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(71) Applicant *(for all designated States except US)*: **SIRF TECHNOLOGY, INC.** [US/US]; 936 East Browkaw Road, San Jose, CA 95112 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **PHATAK, Makarand** [IN/US]; 936 Azure Street, No. 136, Sunnyvale, CA 94087 (US). **WAN, Marlene** [US/US]; 718 Old San Francisco Road, No. 315, Sunnyvale, CA 94086 (US). **GARIN, Lionel** [US/US]; 3475 Greer Road, Palo Alto, CA 94303 (US). **VENKATASUBRAMANIAN, Vijayaraghavan** [IN/US]; 4325 Renaissance Drive, No. 114, San Jose, CA 95134 (US). **KOHLI, Sanjai** [US/US]; 936 East Browkaw Road, San Jose, CA 95112 (US).

(74) Agents: **DANIELSON, Mark. J.** et al.; Pillsbury Winthrop Shaw Pittman Llp, P.o. Box 10500, Mclean, VA 22102 (US).

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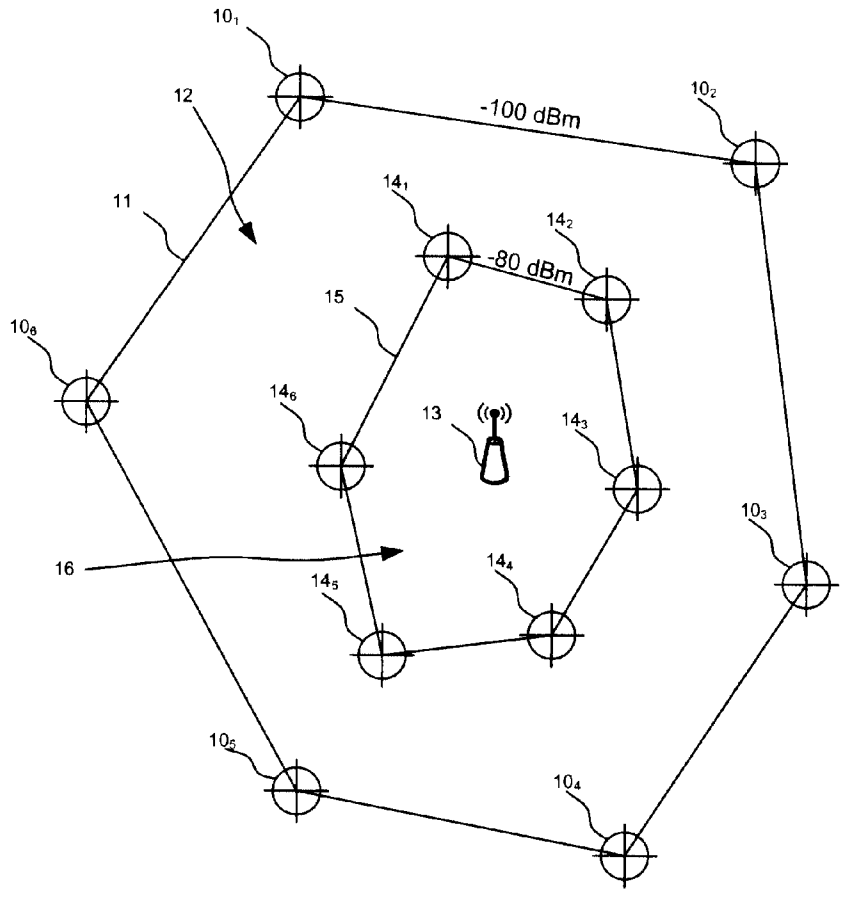

(57) Abstract: Systems and methods are described for determining location of wireless devices using signal strength of signals detected by the wireless devices. The strength of signals received from identifiable sources is typically compared to reference signal strength measurements collected or estimated at known locations. Information identifying the source of the signals is typically obtained from data provided in the signals. Mappers associate combinations of reference signal strengths with geometrically shaped geographical regions such that signal strength measurements can be used as indices to locate a region in which a wireless device can be found. Systems and methods are described for receiving signal strength information from known locations where the information can be used to update and improve mapping system databases.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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USPC - 455/456.2
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 455/456.2

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC: 342/451; 455/456.2, 524; 701/207

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PubWEST(USPT,PGPB,EPAB,JPAB); Google Scholar
Search Terms: locating, determining, position, wireless, mobile, cellular, measure, signal, strength, reference, GPS, RF, radio frequency, mapping, geometric, elliptical, area, WIFI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2006/0125692 A1 (Wang et al.) 15 June 2006 (15.06.2006), para [0004], [0007], [0020], [0027], [0036], [0038], [0039], [0055], [0056], [0063], [0076], [0079], [0113]	15-17, 21, 22 --- 1-14, 18-20, 23-30
Y	US 6,362,783 B1 (Sugiura et al.) 26 March 2002 (26.03.2002), col 2, ln 7-10, ln 14-16, col 4, ln 4-7, ln 13-15, col 5, ln 38-41, col 6, ln 31-33, col 10, ln 45-48, col 12, ln 35-38	1-14, 18, 20, 23-30
Y	US 2006/0009235 A1 (Sheynblat et al.) 12 January 2006 (12.01.2006), para [0018]	19, 27
A	US 7,039,421 B2 (Couronne et al.) 02 May 2006 (02.05.2006), entire document	1-30

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774