UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

SKYHOOK WIRELESS, INC., Plaintiff, v. GOOGLE INC., Defendant.	CIVIL ACTION NO. 1:10-cv-11571-RWZ
GOOGLE INC., Counterclaim-Plaintiff, v. SKYHOOK WIRELESS, INC., Counterclaim-Defendant.	

GOOGLE INC.'S PRELIMINARY INVALIDITY CONTENTIONS

Pursuant to the Parties' Joint Statement filed on December 7, 2010 and Local Rule 16.6, defendant Google Inc. ("Google") hereby serves its Preliminary Invalidity Disclosures for U.S. Patent Numbers 7,414,988 ("'988 patent"), 7,433,694 ("'694 patent"), 7,474,897 ("'897 patent"), and 7,305,245 ("'245 patent") (collectively, "patents-in-suit") on plaintiff Skyhook Wireless, Inc. ("Skyhook").

PRELIMINARY STATEMENT, RESERVATION OF RIGHTS, AND GENERAL OBJECTIONS

1. This preliminary disclosure is directed to invalidity issues only and does not address non-infringement, unenforceability, or claim construction issues. Google reserves all rights with respect to such issues.

2. These Preliminary Invalidity Contentions are preliminary and are based on Google's current knowledge, understanding, and belief as to the facts and information available as of the

date of these contentions. Discovery in this action is ongoing, Skyhook has not yet produced documents concerning its conception or reduction to practice of the patents in suit, or any documents relating to the meaning of claim terms used in the patents, and Google has not completed its investigation, discovery, or analysis of information related to this action. While Google has made a good-faith effort to provide a comprehensive list of prior art relevant to this case, Google reserves the right to amend, supplement, or materially modify its prior art list and invalidity contentions as discovery progresses. This reservation of rights includes the right to supplement prior art under 35 U.S.C. §§ 102(a), (b), (c), (d), (e), (f), and (g), 103, 112 and based on information Google may learn during discovery in this case.

3. Google provides these Preliminary Invalidity Contentions prior to any claim construction ruling by the Court with respect to the claims of the ‘988, ‘694, ‘897, and ‘245 patents asserted by Skyhook in its Infringement Contentions. Any invalidity analysis depends, ultimately, upon claim construction, which is a question of law reserved for the Court. Google reserves the right to amend, supplement, or materially modify its prior art list and invalidity contentions after the claims have been construed by the Court. Google also reserves the right to amend, supplement, or materially modify its prior art list and invalidity contentions based on any claim construction positions that Skyhook may take in this case and as it discovers additional information. Google also reserves the right to assert that a claim is indefinite, not enabled, or fails to meet the written description requirement during or after the claim construction process, including based on any claim construction position Skyhook may take or based on any claim construction the Court may adopt in this case.

SUPPLEMENTAL PRELIMINARY INVALIDITY CONTENSIONS

I. Identification of Prior Art

Skyhook accuses several of Google's products of infringing claims 1-3 of the '988 patent, claims 1 and 2 of the '694 patent, claims 1-4 of the '897 patent, and claims 1, 2, 4-6, 8 of the '245 patent (collectively, the "Asserted Claims"). *See* Plaintiff Skyhook Wireless Inc.'s Preliminary Infringement Disclosure at 2-4. The Asserted Claims of the '988, '694, '897, and '245 patents are invalid for at least the reasons discussed herein.

In addition to the prior art identified in the '988, '694, '897, and '245 patents, and particularly in the background of the invention sections of each patent and prosecution histories, at least the prior art references identified below are relevant to the invalidity of the '988, '694, '897, and '245 patents as either prior art under 35 U.S.C §§ 102 or 103 as indicated. These references alone, or in combination, render each asserted claim of the '988, '694, '897, and '245 patents invalid under 35 U.S.C. § 102 and/or 35 U.S.C. § 103.

I. List of Relevant Prior Art References:

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
1. Wolf-Dietrich Ambrosch et al. "The Intelligent Network: A Joint Study by Bell Atlantic, IBM and Siemens, Chapter 9. ERS Service Description", pp. 162-177.		1989	§ 102(b)
2. U.S. Patent No. 4,310,726 to Asmuth	Feb. 4, 1980	Jan. 12, 1982	§§ 102(b) & (e)
3. Paramvir Bahl et al. "RADAR: An In-Building RF-based User Location and Tracking System", Microsoft Research, 2000.		2000	§ 102(b)
4. Paramvir Bahl et al. "A Software System for Locating Mobile Users: Design, Evaluation, and Lessons", Microsoft Research, University of California at San Diego, 2000.		2000	§ 102(b)
5. U.S. Patent No. 7,440,755 to Balachandran et al.	Jun. 17, 2003	Oct. 21, 2008	§§ 102(b) & (e)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
6. Ezekiel S. Bhasker et al. "Employing User Feedback for Fast, Accurate, Low-Maintenance Geolocationing", Department of Computer Science and Engineering, University of California, San Diego, 2004.		2004	§§ 102(a) & (b)
7. Per Bjorndahl, et al. "CME20 - A Total Solution for GSM Networks", Ericsson Review No., 3, 1991, pp. 72-79.		1991	§ 102(b)
8. Bluesoft, Inc., Aeroscout, available at least as early as August, 2003 (*see* http://replay.waybackmachine.org/20030802052607/http://bluesoft-inc.com/wlan.asp, last accessed April 14, 2011).		Aug. 2003	
9. Eloise Brackenridge "The New Urban Infrastructure: Cities and Telecommunications", University of Texas at Austin, Center for Research on Communication, Technology and Society, pp. 77-100,		1985	§ 102(b)
10. Mary Buccafurno, "The Philadelphia Story", TE&M Special Report 911, pp. 68-72.		Dec. 15, 1987	§ 102(b)
11. California Legislature Senate Committee on Energy and Public Utilities and Joint Committee on Fire, Police, Emergency and Disaster Services, Joint Interim Hearing on The 911 Emergency Response System - An Overview of its Effectiveness, Los Angeles California, 1990.		Nov. 21, 1990	§ 102(b)
12. U.S. Patent No. 5,379,337 to Castillo et al.	Aug. 16, 1991	Jan. 3, 1995	§§ 102(b) & (e)
13. Paul Castro, et al. "A Probabilistic Room Location Service fro Wireless Networked Environments" Ubicomp 2001: Ubiquitious Computing, Intl. Conference Atlanta, GA, Sept. 30-Oct. 2, 2001, pp. 19-34 (2001).		2001	§ 102(b)
14. U.S. Patent No. 5,161,180 to Chavous	Oct. 19, 1990	Nov. 3, 1992	§§ 102(b) & (e)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
15. Yatin Chawathe et al. "A Case Study in Building Layered DHT Applications", Intel Research Seattle, University of California, San Diego, Intel Research Berkeley, ICSI, 2005.		2005	§§ 102(a)
16. Yu-Chung Cheng et al. "Accuracy Characterization for Metropolitan-scale Wi-Fi Localization" University of California, San Diego; Intel Research Seattle; Microsoft Corporation, 2005.		Jan. 2005	§§ 102(a)
17. U.S. Patent No. 4,924,491 to Compton et al.	Nov. 18, 1988	May 8, 1990	§§ 102(b) & (e)
18. U.S. Patent No. 3,881,060 to Connell et al.	June 4, 1973	Apr. 29, 1975	§§ 102(b) & (e)
19. Kay Connelly et al. "A Toolkit for Automatically Construction Outdoor Radio Maps" Proceedings of the Intl. Conference on Information Technology: Coding and Computing (ITCC 2005).		2005	§ 102(b)
20. U.S. Patent No. 5,043,736 to Darnell et al.	Jul. 27, 1990	Aug. 27, 1991	§§ 102(b) & (e)
21. Thomas Dayharsh et al. "Update on the National Emergency Number 911", IEEE Transactions on Vehicular Technology, Vol. VT-28, No. 4, November, pp. 292-297, 1979.		Nov. 1979	§ 102(b)
22. Edgar S. Delong, Jr. "Making 911 even better" Telephony Integrating Voice and Data Communications, An Intertec Publication, pp. 60-63, (1987)		Dec. 14, 1987	§ 102(b)
23. Ernest DeNigris, et al. "Enhanced 911: emergency calling with a plus" Bell Laboratories Record, pp. 74-79. (March, 1980)		1980	§ 102(b)
24. U.S. Patent No. 5,235,633 to Dennison et al.	Dec. 26, 1991	Aug. 10, 1993	§§ 102(b) & (e)
25. U.S. Patent No. 7,116,988 to Dietrich et al.	Mar. 16, 2004	Oct. 3, 2006	§§ 102(e)
26. U.S. Patent No. 7,433,696 to Dietrich et al.	May 18, 2004	Oct. 7, 2008	§§ 102(a) & (e)
27. U.S. Patent No. 5,389,935 to Drouault et al.	Mar. 23, 1994	Feb. 14, 1995	§§ 102(b) & (e)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
28. U.S. Patent No. 5,119,504 to Durboraw, III	Jul. 19, 1990	June 2, 1992	§§ 102(b) & (e)
29. Wayne Eckerson, "Users test toll-free net access options", Management Strategies, Network World, pp. 17-18, December 30, 1991/January 6, 1992.		December 30, 1991/January 6, 1992	§ 102(b)
30. Ekahau, Ekahau Positioning Engine 2.1, available at least as early as October, 2003 (*see* http://replay.waybackmachine.org/20031008125411/http://www.ekahau.com/products/, http://replay.waybackmachine.org/20031004002510/http://www.ekahau.com/products/positioningengine/, http://replay.waybackmachine.org/20031011143106/http://www.ekahau.com/products/positioningengine/epe20_features.html, http://replay.waybackmachine.org/20031011193911/http://www.ekahau.com/products/positioningengine/epe20_specifications.html, http://replay.waybackmachine.org/20031208195116/http://www.ekahau.com/products/positioningengine/epe20_requirements.html, and http://replay.waybackmachine.org/20031217181553/http://www.ekahau.com/products/positioningengine/epe20_casestudies.html, last accessed April 14, 2011).		2003	§ 102(b)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
31. Ekahau, Ekahau Site Survey 1.0, available at least as early as October, 2003 (*see* http://replay.waybackmachine.org/20031008125411/http://www.ekahau.com/products/, http://replay.waybackmachine.org/20030807204446/http://www.ekahau.com/products/sitesurvey/, and http://replay.waybackmachine.org/20030801080918/http://www.ekahau.com/products/sitesurvey/ess10_why.html, last accessed April 14, 2011).		2003	§ 102(b)
32. Ekahau, Ekahau Client 3.0, available at least as early as October, 2003 (*see* http://replay.waybackmachine.org/20031008125411/http://www.ekahau.com/products/, http://replay.waybackmachine.org/20031004002735/http://www.ekahau.com/products/client/, and http://replay.waybackmachine.org/20030929003821/http://www.ekahau.com/products/client/ReleaseNotes3_0.html, last accessed April 14, 2011).		2003	§ 102(b)
33. Eiman Elnahrawy, et al. "Using Area-based Presentations and Metrics for Localization Systems in Wireless LANs" Proceedings of the 29th Annual IEEE Intl. Conference on Local Computer Networks, IEEE Computer Society Press LCN'04, (2004).		Nov. 2004	§ 102(a)
34. JP04-035345 to Emi	May 28, 1990	Feb. 2, 1992	§§ 102(b) & (e)
35. U.S. Patent No. 5,095,505 to Finucane et al.	May 17, 1991	Mar. 10, 1992	§§ 102(b) & (e)
36. WO 03/021851 to Gray et al.	Sept. 5, 2002	Mar. 13, 2003	§§ 102(b) & (e)
37. U.S. Patent No. 6,674,403 to Gray, et al.	Sept. 5, 2002	Jan. 6, 2004	§§ 102(b) & (e)
38. U.S. Patent No. 7,257,411 to Gwon et al.	Dec. 27, 2002	Aug. 14, 2007	§§ 102(b) & (e)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
39. Dean Harvey et al. "Call Center Solutions" Intelligent Networking: Business Communications Systems, AT&T Technical Journal, Vol. 70, No. 5 (Sept./Oct. 1991)		1991	§102 (b)
40. Ahmad Hatami et al. "A Comparative Performance Evaluation of RSS-Based Positioning Algorithms Used in WLAN Networks" 2005 IEEE Wireless Communications and Networking Conference, IEEE Communications Society, WCNC Vol. 4, (March 13-17, 2005).		2005	§ 102(a)
41. Charles Head "Intelligent Network: A Distributed System" IEEE Communications Magazine, pp. 16-20, (December 1988).		1988	§102(b)
42. Jeffrey Hightower et al. "A Survey and Taxonomy of Location Systems for Ubiquitous Computing", University of Washington, 2001.		Aug. 24, 2001	§ 102(b)
43. William Honig et al. "The Realities of Service Creation on Switching Systems Through Attached Processors" XII International Switching Symposium, Vol. VI, pp. 51-54, (May 27-June 1, 1990).		1990	§102(b)
44. Paul Hunter " The Sources of Innovation in New Jersey Bell Switching Services" Master of Science Thesis, Massachusetts Institute of Technology, (June 1991).		June, 1991	§102(b)
45. Chris Hurley et al., "War Driving Drive, Detect, Defend A Guide to Wireless Security", Syngress Publishing, Inc., 2004		2004	
46. Ming-Hui Jin et al. "802.11-based Positioning System for Context Aware Applications" GLOBECOM, IEEE 2003.		2003	§ 102(b)
47. U.S. Patent No. 7,389,114 to Ju et al.	Feb. 11, 2004	June 17, 2008	§§ 102(e)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
48. Jong Hee Kang et al. "Extracting Places from Traces of Locations" Dept. of Computer Science and Engineering, University of Washington, WMASH '04, pp. 110-118, (October 1, 2004).		Oct. 1, 2004	§§ 102(a), (b), & (e)
49. C. A. Kent et al. "Position Estimation of Access Points in 802.11 Wireless Network" Lawrence Livermore National Laboratory, 2004.		Jan. 21, 2004	§§ 102(a) & (b)
50. John Krumm et al. "The NearMe Wireless Proximity Server" UbiComp 2004, LNCS 3205, pp. 283-300, (2004).		2004	§ 102(a) & (b)
51. Robert K. Kwan "GLOBALSTAR: Linking the World via Mobile Connections", IEEE Intl. Symposium on Personal, Indoor & Mobile Radio Communications, pp. 318-323, (Sept. 24-25, 1991).		1991	§102 (b)
52. Anthony LaMarca et al. "Place Lab: Device Positioning Using Radio Beacons in the Wild" Intel Research Seattle; Intel Research Cambridge; UC San Diego; University of Washington; Information School, University of Washington, 2004.		2004	§§ 102(a) & (b)
53. Anthony LaMarca et al. "Place Lab: Device Positioning Using Radio Beacons in the Wild" PERVASIVE 2005, LNCS 3468, pp. 116-133, (2005).		2005	§§ 102(a)
54. U.S. Patent No. 7,412,246 to Lewis et al.	Oct. 6, 2003	Aug. 12, 2008	§§ 102(b) & (e)
55. U.S. Patent Application Publication No. 2009/0017841 to Lewis et al.	Jul 8, 2008	Jan. 15, 2009	§§ 102(b) & (e)
56. U.S. Patent No. 7,130,642 to Lin	Mar. 2, 2004	Oct. 31, 2006	§§ 102(a) & (e)
57. Konrad Lorinez et al. "MoteTrack: A Robust, Decentralized Approach to RF-Based Location Tracking" LoCA 2005, LNCS 3479, pp. 63-82, (2005).		2005	§§ 102(a) & (b)
58. U.S. Patent No. 7,519,372 to MacDonald et al.	Apr. 3, 2002	Apr. 14, 2009	§§ 102(b) & (e)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
59. Bernard J.T. Mallinder, "The Final Countdown to GSM", 1991 Pan European Digital Cellular Radio Conference, Acropolis Conference Center, Nice, France.		Feb. 5-6 1991	§ 102(b)
60. U.S. Patent No. 5,353,023 to Mitsugi	Jun. 25, 1992	Oct. 4,1994	§§ 102(b) & (e)
61. WO 05/004527 to Moeglein et al.	June 28, 2004	Jan. 13, 2005	§§ 102(a) & (e)
62. U.S. Patent No. 5,235,630 to Moody et al.	Apr. 17, 1991	Aug. 10, 1993	§§ 102(b) & (e)
63. European Pat. App. EP1359714A2 to Moore et al.	May 2, 2003	Nov. 5, 2003	§§ 102(b) & (e)
64. U.S. Patent No. 6,664,925 to Moore et al.	May 2, 2002	Dec. 16, 2003	§§ 102(b) & (e)
65. Netstumbler Blog Posting, "Wardriving as a Proxy for Wi-Fi GPS Location" (*available at* http://www.netstumbler.org/news/wardriving-as-a-proxy-for-wi-fi-gps-location-t10762.html, May 11, 2004 - May 17, 2004, last accessed April, 13, 2004)		May 11, 2004 - May 17, 2004	§§ 102(a) & (b)
66. Newbury Networks, Newbury Networks' LocaleServer, available at least as early as October, 2004 (*see* http://replay.waybackmachine.org/20041010054718/http://www.newburynetworks.com/products/coretech.php, last accessed April 14, 2011).		2004	§ 102(b)
67. Newbury Networks, LocalePoints, available at least as early as October, 2004 (*see* http://replay.waybackmachine.org/20041009170934/http://www.newburynetworks.com/products/coretech.php?localepoints, , last accessed April 14, 2011).		2004	§ 102(b)
68. U.S. Patent No. 7,299,058 to Ogino	Aug. 11, 2005	Nov. 20, 2007	§ 102(e)
69. U.S. Patent No. 7,672,675 to Pande et al.	Sep. 10, 2002	Mar. 2, 2010	§§ 102(b) & (e)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
70. Pango, PanGo Proximity Platform, available at least as early as October, 2003 (*see* http://replay.waybackmachine.org/20031002102757/http://pangonetworks.com/proximity.htm and http://replay.waybackmachine.org/20031002103310/http://pangonetworks.com/products.htm, last accessed April 14, 2011).		2003	§ 102(b)
71. Pango, PanGo Mobile Applications Suite, available at least as early as August, 2003 (*see* http://replay.waybackmachine.org/20030825161534/http://www.pangonetworks.com/mobile.htm and http://replay.waybackmachine.org/20031002103310/http://pangonetworks.com/products.htm, last accessed April 14, 2011).		2003	§ 102(b)
72. U.S. Patent No. 5,414,432 to Penny et al.	Apr. 22, 1993	May 9, 1995	§§ 102(b) & (e)
73. Canadian Pat. App. No. 2,056,203 to Reading et al.	Nov. 26, 1991	July 1, 1992	§§ 102(b) & (e)
74. European Pat. App. EP0493896A2 to Reading et al.	Dec. 5, 1991	July 8, 1992	§§ 102(b) & (e)
75. U.S. Patent No. 4,757,267 to Riskin	June 17, 1987	July 12, 1988	§§ 102(b) & (e)
76. Michael Robinson et al. "Received Signal Strength Based Location Estimation of a Wireless LAN Client" 2005 IEEE Wireless Communications and Networking Conference, IEEE Communications Society, WCNC Vol. 4, (March 13-17, 2005).		2005	§ 102(a)
77. Siddhartha Saha et al. "Location Determination of a Mobile Device Using IEEE 802.11b Access Point Signals" 2003 IEEE Wireless Communications and Networking Conference, IEEE Communications Society, pp. 1987-1992, (March 16-20, 2003).		2003	§ 102(b)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
78. Bill N. Schilit et al. "Challenge: Ubiquitous Location-Aware Computing and the "Place Lab" Initiative" Dept. of Computer Science and Engineering, University of Washington, WMASH '03, pp. 29-35, (Sept. 19, 2003).		2003	§ 102(b)
79. Bill N. Schilit et al., "Bootstrapping the Location-enhanced Word Wide Web" Intel Research Seattle; University of Washington; University of California at San Diego; University of California at Berkeley, 2003.		2003	§ 102(b)
80. U.S. Patent No. 7,426,197 to Schotten et al.	Oct. 7, 2005	Sept. 16, 2008	§§ 102(e)
81. U.S. Patent No. 7,373,154 to Sharony et al.	Dec. 7, 2006	May 13, 2008	§§ 102(a), (b), & (e)
82. U.S. Patent No. 7,319,878 to Sheynblat et al.	Oct. 21, 2004	Jan. 15, 2008	§§ 102(a) &(e)
83. U.S. Patent Application Publication No. 07/0077945A1 to Sheynblat	Aug. 24, 2005	Apr. 5, 2007	§ 102(e)
84. Peter Shipley, "Open WLANs the early results of war Driving" DEFCON9 Conference 802.11b War Driving Presentation		July 13-15, 2001	§ 102(b)
85. Peter Shipley, "802.11b War Driving and LAN Jacking", DEFCON 9 Conference, Las Vegas, Nevada, USA, July 13-15 2001, (*available at* http://www.defcon.org/html/links/dc-archives/dc-9-archive.html, last accessed April 13, 2011), video and transcript.		July 13-15, 2001	§ 102(b)
86. U.S. Patent No. 6,134,448 to Shoji et al.	Mar. 3, 1997	Oct. 17, 2000	§§ 102(b) & (e)
87. U.S. Patent No. 5,334,974 to Simms et al.	Feb. 6, 1992	Aug. 2, 1994	§§ 102(b) & (e)
88. Sue Spielman and Philip Brittan, "Java and GIS, Part 1: Intro to GIS", February 16, 2004 *available at* http://today.java.net/pub/a/today/2004/02/16/gis.html, last accessed April 14, 2011		Feb. 16, 2004	§§ 102(a) & (b)

Prior Art Reference	Filing/Priority Date	Issue/ Publication Date	Applicability
89. Sue Spielman and Simon Brown, "Java and GIS, Part 2: Mobile LBS", April 1, 2004 *available at* http://today.java.net/pub/a/today/2004/04/01/gis.html, last accessed April 14, 2011		Apr. 1, 2004	§ 102(a)
90. David Sterling et al. "The Iridium System - A Revolutionary satellite Communications System Developed with Innovative Applications of Technology", IEEE Communications Society, pp. 0436-0440, MILCOM '91 (1991).		1991	§ 102(b)
91. U.S. Patent No. 7,242,950 to Suryanarayana et al.	Feb. 18, 2003	Jul. 10, 2007	§§ 102(b) & (e)
92. Ali Taheri, et al. "Location Fingerprinting on Infrastructure 802.11 Wireless Local Area Networks (WLANs) using Locus, 29th Conference on Local Computer Networks, IEEE Communications Society, (Nov. 16-18, 2004).		2004	§ 102(b)
93. Texas Advisory Commission on Intergovernmental Relations, "Implementing 9-1-1 Systems in Texas: Legal and Institutional Background"		June, 1987	§ 102(b)
94. U.S. Patent No. 6,484,034 to Tsunehara et al.	Aug. 29, 2001	Nov. 19, 2002	§§ 102(b) & (e)
95. U.S. Patent No. 6,990,351 to Tsunehara et al.	Feb. 19, 2002	Jan. 24, 2006	§§ 102(b) & (e)
96. Bob Wallace "Domino's delivers using new call routing service" Network World, Vol. 8, Number 32.		Aug. 12, 1991	§ 102(b)
97. U.S. Patent No. 7,130,646 to Wang	Feb. 14, 2003	Oct. 31, 2006	§§ 102(b) & (e)
98. U.S. Patent No. 5,136,636 to Wegrzynowicz	Feb. 7, 1991	Aug. 4, 1992	§§ 102(b) & (e)
99. WO 04/002185A1 to Wood et al.	June 19, 2003	Dec. 31, 2003	§§ 102(b) & (e)
100. Alexandra Workman et. al. "International Applications of AT&T's Intelligent Network Platforms", AT&T Technical Journal, 1991, Volume 70, No. 34, pp. 44-57.		1991	§ 102(b)
101. JP03-235562 to Yoshihiro et al.	Feb. 13, 1990	Oct. 21, 1991	§§ 102(b) & (e)

II. Anticipation

B. The ‘988 and ‘694 Patents

The ‘988 and ‘694 patents are directed to a “Wi-Fi location server” that includes a “database of Wi-Fi access points” and “[a] database of Wi-Fi access points,” respectively. The patents claim priority to provisional patent application no. 60/623,108 filed on October 29, 2004. All of the claims of the ‘988 and ‘694 patents are anticipated by several prior art references. For example, all of the Asserted Claims of the ‘988 patent and the ‘694 patent are anticipated by at least U.S. Patent Nos. 7,130,646 (“Wang ‘646 patent”), 7,257,411 (“Gwon ‘411 patent”) and the Place Lab initiative and product, and the wigle.net project, which are described in several publications in the prior art list. Additionally, U.S. Patent No. 7,440,755 (“Balachandran ‘755 patent”) anticipates all Asserted claims of the ‘988 patent.

Attached hereto as Exhibit A are illustrative claim charts setting forth a correspondence between the asserted claims of the ‘988 and ‘646 patent and these anticipating references. These preliminary charts are premised on how the Plaintiff has asserted the patents in its infringement contentions against the accused products. In its infringement contentions, Plaintiff did not set forth a *prima facie* case of infringement. Nor did it provide with its contentions any claim construction or other explanation about the purported scope of the claimed inventions. Based on Plaintiff's infringement contentions, to the extent they are intelligible, Google understands Plaintiff to be construing the asserted claims in ways that are inconsistent with the language of the asserted claims, the disclosures of the patents-in-suit, and the prosecution histories of the patents-in-suit. It is expected that when the court construes the claims, and/or the plaintiff otherwise changes its contentions to be more specific and more closely related to the requirements of the patents, the references identified herein may be applied differently to the claims than as in the illustrative cases provided in the attached claim charts. Google reserves the

right to rely on each reference in its entirety for purposes of invalidity under 35 U.S.C. sections 102 and 103, including those portions that are identified in the chart with citations and portions that are not identified by citation. All citations provided are illustrative and are not intended to limit in any way the full context and disclosure of these references that is relevant to the Asserted Claims.

B. The '897 patent and '245 Patents

The '897 and '245 patents are directed to "methods of calculating the position of WiFi-enabled devices." Each of the Asserted Claims within these patents has as its focus determining the position of a Wi-Fi enabled device from the location of access points. The Asserted Claims, claims 1 - 4 of the '897 patent and claims 1, 2, 4-6 and 8 of the '245 patent are anticipated by at least the following references as shown by the charts attached hereto as Exhibit A: Wang '646 patent, Gwon '411 patent, Balachandran '755, and U.S. Patent No. 7,389,114 ("Ju '114 patent") and the Place Lab initiative and product, which are described in several publications in the prior art list. Illustrative, preliminary claim charts showing correspondence between each of the above identified references and the Asserted Claims, as described above, are included in Exhibit A.

III. Obviousness

A. The '988 and '694 Patents

As discussed above, the '988 and '694 Patents are directed to a "Wi-Fi location server" that includes a "database of Wi-Fi access points" and "[a] database of Wi-Fi access points," respectively. There are many disclosures in the prior art of a server having a database of access points, including Wi-Fi access points, or a database of such Wi-Fi access points, where the

locations of the Wi-Fi access points are calculated, updated over time and added to the database. This was a well known concept before the earliest filing date of any of the patents in suit.

The background of the invention section in each of the patents describes anticipatory prior art, but the plaintiff attempts to describe distinctions over the prior art that relate to the manner of collecting Wi-Fi access points by systematically driving according to a Chinese Postman algorithm. The platinff makes other attempts to describe a required systematic manner of collecting data that preserves "reference symmetry" and avoids "arterial bias" in determining the location of access points.

As discussed in connection with deficiencies under 35 U.S.C. § 112, the "reference symmetry" and avoiding "arterial bias" terms are unclear, with uncertain boundaries or scope and support in the specification. However, notwithstanding the presence of these terms in certain claims, it is clear that the prior art has completely anticipated creating databases of Wi-Fi access points with location information derived by walking, driving, doing either systematically, driving all the way around a building to identify accurately access points within the building, or any other conceivable or mundane arrangement. The prior art describes all of these features in many individual prior art references identified in the table of prior art above. In addition, many of the references go into detail on certain features found in the claims. None of the asserted claims in the '988 and '694 patents represents a new combination of old elements or limitations, or any new elements beyond what is taught in individual references identified in this pleading or identified in references taken individually or together.

In addition to the prior art described above as anticipating the asserted claims of the '988 and '694 patents, all asserted claims of the '988 and '694 patents are rendered obvious, and therefore invalid under 35 U.S.C. § 103, by at least the following references taken alone or in

combination with other references in the table of prior art, including the anticipatory references: the Wang ‘646 patent, the Lorincz reference, and the LaMarca reference. It would have been well within the grasp of a person of ordinary skill in the art at the time of the alleged invention to combine the teaching of these references and other references that teach storing and using Wi-Fi access point locations for locating wireless devices. The Wang ‘646 patent discloses a method of determining the location of a wireless device based on information provided by an access point in a wireless local area network. The position of the access point is determined and then used in the identification of the wireless device’s location. The Lorincnz reference likewise discloses an approach to computing location, also relying on a database of location information for access points in target areas, and a clustering algorithm to determine a centroid of the data. The LaMarca reference discloses a radio beacon based approach to location, which also utilizes a database of location information and recognizes war-driving as one method of gathering location information. Additional references describe gathering location information for Wi-Fi and other access points, including those described in the anticipation section and in the table above. The Peter Shipley reference, “Open WLANs the early results of war Driving” DEFCON Conference 802.11b describes the effectiveness of war driving and driving all the way around a building for improving the accuracy of Wi-Fi access point location measurement. These references, standing alone or in combination with each other, with the anticipatory references, or with other references within the table of prior art that teach all or the remaining elements of the asserted claims of the ‘988 and ‘694 patents, demonstrate that the asserted claims are obvious under 35 U.S.C. § 103.

Included with the illustrative, preliminary claim charts attached hereto as Exhibit A are charts detailing the correspondence between the asserted claim elements and, respectively, the

Wang ‘646 patent, the Lorincz reference, and the LaMarca reference. Each of these references renders the claims obvious alone or in combination with other prior art identified herein.

In addition, the Connelly reference, the Kang reference, the Saha reference, the Gwon ‘114 patent, the Balachandran ‘755 patent, EP 1,359,714, and CA 2,056,203, for example, are prior art as set forth above and render the ‘988 and ‘694 patents invalid under 35 U.S.C. § 103 alone or in combination with each other or other prior art identified herein. Any reference in the table of prior art references may be used to demonstrate the obviousness of the asserted claims of the ‘988 and ‘694 patents in combination with the knowledge of one of ordinary skill in the art, in combination with one of the anticipatory references or in connection with another reference describing the remaining elements of the asserted claims. All of the references identified in the table of prior art constitute references under at least 35 U.S.C. § 103. Further citations to prior art under § 103 are found in Exhibit A.

Skyhook has not identified any secondary evidence of non-obviousness supporting the validity of any of the asserted claims, such as industry acquiescence, unexpected results, the prior failure of others, skepticism, long-felt need, commercial success, or copying. To the contrary, each element of the asserted claims and systems incorporating those elements are described in the prior art identified herein. Moreover, many systems and techniques described in the prior art references listed in the table of prior art, including Wardriving, NetStumbler, Radar, Place Lab, Cricket and other similar systems demonstrate that collecting a database of Wi-Fi access points, identifying information, information about location of the access points, and other information, and using such information in systems for locating hand held wireless devices was well known and implemented before the filing of the patents in suit.

B. The ‘897 and ‘245 Patents

The ‘897 and ‘245 Patents, as discussed above, relate to the use of a WiFi enabled device to determine its location, essentially using signal strength received from WiFi access points and calculated location information for those access points. It was well known in the prior art at the time of the filing of the patents in suit to determine location using triangulation and other calculation techniques using signal strength and other information received from access points, such as WiFi access points, cellular towers, Loran towers, and other access points. Many of the references identified in the table of prior art detail such location determining techniques and several anticipatory references have been specifically identified and illustratively charted herein that show correlation between these references and the asserted claim elements. Any of these anticipatory references, standing alone or in combination with other references may also be used to demonstrate the obviousness of the invention. In addition, as discussed above in connection with the ‘988 and ‘694 patents, many systems and techniques described in the prior art references listed in the table of prior art, including Wardriving, NetStumbler, Radar, Place Lab, Cricket and other similar systems demonstrate that collecting a database of Wi-Fi access points, identifying information, information about location of the access points, and other information, and using such information in systems for locating hand held wireless devices was well known and implemented before the filing of the patents in suit.

To the extent that the plaintiff seeks to show non-obviousness of the asserted claims of the ‘897 and ‘245 Patents because of the techniques used to gather and calculate the locations of the WiFi access points in a database used by wireless devices to calculate the location of the wireless device, as discussed above in connection with the ‘988 and ‘694 Patents, such databases

are anticipated by the prior art and were well known and in use at the time of the alleged invention.

Additional illustrative charts showing the use of various references within the table of prior art references to show the presence of the elements and limitations of the Asserted Claims of the ‘897 and ‘245 patents are shown in the charts attached at Exhibit A. Any reference in the table of prior art references may be used to demonstrate the obviousness of the asserted claims of the ‘897 or ‘245 patents in combination with the knowledge of one of ordinary skill in the art, in combination with one of the anticipatory references or in connection with another reference describing the remaining elements of the asserted claims. All of the references identified in the table of prior art constitute references under at least 35 U.S.C. § 103. The references in the table teach elements of the asserted claims, including for example:

- Bluesoft, Inc.'s Aeroscout, Ekahau's Positioning Engine 2.1, Site Survey 1.0, and Client 3.0, PanGo's Proximity Platform and Mobile Applications Suite, and Newbury Networks' LocaleServer and LocalePoints products, for example, as well as other references in the table, provide location-based database servers with recorded position information for determining the location of a wi-fi enabled device by referencing the location of the device in relation to known access points, and also provide client applications for use on mobile devices, where the applications would record signal strength information of detected access points and then access the provided server to determine location based on calculated and filtered position information;

- WO 03/021851 to Gray et al., WO 04/002185A1 to Wood et al., for example, as well as other references in the table, describe, *inter alia*, a database of Wi-Fi access points, calculating the signal strength of the messages received by Wi-Fi access points to determine location of a wireless device, adding records for newly-discovered Wi-Fi access points to a database, using predefined rules to determine whether an observed WiFi access point should be included or excluded from a set of WiFi access points, based on the number of Wi-Fi access points within range, choosing a corresponding location determination algorithm from a plurality of location determination algorithms, updating of access point location, filtering data collected, and filtering data used in positioning;

- “Java and GIS”, Parts 1 and 2 by Spielman et al., for example, as well as other references in the table, describe, *inter alia*, using a handset to contact a remote location server for information about location device location, based on signal strength readings from the device;

- Chris Hurley et al., "War Driving Drive, Detect, Defend A Guide to Wireless Security", for example, as well as other references in the table, describes, *inter alia*, methods of driving an area to collect information about the locations of wi-fi access points, filtering the collected information, and adding information about previously known and newly discovered access points to a database;

- U.S. Patent No. 7,373,154 to Sharony et al. and U.S. Patent No. 7,426,197 to Schotten et al., for example, as well as other references in the table, describe, *inter alia*, a method and apparatus for determining a location of a wireless device within an environment. The device receives identifying information from a transponder, which may be an RFID. They disclose a location database that may be stored in the memory of the wireless device. They also disclose a coverage map associated with each radio receiver that records signal strength data defined out to a threshold signal strength level;

- U.S. Patent No. 7,116,988 to Dietrich et al. and U.S. Patent No. 7,433,696 to Dietrich et al., for example, as well as other references in the table, describe, *inter alia*, methods, apparatuses, and systems directed to a wireless node location mechanism that uses a signal strength weighting metric to improve the accuracy of estimating the location of a wireless node based on signals detected among a plurality of radio transceivers. They also teach maintaining a database of strength signals and wireless node identifiers, and a RF physical model of the coverage area associate with the environment;

- U.S. Patent No. 7,319,878 to Sheynblat et al. for example, as well as other references in the table, describes, *inter alia*, a method for determining the position of a base station in a wireless communication network. It also discloses a database of location information that can be updated, a calibration system, and the use of GPS, CDMA and Advanced Forward Link Trilateration.

- U.S. Patent No. 7,299,058 to Ogino, for example, as well as other references in the table, describes, *inter alia*, a method for determining the position of a radio device by calculating error degradation quantities on varying distances;

- U.S. Patent No. 6,664,925 to Moore et al., for example, as well as other references in the table, describes, *inter alia*, the use of strength signal measurements for locating a mobile computer connected to a wireless access point in a computer network. It also teaches compiling a database of access point locations.

Further citations to prior art under § 103 are found in Exhibit A.

As discussed above in connection with the '988 and '694 patents, Skyhook has not identified any secondary considerations of obviousness and there are none.

IV. Additional Bases for Invalidity

A. The patents-in-suit are invalid for failure to comply with the definiteness requirement of 35 U.S.C. § 112, ¶ 2.

The following patent claims are invalid under 35 U.S.C. § 112, ¶ 2 because they fail to particularly point out and distinctly claim the subject matter which applicant regards as the invention:

- Claims 1 - 3 of the '988 patent;
- Claims 1 and 2 of the '694 patent;
- Claims 1 - 4 of the '897 patent; and
- Claims 1, 2, 4 - 6, and 8 of the '245 patent.

Specifically, the following terms are indefinite within the meaning of § 112, ¶ 2, because one skilled in the art would not understand the bounds of the claims in which they appear when read in light of the specification:

1. "target area having a radius on the order of tens of miles" ('988 patent, claim 1; '694 patent, claim 1);
2. "substantially all Wi-Fi access points in the target area" ('988 patent, claim 1; '694 patent, claim 1);
3. "obtained from recording multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point so that the multiple readings have reference symmetry relative to other Wi-Fi access points in the target area and so that the calculation of the position of the Wi-Fi access point avoids arterial bias in the calculated position information" ('988, claim 1);

4. “logic” associated with the “computer implemented logic to add records to the database for newly-discovered Wi-Fi access points” (‘988 patent, claim 1);

5. “logic” associated with the “computer logic including logic to recalculate position information for Wi-Fi access points previously stored in the database to utilize position information for the newly-discovered readings of previously stored Wi-Fi access points” (‘988 patent, claim 1);

6. “logic” associated with the “computer-implemented clustering logic to identify position information based on error prone GPS information” (‘988 patent, claim 2);

7. “logic” associated with the “the clustering logic includes logic to determine a weighted centroid position for all position information reported for an access point” (‘988 patent, claim 3);

8. “logic” associated with the “the clustering logic includes … logic to identify position information that exceeds a statistically-based deviation threshold amount away from the centroid position and excludes such deviating position information from the database and from influencing the calculated positions of the Wi-Fi access points” (‘988 patent, claim 3);

9. “recording multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point so that the multiple readings avoid arterial bias in the calculated position information of the Wi-Fi access point” (‘694 patent, claim 1);

10. “the database records for substantially all Wi-Fi access points in the target area provide reference symmetry within the target area” (‘694 patent, claim 1);

11. “c) using the recorded location information for each of the observed WiFi access points in conjunction with predefined rules to determine whether an observed WiFi access point should be included or excluded from a set of WiFi access points” (‘897 patent, claim 1);

12. “the predefined rules include rules to determine a reference point and to compare the recorded location information for each of the observed WiFi access points to the reference point” (‘897 patent, claim 3);

13. “WiFi access points having a recorded location within a predefined threshold distance of the reference point are included in the set” (‘897 patent, claim 3);

14. “WiFi access points having a recorded location in excess of the predefined threshold distance of the reference point are excluded from the set” (‘897 patent, claim 3); and

15. “based on the number of Wi-Fi access points identified via received messages, choosing a corresponding location-determination algorithm from a plurality of location-determination algorithms, said chosen algorithm being suited for the number of identified Wi-Fi access points” (‘245 patent, claim 1).

Because each asserted independent claim is indefinite and therefore invalid, all claims depending from them are also indefinite and invalid.

Skyhook has not disclosed its constructions of any limitation of any patent-in-suit, and the court has not construed the asserted claims of the patents-in-suit. Google reserves the right to supplement or amend its preliminary indefiniteness contentions as appropriate.

B. The patents-in-suit are not enabled.

The following patent claims are not enabled under 35 U.S.C. § 112, ¶ 1 because the specification does not teach a person having ordinary skill in the art how to make and use the full scope of the claimed invention without undue experimentation.

- Claims 1 - 3 of the '988 patent;
- Claims 1 and 2 of the '694 patent;
- Claims 1 - 4 of the '897 patent; and
- Claims 1, 2, 4 - 6, and 8 of the '245 patent.

Specifically, the specification of the '988 patent does not enable the following claim elements:

1. "computer implemented logic to add records to the database for newly-discovered Wi-Fi access points" ('988 patent, claim 1);
2. "computer logic including logic to recalculate position information for Wi-Fi access points previously stored in the database to utilize position information for the newly-discovered readings of previously stored Wi-Fi access points" ('988 patent, claim 1);
3. "computer-implemented clustering logic to identify position information based on error prone GPS information" ('988 patent, claim 2);

4. “the clustering logic includes logic to determine a weighted centroid position for all position information reported for an access point” (‘988 patent, claim 3);
5. “the clustering logic includes … logic to identify position information that exceeds a statistically-based deviation threshold amount away from the centroid position and excludes such deviating position information from the database and from influencing the calculated positions of the Wi-Fi access points” (‘988 patent, claim 3);
6. “recording multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point so that the multiple readings avoid arterial bias in the calculated position information of the Wi-Fi access point” (‘694 patent, claim 1);
7. “the database records for substantially all Wi-Fi access points in the target area provide reference symmetry within the target area” (‘694 patent, claim 1);
8. “c) using the recorded location information for each of the observed WiFi access points in conjunction with predefined rules to determine whether an observed WiFi access point should be included or excluded from a set of WiFi access points” (‘897 patent, claim 1);
9. “the predefined rules include rules to determine a reference point and to compare the recorded location information for each of the observed WiFi access points to the reference point” (‘897 patent, claim 3);
10. “WiFi access points having a recorded location within a predefined threshold distance of the reference point are included in the set” (‘897 patent, claim 3);
11. “WiFi access points having a recorded location in excess of the predefined threshold distance of the reference point are excluded from the set” (‘897 patent, claim 3); and
12. “based on the number of Wi-Fi access points identified via received messages, choosing a corresponding location-determination algorithm from a plurality of

location-determination algorithms, said chosen algorithm being suited for the number of identified Wi-Fi access points" ('245 patent, claim 1).

13. The patents-in-suit lack the written description required by 35 U.S.C. § 112, ¶ 1.

The following patent claims do not comply with the written description requirement of 35 U.S.C. § 112, ¶ 1 because the disclosure of the pertinent application does not convey to those skilled in the art that the inventors invented what is claimed, *i.e.*, that they had possession of the claimed subject matter, as of the filing date:

- Claims 1 - 3 of the '988 patent;
- Claims 1 and 2 of the '694 patent;
- Claims 1 - 4 of the '897 patent; and
- Claims 1, 2, 4 - 6, and 8 of the '245 patent.

Specifically, the written description requirement is not met as to the following claim elements:

1. "computer implemented logic to add records to the database for newly-discovered Wi-Fi access points" ('988 patent, claim 1);
2. "computer logic including logic to recalculate position information for Wi-Fi access points previously stored in the database to utilize position information for the newly-discovered readings of previously stored Wi-Fi access points" ('988 patent, claim 1);
3. "computer-implemented clustering logic to identify position information based on error prone GPS information" ('988 patent, claim 2);

4. “the clustering logic includes logic to determine a weighted centroid position for all position information reported for an access point” (‘988 patent, claim 3);
5. “the clustering logic includes … logic to identify position information that exceeds a statistically-based deviation threshold amount away from the centroid position and excludes such deviating position information from the database and from influencing the calculated positions of the Wi-Fi access points” (‘988 patent, claim 3);
6. “recording multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point so that the multiple readings avoid arterial bias in the calculated position information of the Wi-Fi access point” (‘694 patent, claim 1);
7. “the database records for substantially all Wi-Fi access points in the target area provide reference symmetry within the target area” (‘694 patent, claim 1);
8. “c) using the recorded location information for each of the observed WiFi access points in conjunction with predefined rules to determine whether an observed WiFi access point should be included or excluded from a set of WiFi access points” (‘897 patent, claim 1);
9. “the predefined rules include rules to determine a reference point and to compare the recorded location information for each of the observed WiFi access points to the reference point” (‘897 patent, claim 3);
10. “WiFi access points having a recorded location within a predefined threshold distance of the reference point are included in the set” (‘897 patent, claim 3);
11. “WiFi access points having a recorded location in excess of the predefined threshold distance of the reference point are excluded from the set” (‘897 patent, claim 3);
12. “calculating the signal strength of the messages received by the Wi-Fi access points” (‘245 patent, claim 1); and

13. "choosing a corresponding location-determination algorithm from a plurality of location-determination algorithms, said chosen algorithm being suited for the number of identified Wi-Fi access points" ('245 patent, claim 1).

D. The patents-in-suit are invalid for failure to comply with the best mode requirement.

Google is informed and believes, and on that basis alleges, that the inventors of each patent-in-suit possessed a best mode for practicing the invention at the time each application was filed, and that the written description of each patent does not disclose the best mode for practicing the invention known to the inventors such that a person of ordinary skill in the art could practice it. Google is therefore informed and believes, and on that basis alleges, that the following patent claims are invalid for failure to comply with the best mode requirement of 35 U.S.C. § 112, ¶ 1:

- Claims 1 - 3 of the '988 patent;
- Claims 1 and 2 of the '694 patent;
- Claims 1 - 4 of the '897 patent; and
- Claims 1, 2, 4 - 6, and 8 of the '245 patent.

Specifically, Google is informed and believes, and on that basis alleges, that the best mode requirement is not met as to the following claim limitations:

1. "computer implemented logic to add records to the database for newly-discovered Wi-Fi access points" ('988 patent, claim 1);

2. "computer logic including logic to recalculate position information for Wi-Fi access points previously stored in the database to utilize position information for

the newly-discovered readings of previously stored Wi-Fi access points" ('988 patent, claim 1);

3. "computer-implemented clustering logic to identify position information based on error prone GPS information" ('988 patent, claim 2);
4. "the clustering logic includes logic to determine a weighted centroid position for all position information reported for an access point" ('988 patent, claim 3);
5. "the clustering logic includes … logic to identify position information that exceeds a statistically-based deviation threshold amount away from the centroid position and excludes such deviating position information from the database and from influencing the calculated positions of the Wi-Fi access points" ('988 patent, claim 3);
6. "recording multiple readings of the Wi-Fi access point at different locations around the Wi-Fi access point so that the multiple readings avoid arterial bias in the calculated position information of the Wi-Fi access point" ('694 patent, claim 1);
7. "c) using the recorded location information for each of the observed WiFi access points in conjunction with predefined rules to determine whether an observed WiFi access point should be included or excluded from a set of WiFi access points" ('897 patent, claim 1);
8. "the predefined rules include rules to determine a reference point and to compare the recorded location information for each of the observed WiFi access points to the reference point" ('897 patent, claim 3);
9. "WiFi access points having a recorded location within a predefined threshold distance of the reference point are included in the set" ('897 patent, claim 3);
10. "WiFi access points having a recorded location in excess of the predefined threshold distance of the reference point are excluded from the set" ('897 patent, claim 3);

11. "choosing a corresponding location-determination algorithm from a plurality of location-determination algorithms, said chosen algorithm being suited for the number of identified Wi-Fi access points" ('245 patent, claim 1).

* * *

Google reserves its right to supplement or amend its contentions based upon further investigation, discovery, the Court's claim construction rulings, or as otherwise warranted.

Respectfully Submitted,

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By its attorneys,

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/s/ Susan Baker Manning
Susan Baker Manning