



US008395547B2

(12) **United States Patent**  
**Dhanani et al.**

(10) **Patent No.:** **US 8,395,547 B2**  
(45) **Date of Patent:** **Mar. 12, 2013**

- (54) **LOCATION TRACKING FOR MOBILE COMPUTING DEVICE**
- (75) Inventors: **Adil Dhanani**, Mountain View, CA (US); **Neeta Srivastava**, San Jose, CA (US); **Nitin Kumar**, San Ramon, CA (US); **Janell Paulson**, Carlsbad, CA (US); **Thomas Fong**, San Diego, CA (US)
- (73) Assignee: **Hewlett-Packard Development Company, L.P.**, Houston, TX (US)
- (\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 176 days.

5,012,219	A	4/1991	Henry
5,075,684	A	12/1991	DeLuca
5,359,317	A	10/1994	Gomez et al.
5,375,226	A	12/1994	Sano et al.
5,394,140	A	2/1995	Wong et al.
5,430,436	A	7/1995	Fennell
5,455,466	A	10/1995	Parks et al.
5,508,736	A	4/1996	Cooper
5,594,796	A	1/1997	Grube et al.
5,596,567	A	1/1997	de Muro et al.
5,600,225	A	2/1997	Goto
5,612,682	A	3/1997	DeLuca et al.
5,650,776	A	7/1997	Mitchell et al.
5,666,530	A	9/1997	Clark et al.
5,699,244	A	12/1997	Clark, Jr. et al.
5,705,995	A	1/1998	Laffin et al.
5,727,202	A	3/1998	Kucala
5,729,735	A	3/1998	Meyering
5,733,313	A	3/1998	Barreras et al.

(Continued)

(21) Appl. No.: **12/893,907**

(22) Filed: **Sep. 29, 2010**

(65) **Prior Publication Data**

US 2011/0054780 A1 Mar. 3, 2011

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 12/549,249, filed on Aug. 27, 2009, now Pat. No. 8,228,234, and a continuation-in-part of application No. 12/872,703, filed on Aug. 31, 2010.

(51) **Int. Cl.**  
**G01S 3/02** (2006.01)

(52) **U.S. Cl.** ..... **342/451**

(58) **Field of Classification Search** ..... 342/357.25,  
342/357.46, 357.74, 419, 442, 451; 701/465,  
701/468

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,907,290	A	3/1990	Crompton
5,010,547	A	4/1991	Johnson et al.

**FOREIGN PATENT DOCUMENTS**

CN	1592197	A	3/2005
DE	102005013541	A1	9/2006

(Continued)

**OTHER PUBLICATIONS**

U.S. Appl. No. 11/430,786, filed May 8, 2006, Baraban, et al.

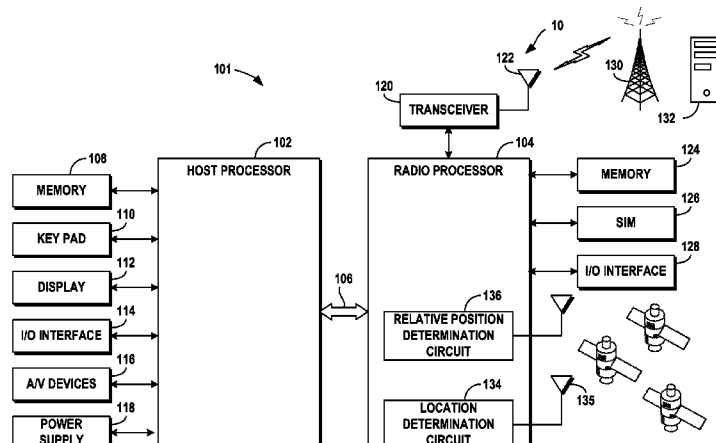
(Continued)

*Primary Examiner* — Dao Phan

(57) **ABSTRACT**

A mobile computing device comprises a wireless transceiver and a processing circuit. The processing circuit is configured to store a data set for a predetermined location, the data set comprising location data and a location name. The processing circuit is further configured to compare a current location to the location data, to compare an updated location to the location data at a time calculated based on heuristic data, and to generate a notification message based on the mobile computing device arriving at or near the predetermined location.

**20 Claims, 5 Drawing Sheets**



U.S. PATENT DOCUMENTS					
5,742,521	A	4/1998	Ellenby et al.	6,772,331	B1 8/2004 Hind et al.
5,758,150	A	5/1998	Bell et al.	6,795,110	B1 9/2004 Kossin
5,760,580	A	6/1998	Tyren	6,799,190	B1 9/2004 Boothby
5,787,233	A	7/1998	Akimoto	6,803,744	B1 10/2004 Sabo
5,815,411	A	9/1998	Ellenby et al.	6,806,649	B2 10/2004 Mollema et al.
5,831,348	A	11/1998	Nishizawa	6,810,405	B1 10/2004 LaRue et al.
5,838,262	A	11/1998	Kershner et al.	6,812,645	B2 11/2004 Baarman
5,850,187	A	12/1998	Carrender et al.	6,825,620	B2 11/2004 Kuennen et al.
5,852,187	A	12/1998	Thorner et al.	6,831,417	B2 12/2004 Baarman
5,870,765	A	2/1999	Bauer et al.	6,831,563	B1 12/2004 Contractor
5,875,434	A	2/1999	Matsuoka et al.	6,832,178	B1 12/2004 Fernandez et al.
5,884,168	A	3/1999	Kolev et al.	6,847,823	B2 1/2005 Lehtikoinen et al.
5,901,358	A	5/1999	Petty et al.	6,850,986	B1 2/2005 Peacock
5,903,852	A	5/1999	Schaupp, Jr. et al.	6,885,362	B2 4/2005 Suomela
5,929,848	A	7/1999	Albukerk et al.	6,888,438	B2 5/2005 Hui et al.
5,938,721	A	8/1999	Dussell et al.	6,907,134	B1 6/2005 Yamada et al.
5,958,006	A	9/1999	Eggleston et al.	6,917,163	B2 7/2005 Baarman
5,958,051	A	9/1999	Renaud et al.	6,920,328	B2 7/2005 Wollrab
5,974,238	A	10/1999	Chase, Jr.	6,928,452	B2 8/2005 De La Huerga
5,974,330	A	10/1999	Negishi	6,934,664	B1 8/2005 Webb et al.
6,006,274	A	12/1999	Hawkins et al.	6,941,270	B1 9/2005 Hannula
6,016,476	A	1/2000	Maes et al.	6,963,800	B1 11/2005 Milbert
6,037,936	A	3/2000	Ellenby et al.	6,975,198	B2 12/2005 Baarman et al.
6,047,579	A	4/2000	Schmitz	6,982,962	B1 1/2006 Lunsford et al.
6,061,561	A	5/2000	Alanara et al.	6,986,051	B2 1/2006 Le Pennec et al.
6,104,291	A	8/2000	Beauvillier et al.	7,006,817	B2 2/2006 Awada et al.
6,111,538	A	8/2000	Schuchman et al.	7,027,823	B2 4/2006 Mikuni
6,138,245	A	10/2000	Son et al.	7,065,658	B1 6/2006 Baraban et al.
6,141,014	A	10/2000	Endo et al.	7,084,758	B1 8/2006 Cole
6,148,294	A	11/2000	Beyda et al.	7,088,389	B2 8/2006 Shibasaki et al.
6,157,630	A	12/2000	Adler et al.	7,103,370	B1 9/2006 Creemer
6,177,905	B1	1/2001	Welch	7,116,200	B2 10/2006 Baarman et al.
6,182,010	B1	1/2001	Berstis	7,118,240	B2 10/2006 Baarman et al.
6,182,221	B1	1/2001	Hsu et al.	7,119,716	B2 10/2006 Horstemeyer
6,184,651	B1	2/2001	Fernandez et al.	7,126,450	B2 10/2006 Baarman et al.
6,212,529	B1	4/2001	Boothby et al.	7,132,918	B2 11/2006 Baarman et al.
6,222,583	B1	4/2001	Matsumura et al.	7,136,093	B1 11/2006 Itoh et al.
6,243,689	B1	6/2001	Norton	7,149,473	B1 12/2006 Lindlar et al.
6,246,376	B1	6/2001	Bork et al.	7,164,255	B2 1/2007 Hui
6,259,405	B1	7/2001	Stewart et al.	7,164,885	B2 1/2007 Jonsson et al.
6,266,539	B1	7/2001	Pardo	7,212,827	B1 5/2007 Veschl
6,297,737	B1	10/2001	Irvin	7,248,017	B2 7/2007 Cheng et al.
6,307,556	B1	10/2001	Ellenby et al.	7,256,731	B2 8/2007 Siegel et al.
6,307,919	B1	10/2001	Yoked	7,260,399	B1 8/2007 Oh et al.
6,313,745	B1	11/2001	Suzuki	7,262,700	B2 8/2007 Hsu
6,330,436	B1	12/2001	Zidel	7,266,379	B2 9/2007 Blight et al.
6,346,881	B1	2/2002	Davidson	7,271,569	B2 9/2007 Oglesbee
6,360,101	B1	3/2002	Irvin	7,274,299	B2 9/2007 Osman
6,389,290	B1	5/2002	Kikinis et al.	7,286,880	B2 10/2007 Olson et al.
6,389,423	B1	5/2002	Sakakura	7,323,964	B1 1/2008 Shyu et al.
6,400,274	B1	6/2002	Duan et al.	7,331,793	B2 2/2008 Hernandez et al.
6,401,104	B1	6/2002	LaRue et al.	7,336,964	B2 2/2008 Casey
6,401,118	B1	6/2002	Thomas	7,360,248	B1 4/2008 Kanevsky et al.
6,404,761	B1	6/2002	Snelling et al.	7,375,492	B2 5/2008 Calhoon et al.
6,405,049	B2	6/2002	Herrod et al.	7,382,636	B2 6/2008 Baarman et al.
6,414,696	B1	7/2002	Ellenby et al.	7,385,357	B2 6/2008 Kuennen et al.
6,424,845	B1	7/2002	Emmof et al.	7,385,643	B2 6/2008 Muramatsu
6,436,299	B1	8/2002	Baarman et al.	7,392,059	B2 6/2008 White et al.
6,445,936	B1	9/2002	Cannon et al.	7,414,380	B2 8/2008 Tang et al.
6,446,076	B1	9/2002	Burkey et al.	7,424,447	B2 9/2008 Fuzell-Casey et al.
6,456,234	B1	9/2002	Johnson	7,446,672	B2 11/2008 Johnson et al.
6,487,180	B1	11/2002	Borgstahl et al.	7,453,491	B2 11/2008 Kinjo
6,490,521	B2	12/2002	Wiener	7,454,170	B2 11/2008 Goossens et al.
6,501,364	B1	12/2002	Hui et al.	7,460,064	B1 12/2008 Tester et al.
6,510,424	B1	1/2003	Ford et al.	7,460,953	B2 12/2008 Herbst et al.
6,532,152	B1	3/2003	White et al.	7,462,951	B1 12/2008 Baarman
6,532,480	B1	3/2003	Boothby et al.	7,471,986	B2 12/2008 Hatlestad
6,542,750	B2	4/2003	Hendrey et al.	7,490,294	B2 2/2009 Okada
6,559,794	B1	5/2003	Nakajima et al.	7,495,414	B2 2/2009 Hui
6,577,249	B1	6/2003	Akatsuka et al.	7,509,432	B1 3/2009 Peacock
6,601,093	B1	7/2003	Peters	7,521,890	B2 4/2009 Lee et al.
6,671,700	B1	12/2003	Creemer et al.	7,545,415	B2 6/2009 Azuma et al.
6,673,250	B2	1/2004	Kuennen et al.	7,576,514	B2 8/2009 Hui
6,681,108	B1	1/2004	Terry et al.	7,583,972	B2 9/2009 Clipsham
6,687,608	B2	2/2004	Sugimoto et al.	7,593,925	B2 9/2009 Cadiz et al.
6,731,071	B2	5/2004	Baarman	7,613,427	B2 11/2009 Blight et al.
				7,613,428	B2 11/2009 Blight et al.

7,805,719	B2	9/2010	O'Neill	2006/0136129	A1	6/2006	Yokozawa
D640,976	S	7/2011	Matsuoka	2006/0155466	A1	7/2006	Kanda et al.
8,228,234	B2	7/2012	Paulson et al.	2006/0181510	A1	8/2006	Faith
2001/0015759	A1	8/2001	Squibbs	2006/0187049	A1	8/2006	Moser et al.
2001/0040629	A1	11/2001	Miyagi et al.	2006/0200556	A1	9/2006	Brave et al.
2001/0055373	A1	12/2001	Yamashita	2006/0211430	A1	9/2006	Persico
2002/0001032	A1	1/2002	Ohki	2006/0294025	A1	12/2006	Mengerlink
2002/0010617	A1	1/2002	Hamaguchi et al.	2007/0035917	A1	2/2007	Hoteling et al.
2002/0011951	A1	1/2002	Pepin et al.	2007/0061197	A1	3/2007	Ramer et al.
2002/0019584	A1	2/2002	Schulze et al.	2007/0064406	A1	3/2007	Beart
2002/0036991	A1	3/2002	Inoue	2007/0077889	A1	4/2007	Blight et al.
2002/0061031	A1	5/2002	Sugar et al.	2007/0088497	A1	4/2007	Jung
2002/0075323	A1	6/2002	O'Dell	2007/0091861	A1	4/2007	Gupta et al.
2002/0078075	A1	6/2002	Colson et al.	2007/0120752	A1	5/2007	Takasu
2002/0084698	A1	7/2002	Kelly et al.	2007/0149208	A1	6/2007	Syrbe et al.
2002/0086680	A1	7/2002	Hunzinger	2007/0182367	A1	8/2007	Partovi
2002/0091793	A1	7/2002	Sagie	2007/0185980	A1	8/2007	Abraham et al.
2002/0103008	A1	8/2002	Rahn et al.	2007/0188284	A1	8/2007	Dobbs
2002/0136184	A1	9/2002	Liang et al.	2007/0192277	A1	8/2007	Jackson
2002/0147717	A1	10/2002	Barros et al.	2007/0200732	A1	8/2007	Bachmaier
2002/0151334	A1	10/2002	Sharma	2007/0202886	A1	8/2007	Dhebri et al.
2002/0154178	A1	10/2002	Barnett et al.	2007/0225004	A1	9/2007	Tang et al.
2002/0184331	A1	12/2002	Blight et al.	2007/0246546	A1	10/2007	Yoshida
2002/0184418	A1	12/2002	Blight	2007/0268392	A1	11/2007	Paalasmaa et al.
2002/0191862	A1	12/2002	Neumann et al.	2007/0271367	A1	11/2007	Yardeni et al.
2002/0194498	A1	12/2002	Blight et al.	2007/0290654	A1	12/2007	Govari et al.
2003/0022682	A1	1/2003	Weston	2007/0298715	A1	12/2007	Blight et al.
2003/0027553	A1	2/2003	Davidson et al.	2008/0020786	A1	1/2008	Smith et al.
2003/0052907	A1	3/2003	Rekimoto	2008/0021637	A1	1/2008	Staton et al.
2003/0054846	A1	3/2003	Parry	2008/0036653	A1	2/2008	Huston
2003/0065742	A1	4/2003	Culp et al.	2008/0045173	A1	2/2008	Park et al.
2003/0087602	A1	5/2003	Kammer	2008/0045236	A1	2/2008	Nahon et al.
2003/0115224	A1	6/2003	Obara et al.	2008/0102786	A1*	5/2008	Griffin ..... 455/404.2
2003/0126180	A1	7/2003	Bogart et al.	2008/0125102	A1	5/2008	Abel et al.
2003/0164822	A1	9/2003	Okada	2008/0133918	A1	6/2008	You et al.
2003/0214255	A1	11/2003	Baarman et al.	2008/0134030	A1	6/2008	Kansai et al.
2003/0233455	A1	12/2003	Leber et al.	2008/0195312	A1	8/2008	Aaron et al.
2004/0024795	A1	2/2004	Hind et al.	2008/0196086	A1	8/2008	Shintani et al.
2004/0049728	A1	3/2004	Langford	2008/0231537	A1	9/2008	Rofougaran et al.
2004/0082341	A1	4/2004	Stanforth	2008/0248815	A1	10/2008	Busch
2004/0088012	A1	5/2004	Kroll et al.	2008/0254811	A1	10/2008	Stewart
2004/0130915	A1	7/2004	Baarman	2008/0278894	A1	11/2008	Chen et al.
2004/0130916	A1	7/2004	Baarman	2009/0001932	A1	1/2009	Kamijo et al.
2004/0150934	A1	8/2004	Baarman	2009/0001941	A1	1/2009	Hsu et al.
2004/0176107	A1	9/2004	Chadha	2009/0002394	A1	1/2009	Chen et al.
2004/0193499	A1	9/2004	Ortiz et al.	2009/0008148	A1	1/2009	Mashino
2004/0207522	A1	10/2004	McGee et al.	2009/0043504	A1	2/2009	Bandyopadhyay et al.
2004/0222751	A1	11/2004	Mollema et al.	2009/0046654	A1	2/2009	Hoshi et al.
2004/0232845	A1	11/2004	Baarman et al.	2009/0061870	A1	3/2009	Finkelstein et al.
2004/0259499	A1	12/2004	Oba et al.	2009/0069869	A1	3/2009	Stouffer et al.
2004/0266362	A1	12/2004	Watkins et al.	2009/0088077	A1	4/2009	Brown et al.
2004/0267730	A1	12/2004	Dumais et al.	2009/0098903	A1	4/2009	Donaldson et al.
2004/0268265	A1	12/2004	Berger	2009/0106567	A1	4/2009	Baarman
2005/0007067	A1	1/2005	Baarman et al.	2009/0170433	A1	7/2009	Rhodes et al.
2005/0012611	A1	1/2005	Osman	2009/0212637	A1	8/2009	Baarman et al.
2005/0027702	A1	2/2005	Jensen et al.	2009/0212737	A1	8/2009	Johnson et al.
2005/0033780	A1	2/2005	Simelius et al.	2009/0298511	A1	12/2009	Paulson
2005/0041618	A1	2/2005	Wei et al.	2010/0007449	A1	1/2010	Tait et al.
2005/0091272	A1	4/2005	Smith et al.	2010/0021176	A1	1/2010	Holcombe et al.
2005/0093475	A1	5/2005	Kuennen et al.	2010/0045269	A1	2/2010	LaFranchise et al.
2005/0116650	A1	6/2005	Baarman	2010/0070219	A1	3/2010	Azancot et al.
2005/0122058	A1	6/2005	Baarman et al.	2010/0076524	A1	3/2010	Forsberg et al.
2005/0122059	A1	6/2005	Baarman et al.	2010/0081377	A1	4/2010	Corbridge et al.
2005/0127849	A1	6/2005	Baarman et al.	2010/0081473	A1	4/2010	Chatterjee et al.
2005/0127850	A1	6/2005	Baarman et al.	2010/0081483	A1	4/2010	Chatterjee et al.
2005/0157173	A1	7/2005	Kurebayashi et al.	2010/0083012	A1	4/2010	Corbridge et al.
2005/0171933	A1	8/2005	Stepanich et al.	2010/0121965	A1	5/2010	Chatterjee et al.
2005/0227711	A1	10/2005	Orwant et al.	2010/0131443	A1	5/2010	Agarwal et al.
2005/0246396	A1	11/2005	Oreizy et al.	2010/0131691	A1	5/2010	Chatterjee et al.
2005/0273459	A1	12/2005	Moore et al.	2010/0146308	A1	6/2010	Gioscia et al.
2006/0004512	A1	1/2006	Herbst et al.	2010/0156193	A1	6/2010	Rhodes et al.
2006/0035632	A1	2/2006	Sorvari et al.	2010/0161506	A1	6/2010	Bosenick et al.
2006/0041420	A1	2/2006	Martin et al.	2010/0169153	A1	7/2010	Hwacinski et al.
2006/0061488	A1	3/2006	Dunton	2010/0172090	A1	7/2010	Chatterjee
2006/0061958	A1	3/2006	Solomon et al.	2010/0177476	A1	7/2010	Hoteling et al.
2006/0095348	A1	5/2006	Jones et al.	2010/0180001	A1	7/2010	Hardt
2006/0123055	A1	6/2006	Atkinson et al.	2010/0194336	A1	8/2010	Azancot et al.

2011/0018356	A1	1/2011	Chatterjee	
2011/0022350	A1	1/2011	Chatterjee	
2011/0037321	A1	2/2011	Chatterjee	
2011/0050503	A1	3/2011	Fong et al.	
2011/0106954	A1	5/2011	Chatterjee et al.	
2011/0143772	A1	6/2011	Sridhara et al.	
2011/0270836	A1	11/2011	Yang et al.	
2012/0030525	A1*	2/2012	Horstemeyer	714/55
2012/0052874	A1	3/2012	Kumar	

FOREIGN PATENT DOCUMENTS

EP	395469	A2	10/1990
EP	1487184	A1	12/2004
EP	1494488		1/2005
FR	2601161	A1	1/1988
GB	2399466		9/2004
GB	2389720	B	9/2005
GB	2389767	B	4/2006
JP	09-259241	A	10/1997
JP	3161388	B2	5/1999
JP	11143600		5/1999
JP	11-354348	A	12/1999
KR	2001109963		12/2001
KR	10-2005-0016840	A	2/2005
KR	10-2005-0032997		4/2005
KR	20050087189		8/2005
KR	10-2005-0095477		9/2005
KR	20050095477		9/2005
KR	20060008100		1/2006
KR	100616131		8/2006
KR	10-2006-0096509		9/2006
KR	10-2008-0003546	A	1/2008
KR	20080036702		4/2008
KR	10-0836634	B1	6/2008
KR	10-2008-0078024	A	8/2008
WO	WO-95/03686	A1	2/1995
WO	WO-2005/024865	A2	3/1995
WO	WO-2004/098079	A1	11/2004
WO	WO-2007/033358	A2	3/2007
WO	WO-2007/034421	A2	3/2007
WO	WO-2007/080473	A1	7/2007
WO	WO-2007/118125		10/2007
WO	WO-2008/027836		3/2008
WO	WO-2008/033670	A2	3/2008
WO	WO-2008/044875	A1	4/2008
WO	WO-2008/076526	A1	6/2008
WO	WO-2008/133806	A1	11/2008
WO	WO-2009/057771	A1	5/2009
WO	WO-2010/005324	A1	1/2010
WO	WO-2010/018903	A1	2/2010
WO	WO-2010/062198	A1	6/2010
WO	WO-2010/068062	A2	6/2010
WO	WO-2010/068062	A3	7/2010
WO	WO-2010/091269	A1	8/2010

OTHER PUBLICATIONS

U.S. Appl. No. 12/975,335, filed Dec. 21, 2010, Oh, et al.  
 U.S. Appl. No. 12/987,940, filed Jan. 10, 2011, Chatterjee, et al.  
 U.S. Appl. No. 29/323,688, filed Aug. 28, 2008, Matsuoka, et al.  
 "New Riverside University Dictionary", published by The Riverside Publishing Company, Copyright 1984 by Houghton Mifflin Company, 3 pages.  
 Bolter, David J. and Macintyre, Blair, "Is It Live or Is It AR?", IEEE Spectrum, Aug. 2007, pp. 30-35.  
 Digital Cellular Telecommunications System (Phase 2+); AT Command Set for GSM Mobile Equipment (ME) (GSM 07.07 version 7.4.0 Release 1998), ETSI TS 100 916 V7.4.0 (Nov. 1999), 126 pages. Available at website: <http://www.ctiforum.com/standard/standard/etsi/0707.pdf>.  
 Digital Cellular Telecommunications System (Phase 2+); General Description of a GSM Public Land Mobile Network (PLMN) (GSM 01.02 version 6.0.1 Release 1997), ETSI TS 101 622 V6.0.1 (Feb. 2001), 23 pages. Available at website: <http://p3e.ratsji/oh2mqk/GSM/GSM-01.02.pdf>.

ule—Mobile Equipment (SIM-ME) interface (GSM 11.14 Version 5.2.0, Dec. 1996), ETSI, 56 pages. Available at website: <http://www.tftn.net/techno/smartcards/GSM11-14V5-2-0.pdf>.  
 EP Office Action received in EP Application No. 06850401.8; Mailed Feb. 3, 2012, pp. 8.  
 EP Search Report received in EP Application No. 06850401.8, Mailed Apr. 18, 2011, pp. 8.  
 Fasbender, A. et al., "Any Network, Any Terminal, Anywhere", IEEE Personal Communications (Apr. 1999), pp. 22-30, IEEE Press.  
 Final Office Action dated Jan. 11, 2010 in U.S. Appl. No. 11/680,603, 24 pages.  
 Final Office Action mailed Jan. 8, 2009 in U.S. Appl. No. 11/430,786.  
 Final Office Action mailed Oct. 25, 2004 in U.S. Appl. No. 09/861,276; 10 pgs.  
 Final Office Action mailed Dec. 30, 2009 in U.S. Appl. No. 11/430,786 (PALM.P1126C1).  
 Final Office Action mailed Jul. 19, 2010 in U.S. Appl. No. 11/430,786.  
 Final Office Action mailed Jul. 9, 2007 in U.S. Appl. No. 11/430,786.  
 Free Online Dictionary.com, Prioritize, 1991, p. 1-2. <http://www.thefreedictionary.com/prioritize>.  
 Hadjiefthymiades, S. et al., "ESW4: enhanced scheme for WWW computing in wireless communication environments", ACM SIGCOMM Computer Communication Review (Oct. 1999), pp. 24-35, vol. 29, Issue 5, ACM Press.  
 Hui, et al., "A New Generation of Universal Contactless Battery Charging Platform for Portable Consumer Electronic Equipment," IEEE Trans Power Electronics, 20(3):620-627 (2005).  
 International Search Report and Written Opinion dated Nov. 22, 2011 in International Application No. PCT/US2011/029844.  
 International Search Report and Written Opinion dated Dec. 28, 2011 in International Application No. PCT/US2011/038729.  
 International Search Report and Written Opinion dated Feb. 23, 2011 in International Application No. PCT/US2010/042779.  
 International Search Report and Written Opinion dated Feb. 27, 2012 in International Application No. PCT/US2011/053856.  
 International Search Report and Written Opinion dated Aug. 31, 2010 in International Application No. PCT/US2010/020054.  
 International Search Report and Written established by International Searching Authority, PCT/US2006/062371, Feb. 20, 2008, 10 pgs.  
 International Search Report and Written Opinion dated Apr. 20, 2010 in International Application No. PCT/US2009/055928.  
 International Search Report and Written Opinion dated Jul. 21, 2010 in International Application No. PCT/US2009/068328.  
 International Search Report and Written Opinion dated Jul. 28, 2010 in International Application No. PCT/US2009/068332.  
 International Search Report and Written Opinion dated Aug. 20, 2010 in International Application No. PCT/US2009/069847.  
 International Search Report and Written Opinion for International Application No. PCT/US2008/071324, mail date Oct. 22, 2008, 7 pages.  
 International Search Report and Written Opinion from International Application No. PCT/US2009/045387 dated Feb. 17, 2010, 8 pages.  
 Jing, J., et al., "Client Server Computing in Mobile Environments", ACM Computing Surveys, (Jun. 1999), pp. 117-157, vol. 31, Issue 2, ACM Press.  
 Kean, Steven, "Powermat Portable Wireless Charging Mat", pp. 1-12 downloaded from [http://www.bigbruin.com/content/powermat\\_1](http://www.bigbruin.com/content/powermat_1) on Sep. 29, 2010.  
 Liang, et al., "An Implantable Bi-Directional Wireless Transmission System for Transcutaneous Biological Signal Recording," Physiol. Meas. 26:83-97 (2005).  
 Mel B. W. et al., "Tablet: Personal Computer in the Year 2000", Communications of the Association for Computing machinery, New York, NY vol. 31, No. 6, Jun. 1, 1988, 639-646 XP000047633ISSN: 0001-0782.  
 Non-Final Office Action dated Jul. 7, 2010 in U.S. Appl. No. 11/680,603, 24 pages.  
 Non-Final Office Action dated Dec. 7, 2010 in U.S. Appl. No. 11/680,603; 26 pages.

Non-Final Office Action dated Jul. 25, 2012 in U.S. Appl. No. 12/872,703.  
Non-Final Office Action dated Sep. 1, 2009 for U.S. Appl. No. 11/890,794, 17 pages.  
Non-Final Office Action mailed Jan. 25, 2008 in U.S. Appl. No. 11/430,786.  
Non-Final Office Action mailed Oct. 5, 2006 in U.S. Appl. No. 11/430,786.  
Non-Final Office Action mailed Nov. 3, 2010 in U.S. Appl. No. 12/478,616; 12 pgs.  
Non-Final Office Action mailed Mar. 24, 2010 in U.S. Appl. No. 11/430,786.  
Non-Final Office Action mailed Apr. 22, 2004 in U.S. Appl. No. 09/861,276; 7pgs.  
Non-Final Office Action mailed Apr. 7, 2005 in U.S. Appl. No. 09/861,276; 11pgs.  
Non-Final Office Action mailed Jun. 11, 2009 in U.S. Appl. No. 11/430,786.  
Non-Final Office Action mailed Jul. 25, 2008 in U.S. Appl. No. 11/430,786.  
Non-Final Office Action mailed Aug. 17, 2011 in U.S. Appl. No. 12/549,249.  
Non-Final Office Action mailed Sep. 30, 2010 in U.S. Appl. No. 11/430,786; 7 pgs.  
Notice of Allowance for U.S. Appl. No. 11/706,872, mail date Dec. 27, 2010, 7 pages.  
Notice of Allowance mailed Jan. 27, 2012 U.S. Appl. No. 12/549,249, 5 pages.  
Notice of Allowance mailed Jul. 2, 2012 U.S. Appl. No. 12/549,249, 2 pages.  
Notice of Allowance mailed Jan. 9, 2006 in U.S. Appl. No. 09/861,276; 12 pgs.  
Office Action for U.S. Appl. No. 11/706,872, mail date Apr. 26, 2010, 8 pages.  
Office Action for U.S. Appl. No. 11/706,872, mail date Aug. 5, 2010, 9 pages.  
Office Action for U.S. Appl. No. 11/706,872, mail date Nov. 3, 2009, 9 pages.

Office Action for U.S. Appl. No. 11/823,850, mail date Apr. 27, 2009, 14 pages.  
Office Action for U.S. Appl. No. 11/823,850, mail date Jul. 21, 2010, 17 pages.  
Office Action for U.S. Appl. No. 11/823,850, mail date Nov. 23, 2009, 15 pages.  
Office Action for U.S. Appl. No. 11/890,794, mail date Mar. 10, 2010, 17 pages.  
Office Action for U.S. Appl. No. 12/167,137, mail date Nov. 8, 2010, 8 pages.  
Office Action for U.S. Appl. No. 12/535,841, mail date May 13, 2010, 15 pages.  
Office Action for U.S. Appl. No. 12/535,841, mail date Oct. 19, 2010, 13 pages.  
Office Action for U.S. Appl. No. 12/581,038, mail date Nov. 15, 2010, 11 pages.  
Office Action for U.S. Appl. No. 11/890,794, mail date Jul. 19, 2010, 11 pages.  
Opticon Users manual DWT 7133, Nov. 2000.  
Palm™ m505 Handheld, printed from internet address: <http://www.palm.com/products/palmm505/> on Sep. 20, 2001.  
Sevanto, J. et al., "Introducing quality-of-service and traffic classes in wireless mobile networks", Proceedings of the 1st ACM International workshop on Wireless mobile multimedia (1999), pp. 21-29, ACM Press.  
Skyhook Wireless, "How It Works", printed from internet address: <http://developer.skyhookwireless.com/how-it-works/>, on Apr. 12, 2007, 2 pages.  
Stein, Augmented reality: iPhone 3G S killer app?, printed from Internet address: [http://news.cnet.com/8301-17938\\_105-10266380-1.html](http://news.cnet.com/8301-17938_105-10266380-1.html) on Dec. 9, 2009, 3 pages.  
Troy Saulnier. Andre Trudel and Jason Zwicker, "A dynamic intelligent frequency based search engine," Nov. 1999.  
US Office Action for U.S. Appl. No. 11/890,794, mail date Sep. 1, 2009, 15 pages.

\* cited by examiner



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.