



US008761804B2

(12) **United States Patent**
Johnson

(10) **Patent No.:** **US 8,761,804 B2**
(45) **Date of Patent:** **Jun. 24, 2014**

(54) **SYSTEM AND METHOD FOR LOCATION
BASED EXCHANGES OF DATA
FACILITATING DISTRIBUTED LOCATIONAL
APPLICATIONS**

(71) Applicant: **William J. Johnson**, Flower Mound, TX
(US)

(72) Inventor: **William J. Johnson**, Flower Mound, TX
(US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/033,540**

(22) Filed: **Sep. 23, 2013**

(65) **Prior Publication Data**

US 2014/0024396 A1 Jan. 23, 2014

Related U.S. Application Data

(63) Continuation of application No. 12/077,041, filed on
Mar. 14, 2008, now Pat. No. 8,600,341.

(51) **Int. Cl.**

H04W 24/00 (2009.01)
H04W 4/02 (2009.01)
H04W 64/00 (2009.01)

(52) **U.S. Cl.**

CPC **H04W 4/028** (2013.01); **H04W 64/00**
(2013.01); **H04W 4/023** (2013.01); **H04W 4/02**
(2013.01)

USPC **455/456.3**; 370/338

(58) **Field of Classification Search**

CPC H04W 4/04; H04W 4/06; H04W 40/20;
H04W 4/02

USPC 455/4.2, 456.34; 370/338

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,636,421 A 1/1972 Barker et al.
4,021,780 A 5/1977 Narey et al.
4,255,619 A 3/1981 Saito
4,445,118 A 4/1984 Taylor et al.

(Continued)

FOREIGN PATENT DOCUMENTS

EP 0712227 5/1996
EP 915590 5/1999

(Continued)

OTHER PUBLICATIONS

Bill N. Schilit and Marvin M. Theimer, Disseminating Active Map
Information Mobile Hosts, IEEE Network, Sep./Oct. 1994.

(Continued)

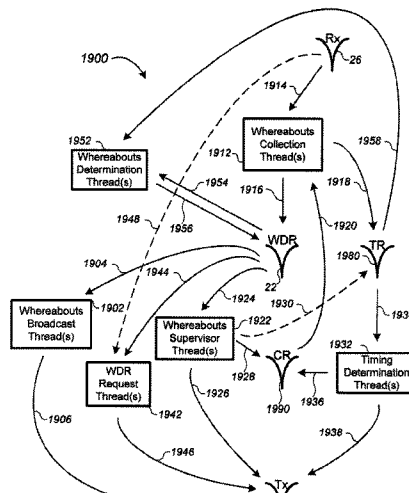
Primary Examiner — Marcos Batista

(74) *Attorney, Agent, or Firm* — Yudell Isidore Ng Russell
PLLC

(57) **ABSTRACT**

Provided is a distributed system and method for enabling new
and useful location dependent features and functionality to
mobile data processing systems. Mobile data processing sys-
tems interact with each other as peers in communications and
interoperability. A mobile data processing system may
dynamically take on roles, depending on the environment and
capabilities available at a particular time. Reference where-
abouts data is appropriately shared between mobile data pro-
cessing systems to carry out automatic location techniques
ensuring mobile data processing systems are kept up to date
with their own whereabouts and whereabouts of others,
regardless of the freely moving travels of any of the mobile
data processing systems involved, and the location technolo-
gies that may or may not be available when needed. A confi-
dence is associated to whereabouts data shared for facilitating
selection of the best candidate data used in determining new
whereabouts information.

40 Claims, 70 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

4,536,647	A	8/1985	Atalla et al.	5,666,481	A	9/1997	Lewis
4,644,351	A	2/1987	Zabarsky et al.	5,677,905	A	10/1997	Bigham et al.
4,757,267	A	7/1988	Riskin	5,687,212	A	11/1997	Kinser, Jr. et al.
4,841,560	A	6/1989	Chan et al.	5,689,431	A	11/1997	Rudow et al.
4,845,504	A	7/1989	Roberts et al.	5,694,453	A	12/1997	Fuller et al.
4,922,516	A	5/1990	Butler et al.	5,701,301	A	12/1997	Weisser, Jr.
4,973,952	A	11/1990	Malec et al.	5,704,049	A	12/1997	Briechle
4,974,170	A	11/1990	Bouve et al.	5,712,899	A	1/1998	Pace, II
4,977,399	A	12/1990	Price et al.	5,713,075	A	1/1998	Threadgill et al.
5,089,814	A	2/1992	DeLuca et al.	5,714,948	A	2/1998	Farmakis et al.
5,095,532	A	3/1992	Mardus	5,717,688	A	2/1998	Belanger et al.
5,121,126	A	6/1992	Clagett	5,720,033	A	2/1998	Deo
5,122,795	A	6/1992	Cubley et al.	5,724,521	A	3/1998	Dedrick
5,131,020	A	7/1992	Liebesny et al.	5,727,057	A	3/1998	Emery et al.
5,185,857	A	2/1993	Rozmanith et al.	5,729,680	A	3/1998	Belanger et al.
5,195,031	A	3/1993	Ordish	5,758,049	A	5/1998	Johnson et al.
5,214,793	A	5/1993	Conway et al.	5,771,283	A	6/1998	Chang et al.
5,223,844	A	6/1993	Mansell et al.	5,774,534	A	6/1998	Mayer
5,243,652	A	9/1993	Teare et al.	5,778,304	A	7/1998	Grube et al.
5,245,608	A	9/1993	Deaton et al.	5,790,974	A	8/1998	Tognazzini
5,264,822	A	11/1993	Vogelman et al.	5,794,210	A	8/1998	Goldhaber et al.
5,265,070	A	11/1993	Minowa	5,796,727	A	8/1998	Harrison et al.
5,303,393	A	4/1994	Noreen et al.	5,798,733	A	8/1998	Ethridge
5,321,242	A	6/1994	Heath, Jr.	5,806,018	A	9/1998	Smith et al.
5,337,044	A	8/1994	Folger et al.	5,812,763	A	9/1998	Teng
5,347,632	A	9/1994	Filepp et al.	5,819,155	A	10/1998	Worthy et al.
5,363,377	A	11/1994	Sharpe	5,826,195	A	10/1998	Westerlage et al.
5,365,516	A	11/1994	Jandrell	5,835,061	A	11/1998	Stewart
5,371,794	A	12/1994	Diffie et al.	5,838,774	A	11/1998	Weisser, Jr.
5,390,237	A	2/1995	Hoffman et al.	5,842,010	A	11/1998	Jain et al.
5,404,505	A	4/1995	Levinson	5,845,211	A	12/1998	Roach
5,432,841	A	7/1995	Rimer	5,852,775	A	12/1998	Hidary
5,444,444	A	8/1995	Ross	5,855,007	A	12/1998	Jovicic et al.
5,451,757	A	9/1995	Heath, Jr.	5,870,555	A	2/1999	Pruett et al.
5,455,807	A	10/1995	Nepple	5,870,724	A	2/1999	Lawlor et al.
5,461,627	A	10/1995	Rypinski	5,875,186	A	2/1999	Belanger et al.
5,469,362	A	11/1995	Hunt et al.	5,875,401	A	2/1999	Rochkind
5,475,735	A	12/1995	Williams et al.	5,878,126	A	3/1999	Velamuri et al.
5,485,163	A	1/1996	Singer et al.	5,880,958	A	3/1999	Helms et al.
5,487,103	A	1/1996	Richardson	5,881,131	A	3/1999	Farris et al.
5,493,309	A	2/1996	Bjornholt et al.	5,884,284	A	3/1999	Peters et al.
5,497,414	A	3/1996	Bartholomew	5,887,259	A	3/1999	Zicker et al.
5,504,482	A	4/1996	Schreder	5,889,953	A	3/1999	Thebaut et al.
5,511,111	A	4/1996	Serbetcioglu et al.	5,892,454	A	4/1999	Schipper et al.
5,511,233	A	4/1996	Otten	5,896,440	A	4/1999	Reed et al.
5,512,908	A	4/1996	Herrick	5,897,640	A	4/1999	Veghte et al.
5,513,263	A	4/1996	White et al.	5,903,636	A	5/1999	Malik
5,528,248	A	6/1996	Steiner et al.	5,907,544	A	5/1999	Rypinski
5,539,395	A	7/1996	Buss et al.	5,920,846	A	7/1999	Storch et al.
5,544,354	A	8/1996	May et al.	5,922,040	A	7/1999	Prabhakaran
5,559,520	A	9/1996	Barzegar et al.	5,923,702	A	7/1999	Brenner et al.
5,561,704	A	10/1996	Samilando	5,933,420	A	8/1999	Jaszewski et al.
5,566,235	A	10/1996	Hetz	5,938,721	A	8/1999	Dussell et al.
5,581,479	A	12/1996	McLaughlin	5,949,867	A	9/1999	Sonnenberg
5,583,864	A	12/1996	Lightfoot et al.	5,950,130	A	9/1999	Coursey
5,586,254	A	12/1996	Kondo et al.	5,961,593	A	10/1999	Gabber et al.
5,588,042	A	12/1996	Comer	5,963,866	A	10/1999	Palamara et al.
5,590,196	A	12/1996	Moreau	5,963,913	A	10/1999	Henneuse et al.
5,590,398	A	12/1996	Matthews	5,968,176	A	10/1999	Nessett et al.
5,592,470	A	1/1997	Rudrapatna et al.	5,969,678	A	10/1999	Stewart
5,594,779	A	1/1997	Goodman	5,982,867	A	11/1999	Urban et al.
5,596,625	A	1/1997	LeBlanc	5,983,091	A	11/1999	Rodriguez
5,602,843	A	2/1997	Gray	5,987,381	A	11/1999	Oshizawa
5,608,854	A	3/1997	Labeledz et al.	5,991,287	A	11/1999	Diepstraten et al.
5,610,973	A	3/1997	Comer	5,995,015	A	11/1999	DeTemple et al.
5,625,364	A	4/1997	Herrick et al.	6,006,090	A	12/1999	Coleman et al.
5,625,668	A	4/1997	Loomis	6,009,398	A	12/1999	Mueller et al.
5,627,549	A	5/1997	Park	6,011,975	A	1/2000	Emery et al.
5,636,245	A	6/1997	Ernst et al.	6,018,293	A	1/2000	Smith et al.
5,646,632	A	7/1997	Khan et al.	6,026,151	A	2/2000	Bauer et al.
5,654,959	A	8/1997	Baker et al.	6,028,921	A	2/2000	Malik et al.
5,657,375	A	8/1997	Connolly et al.	6,047,327	A	4/2000	Tso et al.
5,661,492	A	8/1997	Shoap et al.	6,055,637	A	4/2000	Hudson et al.
				6,058,106	A	5/2000	Cudak et al.
				6,067,082	A	5/2000	Enmei
				6,067,297	A	5/2000	Beach
				6,073,062	A	6/2000	Hoshino et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

6,091,956	A	7/2000	Hollenberg	6,414,635	B1	7/2002	Stewart et al.
6,101,381	A	8/2000	Tajima et al.	6,414,950	B1	7/2002	Rai et al.
6,101,443	A	8/2000	Kato et al.	6,415,019	B1	7/2002	Savaglio et al.
6,112,186	A	8/2000	Bergh et al.	6,418,308	B1	7/2002	Heinonen et al.
6,115,669	A	9/2000	Watanabe et al.	6,421,441	B1	7/2002	Dzuban
6,122,520	A	9/2000	Want et al.	6,421,714	B1	7/2002	Rai et al.
6,133,853	A	10/2000	Obradovich et al.	6,427,073	B1	7/2002	Kortelsalmi et al.
6,138,003	A	10/2000	Kingdon et al.	6,427,115	B1	7/2002	Sekiyama
6,138,119	A	10/2000	Hall et al.	6,427,119	B1	7/2002	Stefan et al.
6,141,609	A	10/2000	Herdeg et al.	6,430,276	B1	8/2002	Bouvier et al.
6,144,645	A	11/2000	Struhsaker et al.	6,430,562	B1	8/2002	Kardos et al.
6,154,152	A	11/2000	Ito	6,442,391	B1	8/2002	Johansson et al.
6,154,637	A	11/2000	Wright et al.	6,442,479	B1	8/2002	Barton
6,157,829	A	12/2000	Grube et al.	6,442,687	B1	8/2002	Savage
6,157,946	A	12/2000	Itakura et al.	6,449,272	B1	9/2002	Chuah et al.
6,163,274	A	12/2000	Lindgren	6,449,497	B1	9/2002	Kirbas et al.
6,167,255	A	12/2000	Kennedy, III et al.	6,452,498	B2	9/2002	Stewart
6,182,226	B1	1/2001	Reid et al.	6,456,234	B1	9/2002	Johnson
6,184,829	B1	2/2001	Stilp	6,463,533	B1	10/2002	Calamera et al.
6,185,426	B1	2/2001	Alperovich et al.	6,470,378	B1	10/2002	Tracton et al.
6,185,484	B1	2/2001	Rhinehart	6,470,447	B1	10/2002	Lambert et al.
6,192,314	B1	2/2001	Khavakh et al.	6,473,626	B1	10/2002	Nevoux et al.
6,202,054	B1	3/2001	Lawlor et al.	6,477,382	B1	11/2002	Mansfield et al.
6,205,478	B1	3/2001	Sugano et al.	6,477,526	B2	11/2002	Hayashi et al.
6,208,854	B1	3/2001	Roberts et al.	6,484,029	B2	11/2002	Hughes et al.
6,208,866	B1	3/2001	Rouhollahzadeh et al.	6,484,092	B2	11/2002	Seibel
6,226,277	B1	5/2001	Chuah	6,484,148	B1	11/2002	Boyd
6,229,477	B1	5/2001	Chang et al.	6,490,291	B1	12/2002	Lee et al.
6,229,810	B1	5/2001	Gerszberg et al.	6,496,491	B2	12/2002	Chuah et al.
6,233,329	B1	5/2001	Urban et al.	6,496,931	B1	12/2002	Rajchel et al.
6,233,452	B1	5/2001	Nishino	6,505,046	B1	1/2003	Baker
6,236,360	B1	5/2001	Rudow et al.	6,505,048	B1	1/2003	Moles et al.
6,236,365	B1	5/2001	LeBlanc et al.	6,505,049	B1	1/2003	Dorenbosch
6,236,940	B1	5/2001	Rudow et al.	6,505,120	B2	1/2003	Yamashita et al.
6,246,361	B1	6/2001	Weill et al.	6,505,163	B1	1/2003	Zhang et al.
6,246,948	B1	6/2001	Thakker	6,512,754	B2	1/2003	Feder et al.
6,252,544	B1	6/2001	Hoffberg	6,516,055	B1	2/2003	Bedeski et al.
6,259,405	B1	7/2001	Stewart et al.	6,516,416	B2	2/2003	Gregg et al.
6,263,209	B1	7/2001	Reed et al.	6,519,252	B2	2/2003	Sallberg
6,266,615	B1	7/2001	Jin	6,519,458	B2	2/2003	Oh et al.
6,278,938	B1	8/2001	Alumbaugh	6,522,876	B1	2/2003	Weiland et al.
6,285,665	B1	9/2001	Chuah	6,526,275	B1	2/2003	Calvert
6,285,931	B1	9/2001	Hattori et al.	6,526,349	B2	2/2003	Bullock et al.
6,298,234	B1	10/2001	Brunner	6,532,418	B2	3/2003	Chun et al.
6,308,273	B1	10/2001	Goertzel et al.	6,545,596	B1	4/2003	Moon
6,311,069	B1	10/2001	Havinis et al.	6,546,257	B1	4/2003	Stewart
6,317,718	B1	11/2001	Fano	6,560,442	B1	5/2003	Yost et al.
6,321,092	B1	11/2001	Fitch et al.	6,560,461	B1	5/2003	Fomukong et al.
6,324,396	B1	11/2001	Vasa et al.	6,571,279	B1	5/2003	Herz et al.
6,326,918	B1	12/2001	Stewart	6,577,643	B1	6/2003	Rai et al.
6,327,254	B1	12/2001	Chuah	6,577,644	B1	6/2003	Chuah et al.
6,327,357	B1	12/2001	Meek et al.	6,594,482	B1	7/2003	Findikli et al.
6,332,127	B1	12/2001	Bandera et al.	6,615,131	B1	9/2003	Rennard et al.
6,332,163	B1	12/2001	Bowman-Amuah	6,618,474	B1	9/2003	Reese
6,340,958	B1	1/2002	Cantu et al.	6,618,593	B1	9/2003	Drutman et al.
6,343,290	B1	1/2002	Cossins et al.	6,622,016	B1	9/2003	Sladek et al.
6,345,288	B1	2/2002	Reed et al.	6,628,627	B1	9/2003	Zendle et al.
6,353,664	B1	3/2002	Cannon et al.	6,628,928	B1	9/2003	Crosby et al.
6,359,880	B1	3/2002	Curry et al.	6,628,938	B1	9/2003	Rachabathuni et al.
6,360,101	B1	3/2002	Irvin	6,633,633	B1	10/2003	Bedingfield
6,366,561	B1	4/2002	Bender	6,640,184	B1	10/2003	Rabe
6,370,389	B1	4/2002	Isomursu et al.	6,647,257	B2	11/2003	Owensby
6,377,548	B1	4/2002	Chuah et al.	6,647,269	B2	11/2003	Hendrey et al.
6,377,810	B1	4/2002	Geiger et al.	6,650,901	B1	11/2003	Schuster et al.
6,377,982	B1	4/2002	Rai et al.	6,654,610	B1	11/2003	Chen et al.
6,381,311	B2	4/2002	Joyce et al.	6,662,014	B1	12/2003	Walsh
6,385,531	B2	5/2002	Bates et al.	6,665,536	B1	12/2003	Mahany
6,385,591	B1	5/2002	Mankoff	6,665,718	B1	12/2003	Chuah et al.
6,389,055	B1	5/2002	August et al.	6,671,272	B2	12/2003	Vaziri et al.
6,389,426	B1	5/2002	Turnbull et al.	6,675,017	B1	1/2004	Zellner et al.
6,393,482	B1	5/2002	Rai et al.	6,675,208	B1	1/2004	Rai et al.
6,400,722	B1	6/2002	Chuah et al.	6,677,894	B2	1/2004	Sheynblat et al.
6,405,123	B1	6/2002	Rennard et al.	6,697,018	B2	2/2004	Stewart et al.
				6,697,783	B1	2/2004	Brinkman et al.
				6,701,160	B1	3/2004	Pinder et al.
				6,701,251	B2	3/2004	Stefan et al.
				6,704,311	B1	3/2004	Chuah et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

6,725,048 B2	4/2004	Mao et al.	2002/0037744 A1	3/2002	Bhatia et al.
6,731,238 B2	5/2004	Johnson	2002/0037750 A1	3/2002	Hussain et al.
6,732,080 B1	5/2004	Blants	2002/0038362 A1	3/2002	Bhatia et al.
6,732,101 B1	5/2004	Cook	2002/0038384 A1	3/2002	Khan et al.
6,732,176 B1	5/2004	Stewart et al.	2002/0038386 A1	3/2002	Bhatia et al.
6,738,808 B1	5/2004	Zellner et al.	2002/0046069 A1	4/2002	Mozayeny et al.
6,754,504 B1	6/2004	Reed	2002/0046077 A1	4/2002	Mozayeny et al.
6,754,582 B1	6/2004	Smith et al.	2002/0046090 A1	4/2002	Stewart
6,759,960 B2	7/2004	Stewart et al.	2002/0052781 A1	5/2002	Aufricht et al.
6,772,064 B1	8/2004	Smith et al.	2002/0077083 A1	6/2002	Zellner et al.
6,799,049 B1	9/2004	Zellner et al.	2002/0077084 A1	6/2002	Zellner et al.
6,801,509 B1	10/2004	Chuah et al.	2002/0077118 A1	6/2002	Zellner et al.
6,816,720 B2	11/2004	Hussain et al.	2002/0077130 A1	6/2002	Owensby
6,819,929 B2	11/2004	Antonucci et al.	2002/0077897 A1	6/2002	Zellner et al.
6,820,062 B1	11/2004	Gupta et al.	2002/0087335 A1	7/2002	Meyers et al.
6,829,475 B1	12/2004	Lee et al.	2002/0090932 A1	7/2002	Bhatia et al.
6,850,758 B1	2/2005	Paul et al.	2002/0091991 A1	7/2002	Castro
6,867,733 B2	3/2005	Sandhu et al.	2002/0095312 A1	7/2002	Wheat
6,868,074 B1	3/2005	Hanson	2002/0095454 A1	7/2002	Reed et al.
6,874,011 B1	3/2005	Spielman	2002/0102993 A1	8/2002	Hendrey et al.
6,876,858 B1	4/2005	Duvall et al.	2002/0107027 A1	8/2002	O'Neil
6,898,569 B1	5/2005	Bansal et al.	2002/0120713 A1	8/2002	Gupta et al.
6,937,869 B1	8/2005	Rayburn	2002/0161637 A1	10/2002	Sugaya
6,937,998 B1	8/2005	Swartz et al.	2002/0174147 A1	11/2002	Wang et al.
6,954,147 B1	10/2005	Cromer et al.	2003/0003990 A1	1/2003	Von Kohorn
6,985,747 B2	1/2006	Chithambaram	2003/0016233 A1	1/2003	Charpentier
6,999,572 B1	2/2006	Shaffer et al.	2003/0018527 A1	1/2003	Filepp et al.
7,005,985 B1	2/2006	Steeves	2003/0030731 A1	2/2003	Colby
7,009,556 B2	3/2006	Stewart et al.	2003/0140088 A1	7/2003	Robinson et al.
7,023,995 B2	4/2006	Olsson	2003/0169151 A1	9/2003	Ebling et al.
7,043,231 B2	5/2006	Bhatia et al.	2004/0002329 A1	1/2004	Bhatia et al.
7,058,594 B2	6/2006	Stewart et al.	2004/0097243 A1	5/2004	Zellner et al.
7,069,319 B2	6/2006	Zellner et al.	2004/0111269 A1	6/2004	Koch
7,085,555 B2	8/2006	Zellner et al.	2004/0116131 A1	6/2004	Hochrainer et al.
7,103,368 B2	9/2006	Teshima	2004/0151151 A1	8/2004	Kubler et al.
7,103,476 B2	9/2006	Smith et al.	2004/0164898 A1	8/2004	Stewart
7,106,843 B1	9/2006	Gainsboro et al.	2004/0186902 A1	9/2004	Stewart et al.
7,110,749 B2	9/2006	Zellner et al.	2004/0201459 A1	10/2004	Rich et al.
7,116,977 B1	10/2006	Moton et al.	2004/0203903 A1	10/2004	Wilson et al.
7,124,101 B1	10/2006	Mikurak	2004/0205198 A1	10/2004	Zellner et al.
7,130,630 B1	10/2006	Enzmann et al.	2004/0228330 A1	11/2004	Kubler et al.
7,139,722 B2	11/2006	Perrella et al.	2004/0246940 A1	12/2004	Kubler et al.
7,155,199 B2	12/2006	Zalewski et al.	2004/0252051 A1	12/2004	Johnson
7,177,651 B1	2/2007	Almassy	2004/0264442 A1	12/2004	Kubler et al.
7,181,225 B1	2/2007	Moton et al.	2004/0266453 A1	12/2004	Maanoja et al.
7,181,529 B2	2/2007	Bhatia et al.	2005/0002419 A1	1/2005	Doviyak et al.
7,188,027 B2	3/2007	Smith et al.	2005/0004838 A1	1/2005	Perkowski et al.
7,190,960 B2	3/2007	Wilson et al.	2005/0017068 A1	1/2005	Zalewski et al.
7,203,502 B2	4/2007	Wilson et al.	2005/0043036 A1	2/2005	Ioppe et al.
7,212,829 B1	5/2007	Lau et al.	2005/0050227 A1	3/2005	Michelman
7,224,978 B2	5/2007	Zellner et al.	2005/0060365 A1	3/2005	Robinson et al.
7,236,799 B2	6/2007	Wilson et al.	2005/0096067 A1	5/2005	Martin
RE39,717 E	7/2007	Yates et al.	2005/0114777 A1	5/2005	Szeto
7,245,925 B2	7/2007	Zellner	2005/0151655 A1	7/2005	Hamrick et al.
7,260,378 B2	8/2007	Holland et al.	2005/0246097 A1	11/2005	Hamrick et al.
7,272,493 B1	9/2007	Hamrick et al.	2005/0272445 A1	12/2005	Zellner
7,292,939 B2	11/2007	Smith et al.	2005/0283833 A1	12/2005	Lalonde et al.
7,295,924 B2	11/2007	Smith et al.	2006/0009190 A1	1/2006	Laliberte
7,362,851 B2	4/2008	Contractor	2006/0010202 A1*	1/2006	Blackstock et al. 709/204
7,383,052 B2	6/2008	Moton et al.	2006/0022048 A1	2/2006	Johnson
7,386,396 B2	6/2008	Johnson	2006/0030335 A1	2/2006	Zellner et al.
7,787,887 B2	8/2010	Gupta et al.	2006/0030339 A1	2/2006	Zhovnirovsky et al.
2001/0001239 A1	5/2001	Stewart	2006/0059043 A1	3/2006	Chan et al.
2001/0005864 A1	6/2001	Mousseau et al.	2006/0089134 A1	4/2006	Moton et al.
2001/0007450 A1	7/2001	Begum	2006/0094447 A1	5/2006	Zellner
2001/0021646 A1	9/2001	Antonucci et al.	2006/0099966 A1	5/2006	Moton et al.
2001/0028301 A1	10/2001	Geiger et al.	2006/0105784 A1	5/2006	Zellner et al.
2001/0034709 A1	10/2001	Stoifo et al.	2006/0106537 A1	5/2006	Hamrick et al.
2001/0049275 A1	12/2001	Pierry et al.	2006/0136544 A1	6/2006	Atsmon et al.
2001/0051911 A1	12/2001	Marks et al.	2006/0164302 A1	7/2006	Stewart et al.
2002/0035474 A1	3/2002	Alpdemir	2006/0167986 A1	7/2006	Trzyna et al.
2002/0035493 A1	3/2002	Mozayeny et al.	2006/0183467 A1	8/2006	Stewart et al.
2002/0037709 A1	3/2002	Bhatia et al.	2006/0189327 A1	8/2006	Zellner et al.
			2006/0189332 A1	8/2006	Benco et al.
			2006/0194589 A1	8/2006	Sankisa
			2006/0195570 A1	8/2006	Zellner et al.
			2006/0198359 A1	9/2006	Fok et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2006/0253252 A1 11/2006 Hamrick et al.
 2007/0005188 A1 1/2007 Johnson
 2007/0010260 A1 1/2007 Zellner et al.
 2007/0042789 A1 2/2007 Moton et al.
 2007/0105565 A1 5/2007 Enzmann et al.
 2007/0124721 A1 5/2007 Cowing et al.
 2007/0136603 A1 6/2007 Kuecuekyan
 2007/0232326 A1 10/2007 Johnson
 2007/0233387 A1 10/2007 Johnson
 2007/0244633 A1 10/2007 Phillips et al.
 2007/0250920 A1 10/2007 Lindsay
 2007/0275730 A1* 11/2007 Bienas et al. 455/456.1
 2007/0276587 A1 11/2007 Johnson
 2007/0281716 A1 12/2007 Altman et al.
 2007/0287473 A1 12/2007 Dupray
 2008/0030308 A1 2/2008 Johnson
 2008/0071761 A1 3/2008 Singh et al.
 2008/0096529 A1 4/2008 Zellner
 2008/0170679 A1 7/2008 Sheha et al.
 2008/0301561 A1 12/2008 Bain
 2009/0054077 A1 2/2009 Gauthier et al.
 2009/0067593 A1 3/2009 Ahlin
 2009/0167524 A1 7/2009 Chesnutt et al.
 2009/0190734 A1 7/2009 White et al.
 2009/0233622 A1 9/2009 Johnson
 2009/0233623 A1 9/2009 Johnson
 2010/0069035 A1 3/2010 Johnson
 2010/0146160 A1 6/2010 Piekarski
 2010/0159946 A1 6/2010 Cheung et al.
 2010/0227595 A1 9/2010 Johnson
 2010/0235748 A1 9/2010 Johnson et al.
 2011/0021145 A1 1/2011 Johnson et al.

FOREIGN PATENT DOCUMENTS

EP 917320 5/1999
 EP 935364 8/1999
 EP 924914 4/2003
 EP 779752 6/2004
 EP 1435749 7/2004
 EP 1445923 8/2004
 EP 838933 4/2008
 GB 2396779 6/2004
 JP 01-194628 8/1989
 JP 03-128540 5/1991
 JP 07-234789 9/1995
 JP 07-288514 10/1995
 JP 07-319706 12/1995
 JP 08-44568 2/1996
 JP 08-87296 4/1996
 JP 11-168478 6/1999
 WO 98/19484 5/1998
 WO 99/16263 4/1999
 WO 99/27716 6/1999
 WO 99/51005 10/1999
 WO 99/55012 10/1999

WO WO 00/02365 1/2000
 WO WO 00/76249 12/2000
 WO WO 02/11407 2/2002
 WO WO 2004/080092 9/2004

OTHER PUBLICATIONS

Andy Harter and Andy Hooper, A Distributed Location system for the Active Office, IEEE Network, Jan./Feb. 1994.
 Max J. Egenhofer, Spatial SQL: A Query and Presentation Language, IEEE Network, Feb. 1994.
 Mike Spreitzer and Marvin Theimer, Providing Location Information in a Ubiquitous Computing Environment, Proceedings of the Fourteenth ACM Symposium on Operating Systems Principles, Dec. 1993.
 George W. Fitzmaurice, Situated Information Spaces and Spatially Aware Palmtop Computers, Communication of the ACM, Jul. 1993.
 Ronald Azuma, Tracking Requirements for Augmented Reality, Communications of the ACM, vol. 36 No. 1, Jan. 1992.
 Roy Want, et al., The Active Badge Location System, ACM Transactions on Information Systems, vol. 10, No. 1, Jan. 1992.
 Marvin White, Emerging Requirements for Digital Maps for In-Vehicle Pathfinding and Other Traveller Assistance, Vehicular Navigation and Information Systems Conference Proceedings, Part 1, Oct. 1991.
 Fred Phail, The Power of a Personal Computer for Car Information and Communications Systems, Vehicular Navigation and Information Systems Conference Proceedings, Part 1, Oct. 1991.
 Thomas A. Dingus, et al., Human Factors Engineering the TravTek Driver Interface, Vehicular Navigation and Information Systems Conference Proceedings, Part II, Oct. 1991.
 Michael Muffat et al., European Cooperation on Dual Mode Route Guidance Perspectives for Advanced Research Partners, Vehicular Navigation and Information Systems Conference Proceedings, Part II, Oct. 1991.
 High-Performance Wireless Access Point for the Enterprise, ORiNOCO™ AP-100 Access Point for the Enterprise, Lucent Technologies, 2000.
 MobileStar Network, MobileStar Network First to Provide Business Travelers with High-Speed Data Access via the Internet-Wirelessly, New York, NY, Jun. 24, 1998.
 Harry Chen, et al., "Dynamic Service Discovery for Mobile Computing: Intelligent Agents Meet Jini in the Aether," Cluster Computing, Special Issue on Internet Scalability, vol. 4, No. 4, Feb. 2001.
 3rd Generation Partnership Project: Technical Specification Group Services and System Aspects; Functional Stage 2 Description of Location Services in UMTS (1999).
 http://www.openwave.com/us/news_room/press_releases/2001/20020320, "Open Wave Announces Availability to End-to-End Set of Location Services for Wireless Internet".
 Trembly, A., "Wireless products arm road warriors," National Underwriter, vol. 105, No. 3, pp. 23-25, Dialog 02113577 67213220 (Jan. 2001).
 Antonio, Interfaces and Algorithms for a Wide-Area Event Notification Service, Oct. 1999.

* cited by examiner

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