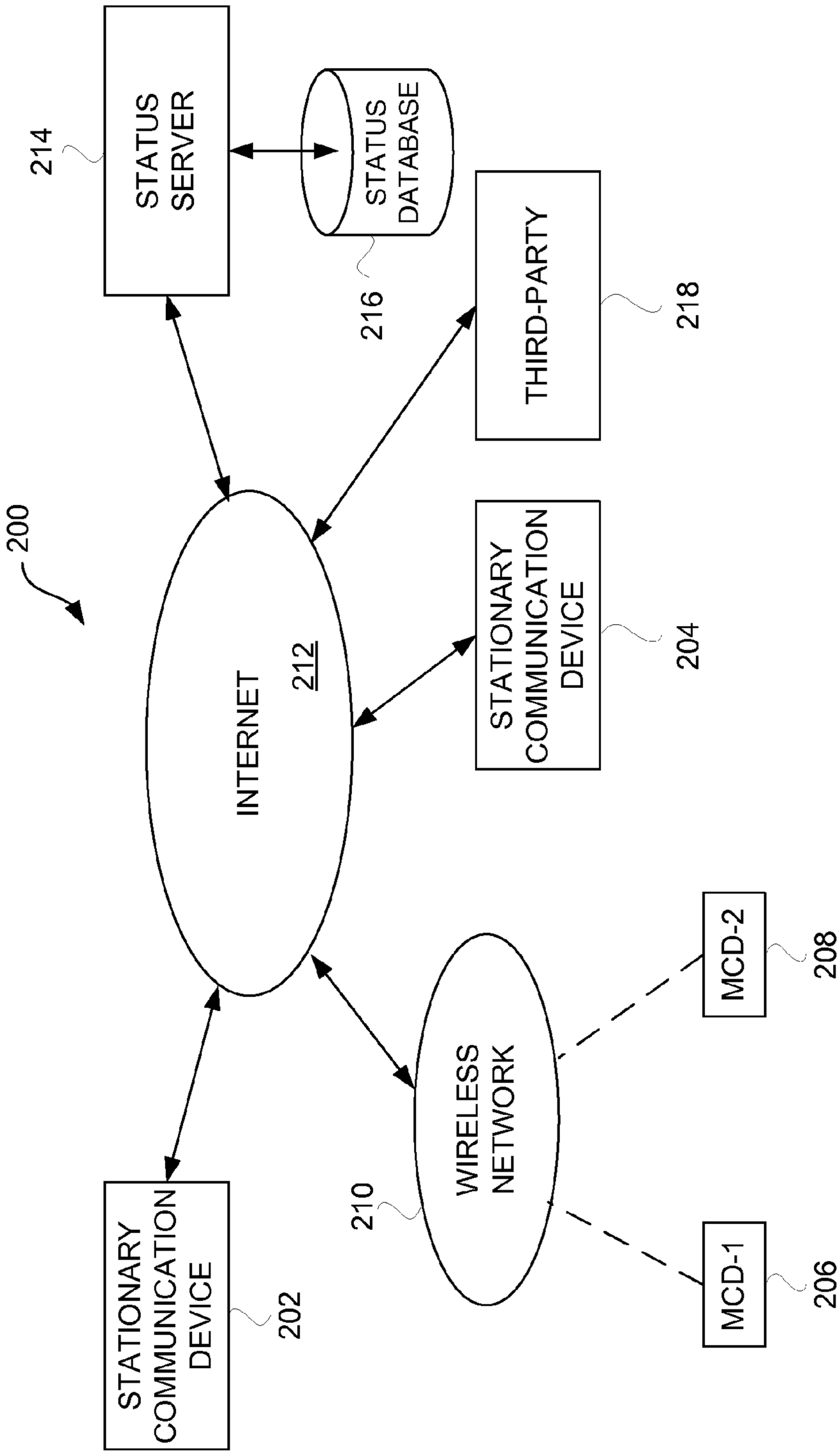

200
STATIONARY COMMUNICATION DEVICE
202
MCD-1
206
WIRELESS NETWORK
210
MCD-2
208
INTERNET
212
STATIONARY COMMUNICATION DEVICE
204
THIRD-PARTY
218
STATUS DATABASE
216
STATUS SERVER
214

FIG. 2

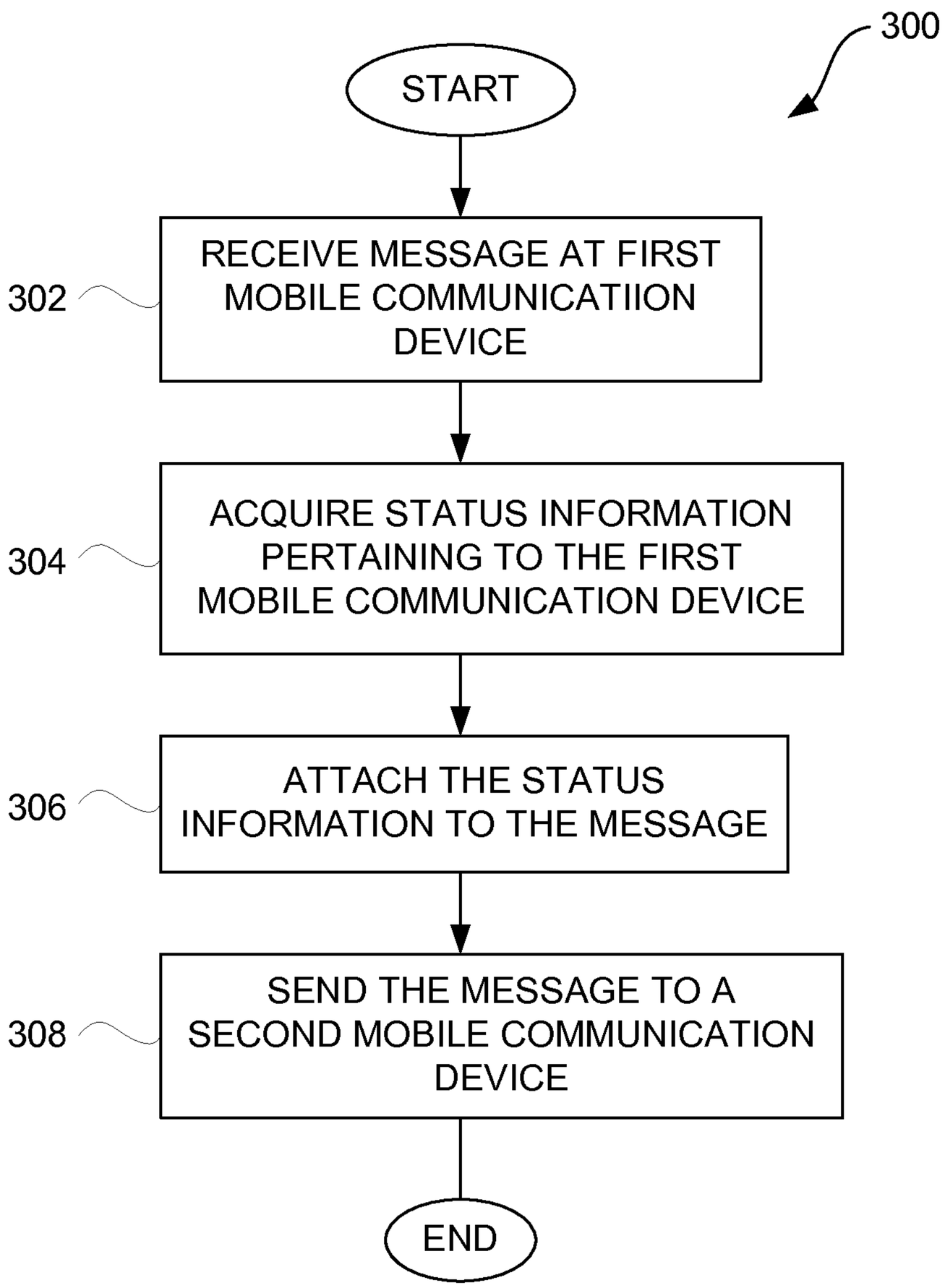

300
START
302
RECEIVE MESSAGE AT FIRST MOBILE COMMUNICATIION DEVICE
304
ACQUIRE STATUS INFORMATION PERTAINING TO THE FIRST MOBILE COMMUNICATION DEVICE
306
ATTACH THE STATUS INFORMATION TO THE MESSAGE
308
SEND THE MESSAGE TO A SECOND MOBILE COMMUNICATION DEVICE
END

FIG. 3

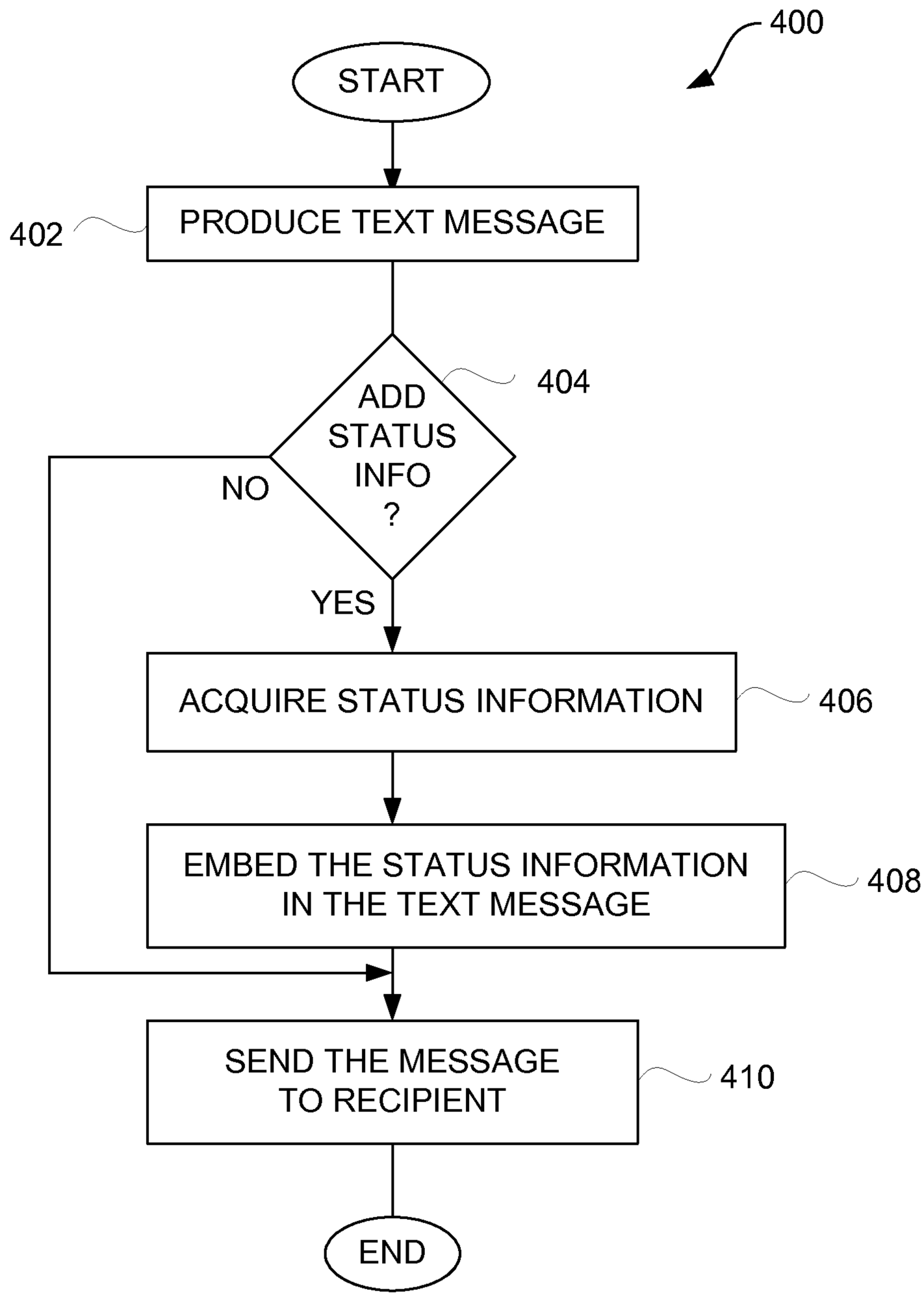

400
START
402
PRODUCE TEXT MESSAGE
404
ADD STATUS INFO ?
NO
YES
ACQUIRE STATUS INFORMATION
406
EMBED THE STATUS INFORMATION IN THE TEXT MESSAGE
408
SEND THE MESSAGE TO RECIPIENT
410
END

FIG. 4

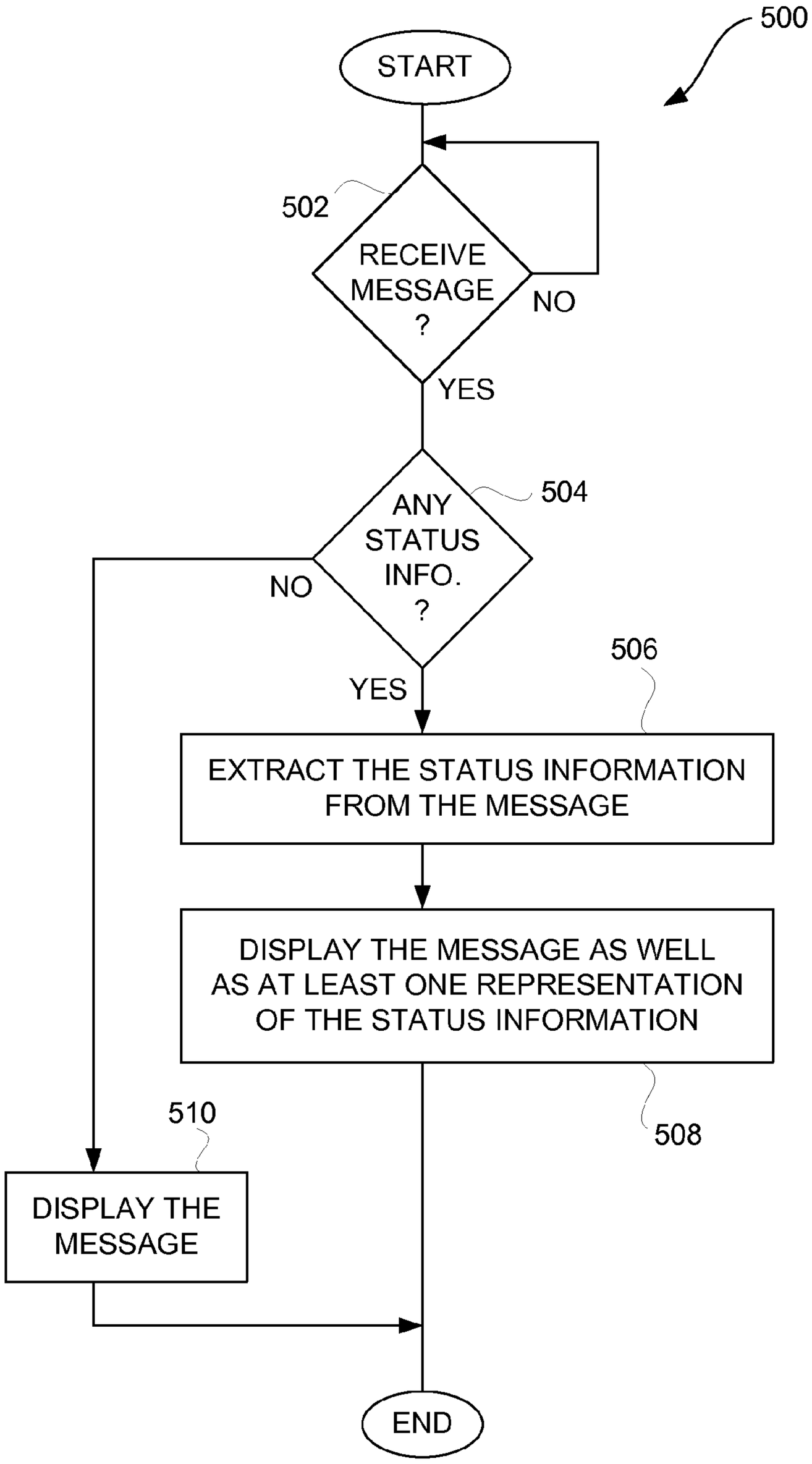

500
START
502
RECEIVE MESSAGE ?
NO
YES
504
ANY STATUS INFO. ?
NO
YES
506
EXTRACT THE STATUS INFORMATION FROM THE MESSAGE
DISPLAY THE MESSAGE AS WELL AS AT LEAST ONE REPRESENTATION OF THE STATUS INFORMATION
508
510
DISPLAY THE MESSAGE
END

FIG. 5

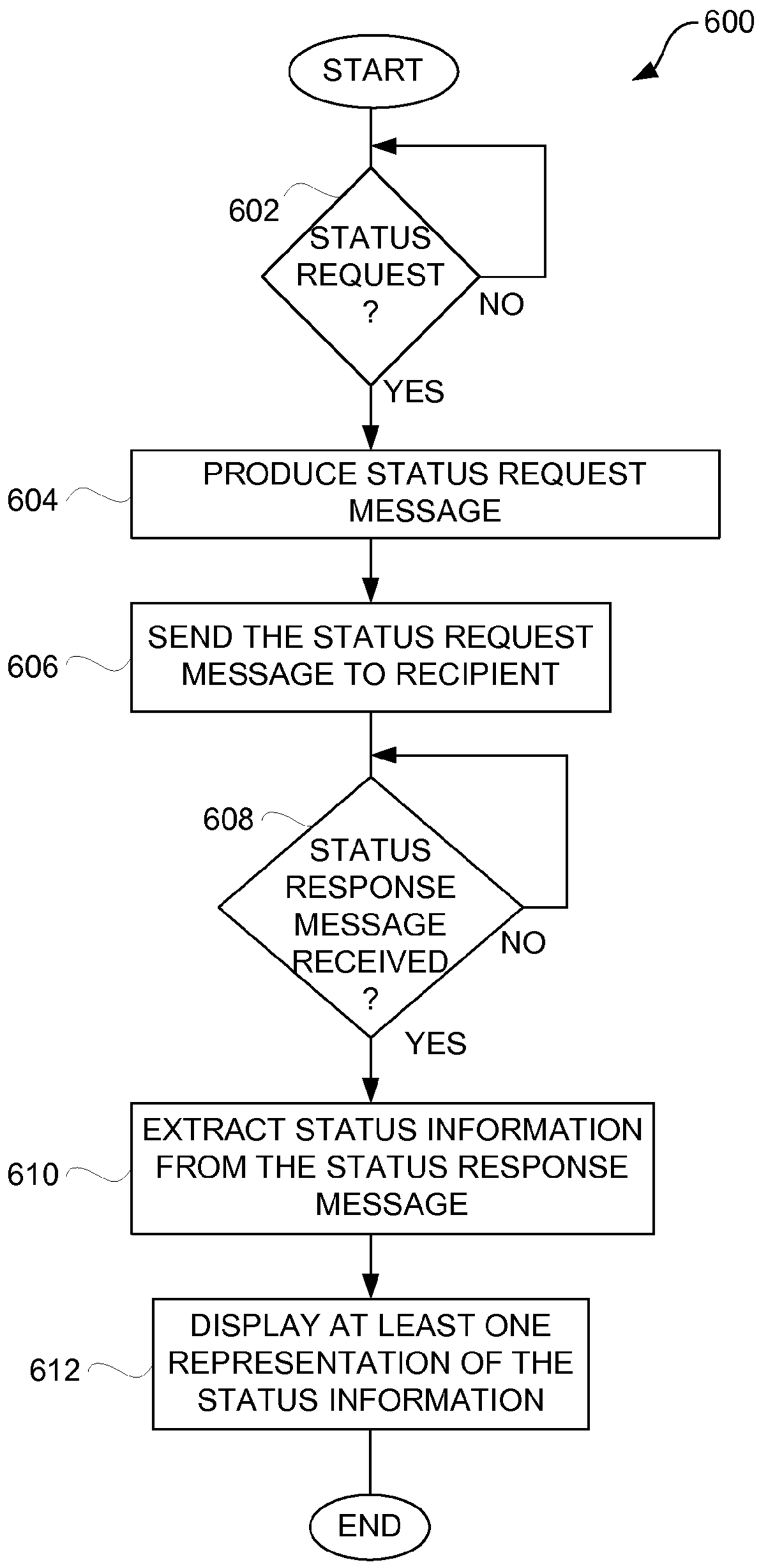

600
START
602
STATUS REQUEST ?
NO
YES
604
PRODUCE STATUS REQUEST MESSAGE
606
SEND THE STATUS REQUEST MESSAGE TO RECIPIENT
608
STATUS RESPONSE MESSAGE RECEIVED ?
NO
YES
610
EXTRACT STATUS INFORMATION FROM THE STATUS RESPONSE MESSAGE
612
DISPLAY AT LEAST ONE REPRESENTATION OF THE STATUS INFORMATION
END

FIG. 6

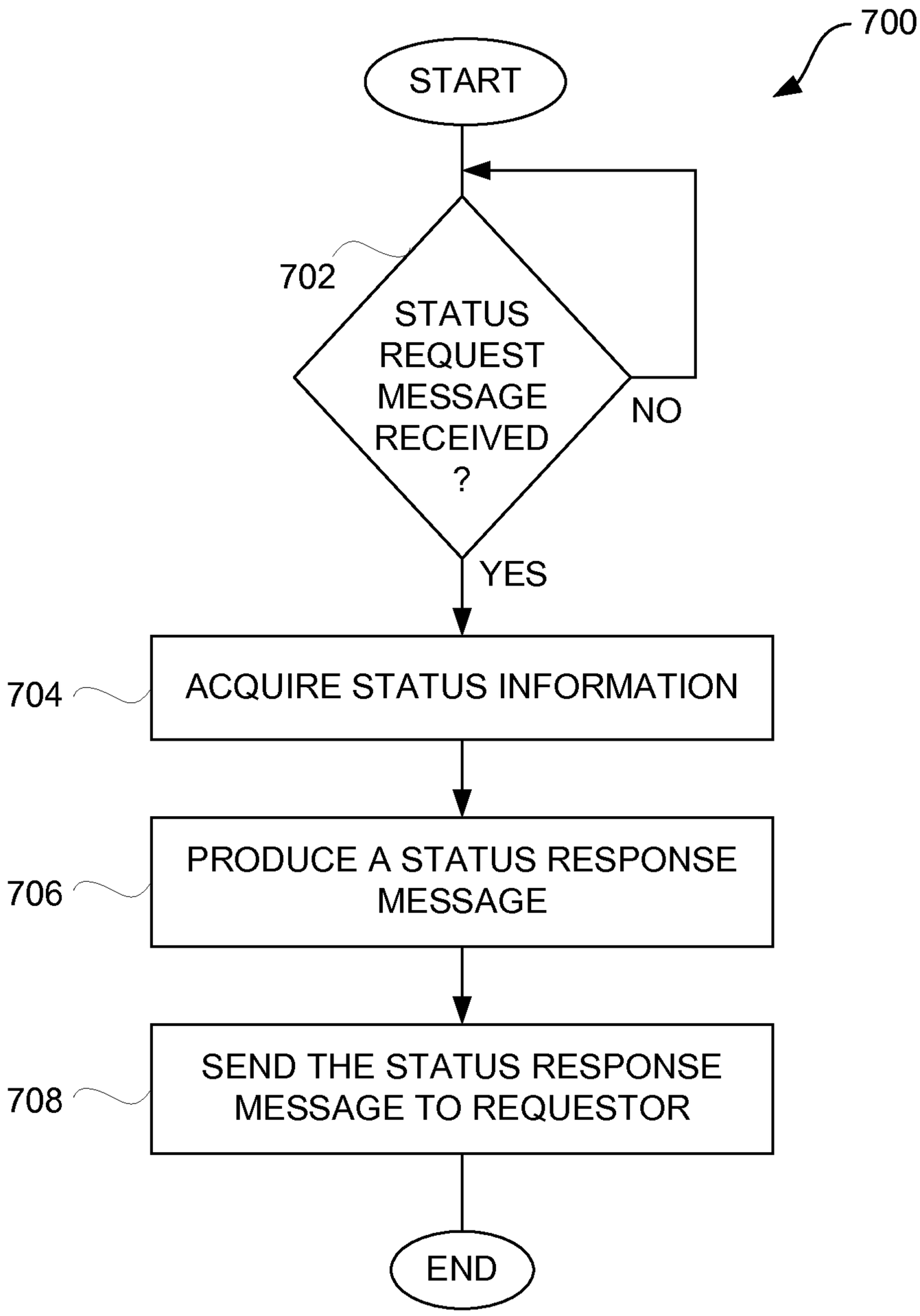

700
START
702
STATUS REQUEST MESSAGE RECEIVED ?
NO
YES
704
ACQUIRE STATUS INFORMATION
706
PRODUCE A STATUS RESPONSE MESSAGE
708
SEND THE STATUS RESPONSE MESSAGE TO REQUESTOR
END

FIG. 7

METHOD AND SYSTEM FOR ENHANCED MESSAGING

CROSS REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 13/802,594, filed Mar. 13, 2013, and entitled "METHOD AND SYSTEM FOR ENHANCED MESSAGING," (now U.S. Pat. No. 9,049,571), which is hereby incorporated by reference, which in turn is a continuation of U.S. patent application Ser. No. 13/459,025, filed Apr. 27, 2012, and entitled "METHOD AND SYSTEM FOR ENHANCED MESSAGING," (now U.S. Pat. No. 8,447,822), which is hereby incorporated by reference, which in turn is a continuation of U.S. patent application Ser. No. 13/113,972, filed May 23, 2011, and entitled "METHOD AND SYSTEM FOR ENHANCED MESSAGING," (now U.S. Pat. No. 8,176,135), which is hereby incorporated by reference, which in turn is a continuation of U.S. patent application Ser. No. 12/214,434, filed Jun. 19, 2008, and entitled "METHOD AND SYSTEM FOR ENHANCED MESSAGING," (now U.S. Pat. No. 7,953,809), which is hereby incorporated herein by reference, which in turn is a continuation of U.S. patent application Ser. No. 10/397,474, filed Mar. 26, 2003, and entitled "METHOD AND SYSTEM FOR ENHANCED MESSAGING," (now U.S. Pat. No. 7,403,972), which is hereby incorporated herein by reference, and which in turn claims benefit of: (i) U.S. Provisional Patent Application No. 60/444,198, filed Jan. 30, 2003, and entitled "SYSTEM, METHOD AND APPARATUS FOR ACQUIRING, PRESENTING, MONITORING, DELIVERING, MANAGING AND USING STATUS INFORMATION," which is hereby incorporated herein by reference; (ii) U.S. Provisional Patent Application No. 60/418,491, filed Oct. 15, 2002, and entitled "SYSTEM, METHOD AND APPARATUS FOR ACQUIRING, PRESENTING, MONITORING, DELIVERING, MANAGING AND USING STATUS INFORMATION," which is hereby incorporated herein by reference; (iii) U.S. Provisional Patent Application No. 60/404,645, filed Aug. 19, 2002, and entitled "SYSTEM, METHOD AND APPARATUS FOR ACQUIRING, PRESENTING, MONITORING, DELIVERING, MANAGING AND USING POSITION AND OTHER INFORMATION," which is hereby incorporated herein by reference; and (iv) U.S. Provisional Patent Application No. 60/375,998, filed Apr. 24, 2002, and entitled "SYSTEM, METHOD AND APPARATUS FOR ACQUIRING, PRESENTING, MANAGING AND USING POSITION INFORMATION," which is hereby incorporated herein by reference.

This application is also related to: (i) U.S. patent application Ser. No. 10/397,473, filed Mar. 26, 2003, and entitled "METHOD AND APPARATUS FOR INTELLIGENT ACQUISITION OF POSITION INFORMATION," (now U.S. Pat. No. 6,975,941); (ii) U.S. patent application Ser. No. 10/397,472, filed Mar. 26, 2003, and entitled "METHODS AND APPARATUS TO ANALYZE AND PRESENT LOCATION INFORMATION," (now U.S. Pat. No. 7,218,938); (iii) U.S. patent application Ser. No. 10/397,637, filed Mar. 26, 2003, and entitled "METHOD AND SYSTEM FOR PROVIDING SHIPMENT TRACKING AND NOTIFICATIONS," (now U.S. Pat. No. 7,212,829); (iv) U.S. patent application Ser. No. 10/397,641, filed Mar. 26, 2003, and entitled "METHOD AND SYSTEM FOR PERSONALIZED MEDICAL MONITORING AND NOTIFICATIONS THEREFOR," (now U.S. Pat. No. 7,905,832); (v) U.S. patent application Ser. No. 10/397,640, filed Mar. 26, 2003, and entitled "INEXPENSIVE POSITION SENSING DEVICE," (now U.S. Pat. No. 7,321,774); (vi) U.S. patent application Ser. No. 10/397,512, filed Mar. 26, 2003, and entitled "APPLICATIONS OF STATUS INFORMATION FOR INVENTORY MANAGEMENT."

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to communication devices and, more particularly, to enhanced messaging for communication devices.

2. Description of the Related Art

Today, electronic mail (email) is a common mode of communication. One person, acting as a sender, composes an email message and then sends the email message to another person designated as a recipient. The sender composes the email message by interacting with a communication device. The recipient is able to read the email message by interacting with another communication device. Communication devices are often personal computers or mobile telephones. These communication devices can receive and transmit electronic mail messages over a network. The network can be public or private as well as wired or wireless.

Although email is an effective means of communication, when a sender is using a mobile telephone, composing an email message can be tedious and difficult. User interfaces can provide limited assistance to users such as by creating email messages through word prediction, predetermined responses, etc. Nevertheless, given the difficulties with composing messages, email messages from mobile telephones in most cases are relatively short. Recently, communication devices, including mobile telephones, have been able to send and receive instant messages, which are short text messages sent and received in near real time between communication device.

Apart from sending and receiving email messages, mobile telephones can also display the location or availability (i.e., online or offline) of other users via their mobile telephones. This information is provided by a wireless service provider that monitors location or availability of users via their mobile phones. Unfortunately, such information needs the assistance of wireless service providers and tends not to be widely available. Moreover, if such information is available, the information would very likely not be current and thus the usefulness of the information would be limited.

Thus, there is a need for improved approaches to enhance the capabilities of messaging.

SUMMARY

Broadly speaking, the invention relates to techniques for acquiring, sending, receiving or using status information from a remote location over a network. The status information is transmitted by electronic devices over the network. The status information can be provided by one or more sensors associated with the electronic device that is transmitting the status information. The status information can be transmitted with messages so as to enhance the messages.

According to one aspect of the invention, base messages are entered by a user or automatically produced. The base messages can be text messages (including instant messages), voice messages, video messages or other types of messages. The base messages are augmented to additionally include status information, such as position and/or other conditions information. The status information is normally provided by

one or more sensors. In one implementation, base messages can be combined with status information, whereby the resulting messages are referred to as enhanced messages. These enhanced messages are electronically sent from and received at electronic devices, such as personal computers and mobile communication devices.

The invention can be implemented in numerous ways including, a method, system, device, graphical user interface, and a computer readable medium. Several embodiments of the invention are discussed below.

As a method to facilitate communication among users of mobile electronic devices user communication system for communicating between users of mobile communication devices, one embodiment of the invention can, for example, include at least the acts of: receiving message content for a text message via the first mobile electronic device; acquiring status information of the first mobile electronic device, the status information including at least position information associated with the first mobile electronic device; determining a plurality of other mobile electronic devices or users thereof that are authorized to receive the message content and the status information; determining whether at least one user selection has been provided via the first mobile communication device to indicate whether the status information is to be provided with the text message, and initiating sending of the text message including the message content along with the status information to each of the plurality of other mobile electronic devices via a wireless network, provided that it is determined that the status information is to be provided with the text message and provided that the plurality of other mobile electronic devices or users thereof are authorized to receive the text message.

As a computer readable medium including at least computer program code tangible stored thereon for facilitating communication among users of mobile electronic devices, one embodiment of the invention can, for example, include at least: computer program code for receiving message content for a text message via the first mobile electronic device; computer program code for acquiring status information of the first mobile electronic device, the status information including at least position information regarding position of the first mobile electronic device; computer program code for determining a plurality of other mobile electronic devices or users thereof that are authorized to receive the status information; computer program code for determining whether at least one indication has been received from the first mobile communication device to influence whether the status information is to be provided with the text message; computer program code for determining based at least in part on the at least one indication whether the status information is to be provided with the text message, and computer program code for initiating sending of the text message along with the status information to each of the plurality of other mobile electronic devices via at least one wireless network, provided that it is determined that the status information is to be provided with the text message and provided that the plurality of other mobile electronic devices or users thereof are authorized to receive the status information.

As a method for providing communications between computing devices, another embodiment of the invention includes at least the acts of: obtaining a message at a first mobile communication device to be delivered to a second mobile communication device; determining whether status information is to accompany the message; sending the message without any status information when it is determined that status information is not to accompany the message; and acquiring status information at the first mobile communication device and then sending the message and the status information to the second mobile communication device when it is determined that status information is not to accompany the message.

As a method for displaying a message on a display device of a computing device, one embodiment of the invention includes at least the acts of: receiving a message from another computing device over a network; determining whether the message includes at least status information; extracting the status information from the message when it is determined that the message includes at least the status information; and displaying the message and at least one representation of the status information on the display device following the extracting when it is determined that the message includes at least the status information.

As a method for displaying a message on a display device of a computing device, another embodiment of the invention includes at least the acts of: receiving a message from another computing device over a network; determining whether the message includes at least status information; extracting the status information from the message when it is determined that the message includes at least the status information; and displaying the message and at least one representation of the status information on the display device following the extracting when it is determined that the message includes at least the status information.

Other aspects and advantages of the invention will become apparent from the following detailed description taken in conjunction with the accompanying drawings which illustrate, by way of example, the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be readily understood by the following detailed description in conjunction with the accompanying drawings, wherein like reference numerals designate like structural elements, and in which:

FIG. **1** is a block diagram of an enhanced messaging system according to one embodiment of the invention.

FIG. **2** is a block diagram of an enhanced messaging system according to another embodiment of the invention.

FIG. **3** is a flow diagram of status message processing according to one embodiment of the invention.

FIG. **4** is a flow diagram of send processing according to one embodiment of the invention.

FIG. **5** is a flow diagram of display processing according to one embodiment of the invention.

FIG. **6** is a flow diagram of status retrieval processing according to one embodiment of the invention.

FIG. **7** is a flow diagram of status request processing according to one embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

The invention relates to techniques for acquiring, sending, receiving or using status information from a remote location over a network. The status information is transmitted over the network between or among electronic devices. The status information can be provided by one or more sensors associated with the electronic device that is transmitting the status information. The status information can be transmitted with messages so as to enhance the messages. The electronic devices include at least computing devices, such as personal computers, personal digital assistants, pagers, and mobile telephones.

According to one aspect of the invention, messages are enhanced through use of status information. Base messages are entered by a user or automatically produced. The base messages can be text messages (including instant messages), voice messages, video messages or other types of messages. The base messages are augmented to additionally include status information, such as position and/or other conditions information. The status information is normally provided by one or more status sensors. In one implementation, base messages can be combined with status information, whereby the resulting messages are referred to as enhanced messages. These enhanced messages are electronically sent from and received at communication devices, such as personal computers and mobile communication devices.

Different embodiments of the invention are discussed below with reference to FIGS. **1-7**. However, those skilled in the art will readily appreciate that the detailed description given herein with respect to these figures is for explanatory purposes as the invention extends beyond these limited embodiments.

According to one aspect of the invention, traditional messages transmitted between communication devices are augmented to additionally include status information, such as position and/or conditions information. The conditions information can pertain to one or more of environmental conditions, device-related conditions, or user-related conditions. One or more status sensors associated with the communication devices can capture or obtain the status information. In the case of position information, the status sensor can be a receiver, such as a Global Positioning System (GPS) receiver or other means.

FIG. **1** is a block diagram of an enhanced messaging system **100** according to one embodiment of the invention. The enhanced messaging system **100** allows electronic messages (e.g., text messages) to be sent between mobile communication devices. The electronic messages being sent can be enhanced to include status information pertaining to (i) status of the associated mobile communication devices, (ii) status associated with the environment of the mobile communication devices, and/or (iii) status of the person(s) using the mobile communication device(s).

The enhanced messaging system **100** includes mobile communication devices **102**, **104**, **106** and **108**. The mobile communication devices **102** and **104** communicate with a wireless network **110**, and the mobile communication devices **106** and **108** communicate with a wireless network **112**. The wireless networks **110** and **112** can be the same or different networks and can utilize same or different protocols. The wireless networks **110** and **112** can be coupled together and/or can couple to the Internet **114**, and can support global messaging.

The enhanced messages are sent from one of the mobile communication devices to one or more other of the mobile communication devices. These enhanced messages can include additional information about the mobile communication device, its user and/or its environment. In one embodiment, the status information can include at least position (location) information and other status information. To provide the status information, the mobile communication devices **102**, **104**, **106** and **108** can include one or more status sensors, such as position detectors, and/or one or more other types of condition sensors for different conditions regarding the communication devices. A position detector can provide position information pertaining to its corresponding mobile communication device. Similarly, a condition sensor provides condition information pertaining to conditions sensed at the corresponding mobile communication device. More particularly, the mobile communication device **102** includes a position detector **116** and at least one condition sensor **118**; the mobile communication device **104** includes a position detector **120** and at least one condition sensor **122**; the mobile communication device **106** includes a position detector **124** and at least one condition sensor **126**; and the mobile communication device **108** includes a position detector **128** and at least one condition sensor **130**.

In one embodiment, the position information is obtained from a global positioning system (GPS) receiver, which can be in a mobile communication device. In other words, the position detector can be a GPS receiver. The position information can be obtained or augmented by a local positioning system such as utilized with a local network (e.g., Bluetooth, Wi-Fi, etc.). The conditions information can vary with application. Examples of conditions that can be provided within the conditions information include environment conditions or conditions of the environment of the corresponding mobile communication device. Environment conditions include temperature, humidity, pressure, gaseous or liquid states, chemical compositions, wind speed, color composition, scent, light, sound, smoke, particle or radiation (e.g., infrared radiation). The conditions information can be pertaining to a mobile communication device itself, such as force or pressure asserted on it, or its vibration, acceleration, speed (velocity) or direction. The conditions information can also include user-related conditions. These are conditions related to the user, who is typically a living being and who may be using the corresponding mobile communication device. Examples of user-related conditions include the being's physical conditions (e.g., heart beat, temperature, pupil dilation, hunger, perspiration, tired or sick), volitional behavior (e.g., facial expressions, jumping or moving), or the user's emotional state, such as the user's mood. Examples of emotional states or moods include sad, happy, mad, stressed, or excited. Some of these conditions are not determined directly by sensors, but are instead determined indirectly through processing other sensor data.

In one embodiment, an enhanced messaging system can operate in a distributed manner with little or no centralized management for status information exchange. In other words, the exchange of status information can be peer-to-peer (e.g., from one mobile communication device to another) without an intermediate centralized server to store and manage distribution of the status information. Such an embodiment can operate without assistance from wireless networks service providers. The enhanced messaging system **100** shown in FIG. **1** is suitable for use as such an embodiment.

In another embodiment, an enhanced messaging system can operate in a centralized manner, such as shown below in FIG. **2**. In the case of a centralized system, or at least one providing centralized assistance, the status information can be stored and/or processed by a separate entity, independent of the parties sending and receiving information.

FIG. **2** is a block diagram of an enhanced messaging system **200** according to one embodiment of the invention. The enhanced messaging system **200** provides web-based enhanced messaging between users of communication devices. The enhanced messages being sent from one of the communication devices to one or more other of the communication devices. These enhanced messages can include additional information pertaining to a communication device, its user and/or its environment. In one embodiment, the status information can include at least position (location) information and conditions information.

According to the embodiment shown in FIG. **2**, the enhanced messaging system **200** includes stationary communication devices **202** and **204**. The enhanced messaging system **200** also includes mobile communication devices (MCD) **206** and **208**. Typically, the mobile communication devices **206** and **208** are worn by, affixed to or carried by users. The enhanced messaging system **200** would normally be able to support multiple stationary communication devices, such as desktop computers, and mobile communication devices, such as mobile telephones, personal digital assistants and two-way pagers.

In general, messages can be transmitted (sent and/or received) between and/or among any of the communication devices, regardless of whether stationary or mobile. For discussion, it is assumed that a message is created and sent from the mobile communication device **206** to the stationary communication device **204**. The message is assumed to be a text message, such as a real-time text message (e.g., instant message). In this example, the mobile communication device **206** acquires status information pertaining to the user, the device and/or the environment. The acquired status information is provided to the stationary communication device **204** along with the message.

The mobile communication devices **206** and **208** couple to a wireless network **210**. The wireless network **210** couples to the Internet **212**. Further, a status server **214** is coupled to the Internet **212**. The status server **214** also couples to a status database **216**. The Internet **212** can be replaced by other data networks (e.g., enterprise network, regional network, Local Area Network, Wide Area Network and global network).

The status information can include at least position (location) information and conditions information. The position information is obtained typically from a global positioning system (GPS) receiver within the first mobile communication device **206**. The position information can be obtained or augmented by a local positioning system such as utilized with a local network (e.g., Bluetooth, Wi-Fi, etc.).

The conditions information can vary with application. Various examples of conditions that can be provided within the conditions information were noted above. The corresponding conditions sensor(s) can also be in the mobile communication device **206**, or the sensor(s) can be wired or wirelessly coupled to the mobile communication device **206**.

The status information that is obtained by the first mobile communication device **206** is sent by the first mobile communication device **206** to the status server **214** via the wireless network **210** and the Internet **212**. The status server **214** stores the status information pertaining to the first mobile communication device **206** into the status database **216** such that it is associated with the first mobile communication device **206**. The status server **214** monitors status information for numerous communication devices, including mobile communications devices and/or stationary communication device, and thus stores status information pertaining to numerous communication devices.

The enhanced messaging system **200** can also include at least one third-party **218**. The third-party **218** is a user interested in status information acquired by mobile communication devices but does not normally receive the text messages also being sent.

The enhanced messaging system **200** can allow a recipient of the message to not only receive the text of the message but also the status information associated with the message. In one embodiment, the recipient receives the status information with the message. The recipient of the message can, for example, include one or more of the mobile communication devices **206** and **208** or one or more of the stationary communication devices **202** and **204**, or users thereof. In another embodiment, an authorized party, such as the user of the stationary communication devices **202** and **204** or the third-party **218**, can interact with the status server **214** through a web interface so that such users are able to access certain status information via the status server **214** and the status database **216**. The web interface can facilitate a user in accessing status information anytime anywhere.

FIG. **3** is a flow diagram of status message processing **300** according to one embodiment of the invention. The status message processing **300** is, for example, performed by a mobile communication device (e.g., mobile telephone, two-way pager) or other computing device (e.g., desktop computer, gateway, server).

Initially, the status message processing **300** receives **302** a message at a first mobile communication device. For example, a user of the mobile communication device would typically interact with the mobile communication device (e.g., through a user interface) to create the message. Hence, in this embodiment, the message is considered to be a user-entered message. The user-entered message can be a voice message, a text message, a video message or some other type of input, or some combination thereof. A text message is, for example, a standard email message, a short message (e.g., SMS message) or an instant message. Status information pertaining to the first mobile communication device (and/or its user or environment) can be acquired **304**. As noted above, in one embodiment, the status information can include at least position (location) information and/or conditions information. Some or all of the status information can then be attached **306** to the user-entered message. In one embodiment, at least some of the status information has been processed before attachment. The processed status information is still considered as status information. With the status information attached **306** to the user-entered message, the user-entered message becomes an enhanced message. The enhanced message is then sent **308** from the first mobile communication device to another electronic device, such as a second mobile communication device (e.g., mobile telephone, personal digital assistant, or pager) or other computing device (e.g., portable or stationary computer). Typically, the sending of the enhanced message involves electronic transmission of the enhanced message over a wireless network as well as perhaps a wired network. Although the enhanced message is often sent from one mobile communication device to another mobile communication device, the message can alternatively be sent to another computing device, such as a personal computer coupled to the network. Following the operation **308**, the status message processing **300** is complete and ends.

FIG. **4** is a flow diagram of send processing **400** according to one embodiment of the invention. The send processing **400** is, for example, performed by a mobile communication device or other computing device.

The send processing **400** initially produces **402** a message. In this embodiment, the message is a user-entered message such as a text message. The text message can, for example, be produced or initiated by a user of the mobile communication device or other computing device. However, in other embodiment, the message can be a voice message or a video message.

A decision **404** then determines whether status information is to be added to the text message. The decision **404** allows the user to limit or restrict the status information that is sent to others. For example, the user might restrict the status information such that it can only be sent to authorized

persons or destinations. The restrictions can be imposed by a profile or configuration information associated with the user. In one implementation, a user can make use of a list of recipients permitted to receive status information (e.g., pre-authorized recipients). As another example, a dialog box (or other graphical user interface) could be displayed to allow the user to select none, some or all of the available status information to be sent generally with all text messages, or specifically with a particular text message. As still another example, default authorizations can control the status information that is to be sent to recipients. Yet, in another example, status information can have different levels. Some levels can be more confidential than others, or some levels can be more important than others. These levels can also be set by the user. Regardless, different recipients can receive different levels of status information.

In any case, when the decision **404** determines that status information is to be provided with the text message, the status information is acquired **406**. The status information is acquired from the mobile communication device or other computing device that is sending the text message. For example, the status information can be acquired **406** from a position detector and at least one condition sensor within (wired or wirelessly coupled to) the mobile communication device.

Regardless of how or when acquired, the status information can then be embedded **408** in the text message. Once the status information has been embedded in **408** (or otherwise combined with or linked to) the text message, the resulting message is referred to as an enhanced message. The status information can be embedded in an open (e.g., as additional displayed information) or hidden manner (e.g., as undisplayed text). In one example, the status information is embedded in the text message using a markup language. The status information being embedded in the text message can also be encrypted, or the entire enhanced message can be encrypted. After the status information is embedded **408** (as well as directly after the decision **404** when no status information is to be added, the resulting message (regardless of whether enhanced or not) is sent **410** to a recipient. The recipient is typically a user of another mobile communication device or other computing device. However, the recipient can also be the another mobile communication device or other computing device. Following the operation **410**, the send processing **400** is complete and ends.

FIG. **5** is a flow diagram of display processing **500** according to one embodiment of the invention. The display processing **500** is, for example, performed by a mobile communication device or other computing device. The display processing **500** is, for example, performed in response to a message being received due to the send processing **400** of FIG. **4**. In other words, the display processing **500** can be performed by a computing device associated with a recipient that has received a message.

The display processing **500** begins with a decision **502** that determines whether a message has been received. When the decision **502** determines that a message has not yet been received, then the display processing **500** awaits the receipt of a message. On the other hand, when the decision **502** determines that a message has been received, a decision **504** then determines whether any status information is provided with the message that has been received. Here, the message is examined to determine whether status information is provided within the message. When the decision **504** determines that status information is provided with the message (and thus the message is an enhanced message), then the status information is extracted **506** from the message.

Next, the message as well as at least one representation of the status information are displayed **508**. The representation (e.g., indication) of the status information being displayed can vary with implementation. In one embodiment, the representation is a graphical symbol that represents at least a portion of the status information. For example, a smiling face icon can represent a happy mood, a frown face icon can represent that the user is unhappy, etc. In another embodiment, the representation is textual information that is or represents a portion of the status information. In still another embodiment, the representation is a link (e.g., hyperlink) that provides access to at least a portion of the status information. For such representations, the status information can specify its presentation, or additional processing of the status information can determine an appropriate presentation.

The status information can also be interpreted, analyzed or processed before or while the representation to be displayed is determined. In one embodiment, such interpretation, analysis or processing can be performed, at least in part, by the device sending the message. As one example, the status information can include (or interpreted to include) temperature (e.g., ambient temperature) and user perspiration. Based on these two pieces of status information, one interpretation is that the user is perspiring (i.e., sweating) because of the high temperature.

As another example of the interpretation of status information, relative position of two computing devices can be computed and displayed. For example, if a receiving-computing device (either mobile or stationary) receives position information from a sending-computing device (preferably mobile), then the receiving-computing device (which knows its position) can determine and display the relative position (e.g., distance and/or direction) of the sending and the receiving-computing devices. Further, through use of other conditions information pertaining to the sending-computing device that might also be provided to the receiving-computing device, the receiving-computing device can also display the speed (velocity), direction of travel, etc. of the sending-computing device. Through additional interpretation or analysis of the conditions information, the speed (or average speed) could be used to categorize the type of movement of the sending-computing device, which would be available for display, as a symbol or other indication. As examples, the categories could be auto, bicycle, run, fast walk, slow walk, and stationary.

In yet another example, conditions information can include the user's mood. This can be measured in a number of different ways. One method is discussed in U.S. Pat. No. 5,774,591, entitled, "APPARATUS AND METHOD FOR RECOGNIZING FACIAL EXPRESSIONS AND FACIAL GESTURES IN A SEQUENCE OF IMAGES," which is hereby incorporated herein by reference. Such conditions information can be interpreted at the sending-computing device or the receiving-computing device. Conditions information can be a user's stress level. This piece of status information can, for example, be interpreted and transformed into a symbol, such as a stressed-face icon which the stress level is high. In one embodiment, both the raw data and the symbol(s) are transmitted to a receiving-computing device, but with only the symbol being displayed and the raw data being hidden. By selecting the displayed symbol or through other appropriate user-input, the receiving-computing device can additionally analyze or view the raw data.

Alternatively, when the decision **504** determines that status information is not provided with the message, then the message is displayed **510**. Here, there is no status informa-

tion available to present; therefore, the message is simply displayed. Following the operations **508** and **510**, the display processing **500** is complete and ends.

The display processing **500** operates to present at least an indicator or representation of the status information through a display. In another embodiment, the status can be presented to the user of the mobile communication device or other computing device in other ways. For example, the status information could be presented by an audio output (e.g., synthesized voice), a tactile output or other types of outputs that can be sensed by the user, which is typically a living being, such as a human being.

In one aspect of the invention, status information can be automatically included with user-entered messages being sent as noted above. As another aspect of the invention, status information can be acquired and presented on request.

FIG. **6** is a flow diagram of status retrieval processing **600** according to one embodiment of the invention. The status retrieval processing **600** is, for example, performed by a mobile communication device or other computing device.

The status retrieval processing **600** begins with a decision **602** that determines whether a status request has been requested. The status request is provided by a requestor to acquire status information from another mobile communication device or other computing device. In one embodiment, the status request is initiated by a requestor. The requestor can be a user of the mobile communication device or other computing device. In another embodiment, the status request can be initiated by the mobile communication device or other computing device. When the decision **602** determines that a status request has not been requested, then the status retrieval processing **600** awaits such a request.

Once the decision **602** determines that a status request has been requested, a status request message is produced **604**. The status request message is then sent **606** from the requestor to a recipient. In one embodiment, the status request message is a short text message (e.g., SMS message) that need not be displayed at the recipient. A status request message that is not displayed at the recipient can be referred to as a dummy message. The recipient can be another mobile communication device or other computing device, or a user thereof.

Next, a decision **608** determines whether a status response message has been received by the requestor. The status response message includes status information associated with the recipient. The status response message is a message sent by the recipient in response to the status request message from the requestor. When the decision **608** determines that the status response message has not yet been received, then the status retrieval processing **600** awaits receipt of a status response message. On the other hand, when the decision **608** determines that a status response message (responsive to the status request message) has been received, then the status retrieval processing **600** continues. Namely, status information is extracted **610** from the status response message. Next, at least one representation of the status information is displayed **612**. The representation can vary with implementation. In one embodiment, the representation is a graphical symbol that represents at least a portion of the status information. In another embodiment, the representation is text that is or represents a portion of the status information. In another embodiment, the representation is a piece of video clip that is or represents a portion of the status information. In still another embodiment, the representation is a link (e.g., hyperlink) that provides access to at least a portion of the status information. The status information can also be interpreted, analyzed or processed before or while the representation to be displayed is determined. Following the operation **600**, the status retrieval processing **600** is complete and ends.

FIG. **7** is a flow diagram of status request processing **700** according to one embodiment of the invention. The status request processing **700** is, for example, performed by a mobile communication device or other computing device. The status request processing **700** is, for example, performed in response to a status request message of the status retrieval processing **600** of FIG. **6**.

The status request processing **700** begins with a decision **702** that determines whether a status request message has been received. When the decision **702** determines that a status request message has not yet been received, then the status request processing **700** awaits such a message. Once the decision **702** determines that a status request message has been received, status information for the associated mobile communication device or other computing device or user thereof is acquired **704**. A status response message is then produced **706** based on the status information. The status response message is then sent **708** to the requestor. The requestor can be considered to be a mobile communication device or other computing device, or a user thereof, that caused the status request message to be sent. According to one embodiment, once the status response message is sent **708**, the operations **610-612** of the status retrieval processing **600** of FIG. **6** can be performed.

As described above, status information is typically presented in some manner at the recipient (often presented concurrently with a message). In other embodiments, the status information can be stored in a database for later utilization. The messages can be subsequently searched, sorted or otherwise processed.

In still another aspect of the invention, status information can be automatically sent to one or more recipients whenever available or when changed. For example, one such embodiment could have a mobile communication device periodically or on events (e.g., status events) send its status information to another computing device. As another example, status information could be automatically sent to another computing device when changed by more that a threshold amount. This would enable the another computing device to maintain awareness of up-to-date status information of the mobile communication device. Like other embodiments, this embodiment can operate in a peer-to-peer manner or in a centralized manner.

Note that status sensors do not have to be embedded in a mobile communication device. A status sensor can be physically detached, but electronically coupled to a communication device through a wireless link, such as based on the Bluetooth or Wi-Fi technologies. In yet another embodiment, a status sensor electronically couples to a communication device through a wire connection.

In yet another embodiment, the sending of status information can be through user-activation. In other words, although a piece of status information is acquired via a status sensor, its transmission to another electronic device can depend on a user's voluntary action, such as pushing a button.

One application of the invention is to provide the status information with messages, such as text messages and in particular near real-time text messages, such as instant messages. Hence, users of computing devices, namely, mobile communication devices, can exchange near real-time text messages and in doing so can also exchange status

information. In some embodiments, the exchange of status information is achieved automatically, without user initiation.

The messages can be provided in a markup language format. The status information can be embedded or included in the messages also in a markup language. As examples, the markup language include HTML, HDML, WML, XML, etc. The messages and/or status information can also be provided in a programming language format, such as JAVA or C.

Another application of the invention is in the medical area. For example, a patient carries a mobile communication device with a position detector. He is also carrying one or more status sensors that can sense, for example, his body temperature, blood pressure, blood sugar or glucose level, blood oxygen, spirometry, ECG, heart rate, arrhythmias, brain wave, other sound wave measurable by a stethoscope, and/or body fat. The sensors can be non-invasive or invasive. Also, the sensor(s) can be coupled to the device is a wireless or wired manner. Such status information can be transmitted upon his command. In one embodiment, a patient's mobile communication device sends a message ("Very tired.") to an emergency clinic. It is an enhanced message that includes some of the patient's status information, such as his physical location and blood sugar level. In response, a specialist at the clinic sends one or more messages back, instructing the patient how to care for himself and/or controlling the release of insulin into the patient. In the mean time, the specialist can dispatch an ambulance to pick him up.

A number of embodiments have been described based on text messages. The present invention is also applicable to other types of messages, such as voice messages. In one embodiment, the message is provided with a voice call, and the mobile communication device is a mobile telephone (e.g., cell phone).

Also, a number of embodiments have been described regarding a device sending information to another device. In one embodiment, a device can broadcast enhanced messages to many devices.

In yet another embodiment, communication among devices can be monitored and charged by a third party. For example, the user of a communicating device can be billed depending on the amount of enhanced messages he has been sending or the amount or degree of enhancement to messages. In one embodiment, both the recipient and the sender of the enhanced messages are billed. In another embodiment, the more types of status messages included, the higher the bill. For example, enhanced messages with position, temperature and humidity information will cost more than enhanced messages with just position.

The various aspects can be used separately or in any combination.

The above-described system, methods and processes can be used together with other aspects of a monitoring system or mobile device, including the various aspects described in: (i) U.S. Provisional Patent Application No. 60/444,198, filed Jan. 30, 2003, and entitled "SYSTEM, METHOD AND APPARATUS FOR ACQUIRING, PRESENTING, MONITORING, DELIVERING, MANAGING AND USING STATUS INFORMATION," which is hereby incorporated herein by reference; (ii) U.S. Provisional Patent Application No. 60/418,491, filed Oct. 15, 2002, and entitled "SYSTEM, METHOD AND APPARATUS FOR ACQUIRING, PRESENTING, MONITORING, DELIVERING, MANAGING AND USING STATUS INFORMATION SYSTEM, METHOD AND APPARATUS FOR ACQUIRING, PRESENTING, MANAGING AND USING POSITION INFORMATION," which is hereby incorporated herein by reference; (iii) U.S. Provisional Patent Application No. 60/404,645, filed Aug. 19, 2002, and entitled "SYSTEM, METHOD AND APPARATUS FOR ACQUIRING, PRESENTING, MONITORING, DELIVERING, MANAGING AND USING POSITION AND OTHER INFORMATION," which is hereby incorporated herein by reference; and (iv) U.S. Provisional Patent Application No. 60/375,998, filed Apr. 24, 2002, and entitled "SYSTEM, METHOD AND APPARATUS FOR ACQUIRING, PRESENTING, MANAGING AND USING POSITION INFORMATION," which is hereby incorporated herein by reference.

The invention can be implemented in software, hardware or a combination of hardware and software. The invention can also be embodied as computer readable code on a computer readable medium. The computer readable medium can be any data storage device that can store data which can thereafter be read by a computing device. Examples of the computer readable medium include read-only memory, random-access memory, CD-ROMs, magnetic tape, optical data storage devices, and carrier waves. The computer readable medium can also be distributed over network-coupled computer systems so that the computer readable code is stored and executed in a distributed fashion.

The advantages of the invention are numerous. Different embodiments or implementations may yield one or more of the following advantages. One advantage is that status information is able to be obtained easily while exchanging electronic messages or otherwise through use of electronic messages. Another advantage of the invention is that messages are able to be enhanced with status information acquired by sensors. Still another advantage of the invention is that it can operate in a point-to-point or centralized manner to gather and present status information between computing devices (e.g., mobile communication devices).

The many features and advantages of the present invention are apparent from the written description and, thus, it is intended by the appended claims to cover all such features and advantages of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation as illustrated and described. Hence, all suitable modifications and equivalents may be resorted to as falling within the scope of the invention.

What is claimed is:

1. A non-transitory computer readable medium including at least computer program code tangible stored thereon for facilitating communication among users of mobile electronic devices, said computer readable medium comprising:

computer program code for receiving message content for a text message via a first mobile electronic device;

computer program code for acquiring status information of the first mobile electronic device, the status information including at least location information regarding location of the first mobile electronic device;

computer program code for determining a plurality of other mobile electronic devices or users thereof that are authorized to receive the status information;

computer program code for determining whether at least one indication has been received from the first mobile electronic device to influence whether the status information is to be provided with the text message, the at least one indication received being user-initiated via the first mobile electronic device and being for the text message;

computer program code for determining based at least in part on the at least one indication whether the status information is to be provided with the text message, and

computer program code for initiating sending of the text message along with the status information to each of the plurality of other mobile electronic devices via at least one wireless network, provided that the computer program code for determining determines that the status information is to be provided with the text message, and provided that the computer program code for determining determines that the plurality of other mobile electronic devices or users thereof are authorized to receive the status information.

2. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for receiving a user input from the first mobile electronic device via a user interface element displayed at the first mobile electronic device,

wherein the user input via the user interface element influences whether the location information is provided with the text message.

3. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for modifying the status information acquired from the first mobile electronic device prior to the computer program code for initiating sending acting to initiate sending such to the plurality of other mobile electronic devices.

4. A non-transitory computer readable medium as recited in claim **3**, wherein the computer program code for modifying the status information produces modified status information that includes at least one presentation instruction.

5. A non-transitory computer readable medium as recited in claim **4**, wherein the at least one presentation instruction is provided at least in part in a markup language.

6. A non-transitory computer readable medium as recited in claim **1**, wherein the computer program code for modifying the status information produces modified status information that includes at least one link.

7. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for receiving a message from another mobile electronic device via the wireless network;

computer program code for determining whether the received message includes at least received status information;

computer program code for extracting the status information from the received message when the computer program code for determining determines that the received message includes at least the received status information; and

computer program code for displaying the received message and at least one representation of the extracted status information on the display when the computer program code for determining determines that the received message includes at least the received status information.

8. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for augmenting the status information acquired from the first mobile electronic device prior to sending such to the plurality of other mobile electronic devices.

9. A non-transitory computer readable medium as recited in claim **8**, wherein the computer program code for augmenting the status information produces augmented status information that facilitates display of a graphical representation of the location information.

10. A non-transitory computer readable medium as recited in claim **9**, wherein at least a portion of the augmented status information is provided in a markup language.

11. A non-transitory computer readable medium as recited in claim **9**, wherein at least a portion of the augmented status information includes at least presentation instructions.

12. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for modifying the location information acquired from the first mobile electronic device.

13. A non-transitory computer readable medium as recited in claim **12**, wherein the computer program code for modifying the location information produces modified location information based at least in part on a local network.

14. A non-transitory computer readable medium as recited in claim **13**, wherein the local network comprises a Wi-Fi network.

15. A non-transitory computer readable medium as recited in claim **1**, wherein the computer program code for acquiring the status information is configured to determine the location information based on location data supplied by a GPS receiver provided in the first mobile electronic device.

16. A non-transitory computer readable medium as recited in claim **1**, wherein the computer program code for acquiring the status information is configured to determine the location information based on (i) location data supplied by a GPS receiver provided in the first mobile electronic device, and (ii) other location data associated with a local network available for use by the first mobile electronic device.

17. A non-transitory computer readable medium as recited in claim **1**, wherein the computer program code for acquiring the status information is configured to receive location data from a GPS receiver provided in the first mobile electronic device, and configured to derive the location information based on the received location data.

18. A non-transitory computer readable medium as recited in claim **17**, wherein said computer readable medium comprises:

computer program code for modifying the location information acquired from the first mobile electronic device, and

wherein the computer program code for modifying the location information is configured to modify the location information from the GPS receiver.

19. A non-transitory computer readable medium as recited in claim **18**, wherein the at least one indication is user-initiated with a graphical user interface for the first mobile electronic device, and wherein the graphical user interface allows a user of the first mobile electronic device to direct that at least a portion of the status information be provided with the text message.

20. A non-transitory computer readable medium as recited in claim **18**, wherein the at least one indication is user-initiated with a graphical user interface for the first mobile electronic device, and wherein the graphical user interface allows a user of the first mobile electronic device to direct

that at least a portion of the status information not be provided with the text message.

21. A non-transitory computer readable medium as recited in claim **1**, wherein the at least one indication is user-initiated with a graphical user interface for the first mobile electronic device, and wherein the graphical user interface allows a user of the first mobile electronic device to direct that at least a portion of the status information be provided with all text messages to be sent by the user of the first mobile electronic device.

22. A non-transitory computer readable medium as recited in claim **1**, wherein the status information for inclusion with the text message can be set at different levels.

23. A non-transitory computer readable medium as recited in claim **1**, wherein the text message is a SMS message.

24. A non-transitory computer readable medium as recited in claim **1**,

wherein the computer program code for initiating sending of the text message along with the status information to each of the plurality of other mobile electronic devices uses a wireless network and operates to include the status information with the text message, provided that the computer program code for determining determines that the plurality of other mobile electronic devices or users thereof are authorized to receive the status information of the first mobile electronic device,

wherein the at least one indication is user-initiated with a graphical user interface for the first mobile electronic device, and

wherein the graphical user interface is configured to facilitate user input as to the indication by directing whether at least a portion of the status information be included or not included with the text message.

25. A non-transitory computer readable medium as recited in claim **1**,

wherein the computer program code for initiating sending of the text message along with the status information to each of the plurality of other mobile electronic devices uses a wireless network and operates to include the status information with the text message, provided that the computer program code for determining determines that the plurality of other mobile electronic devices or users thereof are authorized to receive the status information of the first mobile electronic device,

wherein the at least one indication is user-initiated with a graphical user interface for the first mobile electronic device, and

wherein the graphical user interface is configured to facilitate user input as to the indication by directing that at least a portion of the status information be included with all messages to be sent by the user of the first mobile electronic device, and

wherein the text message is a short text message.

26. A non-transitory computer readable medium as recited in claim **1**, wherein at least a portion of the status information is acquired by a sensor.

27. A non-transitory computer readable medium as recited in claim **26**, wherein the sensor is internal to the first mobile electronic device.

28. A non-transitory computer readable medium as recited in claim **26**, wherein the sensor is provided in a sensor device separate from the first mobile electronic device.

29. A non-transitory computer readable medium as recited in claim **28**, wherein the sensor device is a wireless sensor that wirelessly couples to the first mobile electronic device.

30. A non-transitory computer readable medium as recited in claim **1**, wherein the message is a text message.

31. A non-transitory computer readable medium as recited in claim **1**, wherein the status information includes at least first location information associated with the first mobile electronic device, and

wherein said computer readable medium further comprises computer program code for processing at least the first location information of the status information to determine and display an indication of relative positions of the first mobile electronic device and one or more of the other mobile electronic devices.

32. A non-transitory computer readable medium as recited in claim **31**, wherein the one or more of the other mobile electronic devices has second location information associated therewith, and wherein the computer program code for processing determines the relative positions based on the first location information and the second location information.

33. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for processing the status information to identify a type of movement pertaining to the first mobile electronic device.

34. A non-transitory computer readable medium as recited in claim **33**, wherein the type of movement corresponds to a user of the first mobile electronic device, and wherein the type of movement is walking, running, riding in an auto, or being stationary.

35. A non-transitory computer readable medium as recited in claim **33**, wherein said computer readable medium comprises:

computer program code for initiating display of a graphical indication of the type of movement.

36. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for processing the status information to determine movement of the first mobile electronic device.

37. A non-transitory computer readable medium as recited in claim **36**, wherein the movement comprises speed.

38. A non-transitory computer readable medium as recited in claim **36**, wherein the movement comprises speed and direction of travel.

39. A non-transitory computer readable medium as recited in claim **36**, wherein said computer readable medium comprises:

computer program code for initiating display a graphical indication of the movement.

40. A non-transitory computer readable medium as recited in claim **36**, wherein the computer program code for initiating sending of the text message along with the status information to each of the plurality of other mobile electronic devices includes movement information pertaining to the movement as at least a portion of the status information.

41. A non-transitory computer readable medium as recited in claim **1**, wherein the status information includes at least movement information of the first mobile electronic device.

42. A non-transitory computer readable medium as recited in claim **41**, wherein the computer program code for acquiring the status information is configured to determine the movement information based on at least movement data received at the first mobile electronic device.

43. A non-transitory computer readable medium as recited in claim **41**, wherein the computer program code for acquiring the status information is configured to determine the

movement information based on at least movement data supplied by a sensor in the first mobile electronic device.

44. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for processing the status information to determine a user's health state.

45. A non-transitory computer readable medium as recited in claim **44**, wherein the user's health state comprises heart beat or temperature.

46. A non-transitory computer readable medium as recited in claim **44**, wherein said computer readable medium comprises:

computer program code for displaying a graphical indication of the user's health state.

47. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for processing the status information to determine a user's stress level.

48. A non-transitory computer readable medium as recited in claim **47**, wherein said computer readable medium comprises:

computer program code for displaying a graphical indication of the user's stress level.

49. A non-transitory computer readable medium as recited in claim **1**, wherein said computer readable medium comprises:

computer program code for processing the status information to determine a user's emotional state.

50. A non-transitory computer readable medium as recited in claim **49**, wherein said computer readable medium comprises:

computer program code for displaying a graphical indication of the user's emotional state.

51. A non-transitory computer readable medium including at least computer program code tangible stored thereon for facilitating communication among users of mobile electronic devices, said computer readable medium comprising:

computer program code for receiving message content for a text message via a first mobile electronic device;

computer program code for accessing location information regarding location of the first mobile electronic device;

computer program code for determining a plurality of other mobile electronic devices or users thereof that are authorized to receive the location information;

computer program code for determining whether at least one indication has been received from the first mobile electronic device to influence whether the location information is to be provided with the text message, the at least one indication received being user-initiated via the first mobile electronic device and being for the text message;

computer program code for determining based at least in part on the at least one indication whether the location information is to be provided with the text message, and

computer program code for initiating sending of the text message along with the location information to each of the plurality of other mobile electronic devices via at least one wireless network, provided that the computer program code for determining determines that the location information is to be provided with the text message, and provided that the computer program code for determining determines that the plurality of other mobile electronic devices or users thereof are authorized to receive the location information.

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