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Patent

Address to:
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Alexandria, VA 22313-1450

Patent Number	8,594,698
Issue Date	11/26/2013
Application Number	13/448,309
Filing Date	04/16/2012
First Named Inventor	Shkedi, Roy
Attorney Docket Number	BP-CON2

Please change the Correspondence Address for the above-identified patent to:

☐ The address associated with Customer Number: [ ]

OR

☑ **Firm *or* Individual Name** Roy Shkedi

Address Broadphone, LLC
69-10 108th Street
Apt. 10K

City Forest Hills **State** NY **ZIP** 11375

Country US

Telephone (646) 770-1290 **Email** rshkedi@broadphone.com

This form cannot be used to change the data associated with a Customer Number. To change the data associated with an existing Customer Number use "Request for Customer Number Data Change" (PTO/SB/124).

This form will not affect any "fee address" provided for the above-identified patent. To change a "fee address" use the "Fee Address Indication Form" (PTO/SB/47).

I am the:

☐ Patentee.

☐ If the Patentee was not the applicant for patent (37 CFR 1.42), then a Statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is enclosed or was filed on _____. See 37 CFR 3.71.

☑ Attorney or agent of record. Registration Number 38918.

☐ Patent practitioner acting in a representative capacity whose correspondence address is the correspondence address of record. Notice has been given to the patentee or owner. Registration Number 38918.

Signature /Louis J. Hoffman/

Typed or Printed Name Louis J. Hoffman

Date 10/22/2020 Telephone (480) 948-3295

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop Post Issue, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	40923340
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	22-OCT-2020
Filing Date:	16-APR-2012
Time Stamp:	18:33:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Change of Address	20-10-22-Broadphone-USP8594698-COA.pdf	198635 7b146192bbd60cc8fbc12fea4432273f071b5bdc	no	1

Warnings:

Information:	
Total Files Size (in bytes):	198635

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/448,309	11/26/2013	8594698	24-CON2	1020

26362 7590 11/06/2013
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

Roy Shkedi, New York, NY;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

IR103 (Rev. 10/09)

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

26362 7590 07/26/2013
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that is Fee(s) Transmittal is being filed with the USPTO via EFS, on the date indicated below.

Donald Hertz	(Depositor's name)
/Donald Hertz/	(Signature)
10/25/2013	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/448,309	04/16/2012	Roy Shkedi	24-CON2	1020

TITLE OF INVENTION: Signal Comparison-Based Location Determining Method

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	10/28/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
PHUONG, DAI	2644	455-456100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 Louis J. Hoffman
2 William E. Markov
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE: BROADPHONE, LLC

(B) RESIDENCE: (CITY and STATE OR COUNTRY): NEW YORK, NEW YORK

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☑ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

☑ Issue Fee
☑ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

☐ A check is enclosed.
☑ Payment by credit card.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Louis J. Hoffman/ Date 10/25/2013

Typed or printed name Louis J. Hoffman Registration No. 38918

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Electronic Patent Application Fee Transmittal

Application Number:	13448309
Filing Date:	16-Apr-2012
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Filer:	Louis J. Hoffman/Donald Hertz
Attorney Docket Number:	24-CON2

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	2501	1	890	890
Publ. Fee- Early, Voluntary, or Normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**1190**

Electronic Acknowledgement Receipt

EFS ID:	17232077
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	25-OCT-2013
Filing Date:	16-APR-2012
Time Stamp:	15:53:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1190
RAM confirmation Number	2651
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Issue Fee Payment (PTO-85B)	13-10-25-Broadphone-CON2-Issue_Fee_Trans.pdf	135497 0566e3aa5298aef6fb5ba70d84c8432bacdedfcd	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	32008 070778e5f452b85df3a79b129dce44592f5352f0	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	167505	

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<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Examiner-Initiated Interview Summary	Application No.	Applicant(s)	
	13/448,309	SHKEDI, ROY	
	Examiner	Art Unit	
	DAI A. PHUONG	2644	

All participants (applicant, applicant's representative, PTO personnel):

(1) *DAI A. PHUONG*. (3)_____.

(2) *Louis J. Hoffman*. (4)_____.

Date of Interview: *19 July 2013*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☐ No.
If Yes, brief description: _____.

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☐Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *58*.

Identification of prior art discussed: _____.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

The Applicant agreed to amend claim 58 similar to claim 1 in order to put the application in allowance condition..

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

☐ Attachment

/DAI A PHUONG/ Primary Examiner, Art Unit 2644	

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NOTICE OF ALLOWANCE AND FEE(S) DUE

26362 7590 07/26/2013
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

EXAMINER
PHUONG, DAI

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 07/26/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/448,309	04/16/2012	Roy Shkedi	24-CON2	1020

TITLE OF INVENTION: Signal Comparison-Based Location Determining Method

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	10/28/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

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Commissioner for Patents
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26362 7590 07/26/2013
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Scottsdale, AZ 85260

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/448,309	04/16/2012	Roy Shkedi	24-CON2	1020

TITLE OF INVENTION: Signal Comparison-Based Location Determining Method

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$890	$300	$0	$1190	10/28/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
PHUONG, DAI	2644	455-456100

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1_____
2_____
3_____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:

❑ Issue Fee
❑ Publication Fee (No small entity discount permitted)
❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**

❑ A check is enclosed.
❑ Payment by credit card. Form PTO-2038 is attached.
❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29	NOTE: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
❑ Applicant asserting small entity status. See 37 CFR 1.27	NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
❑ Applicant changing to regular undiscounted fee status.	NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

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UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/448,309	04/16/2012	Roy Shkedi	24-CON2	1020

26362 7590 07/26/2013
LOUIS J. HOFFMAN, P.C.
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Scottsdale, AZ 85260

EXAMINER
PHUONG, DAI

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 07/26/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 13/448,309	Applicant(s) SHKEDI, ROY	
	Examiner DAI A. PHUONG	Art Unit 2644	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *05/06/13*.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on_____.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *1-7,15,16,22,23,28 and 47-66*. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov .
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   Certified copies:
   a) ☐ All b) ☐ Some *c) ☐ None of the:
   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
4. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____ .
5. ☒ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/DAI A PHUONG/
Primary Examiner, Art Unit 2644

DETAILED ACTION

Examiner amendment

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Louis J. Hoffman.

The application has been amended as follows:

In The Claim:

Claim 58 (Currently amended) A method of determining whether a portable RF communications device is present at a device-specific target location, the method comprising:

with the portable RF communications device automatically:

(a) receiving a first plurality of communications signals, each from one of a first plurality of antenna stations within range of the portable RF communications device, and each containing an identifier, wherein the antenna stations are fixed-location service-area antenna stations and are substantially continuously operating; and

(b) determining whether the portable RF communications device is within proximity of the device-specific target location by electronically comparing at least one number based on signal characteristics of the first plurality of communications signals with at least one number based on corresponding signal characteristics of a second plurality of communication signals of a second plurality of antenna stations, each of which second plurality of communication signals contains an identifier matching one of the identifiers of the first plurality of communication signals;

(c) wherein the second plurality of antenna stations ~~that~~ have previously been identified as being within range of the same location as the device-specific target

location, ~~which~~ and the signal characteristics of the second plurality of communication signals have previously been determined for the same location as the device-specific target location, and

(d) wherein the signal characteristics that are compared include at least one signal characteristic that, for each of the second plurality of antenna stations, differs at different locations within that antenna station's range.

(End of Amendment)

Allowable Subject Matter

2. Claims 1-7, 15-1622-23, 28 and 47-66 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding claims 1, 57 and 58, none of the prior art of record teaches or suggest (a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a first plurality of fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a varying signal characteristic other than ID, which signal characteristic is associated with a received communications signal from each of the first plurality of antenna stations; and (b) the first portable RF communications device determining if a first monitored location, monitored in accordance with part (a), is within proximity of a location chosen by a user of the first portable RF communications device, as a result of electronically comparing (i) the at least one ID at the first monitored location with at least one ID at the location chosen by the user and (ii) at least one number, identification

number, based on the varying signal characteristic of the communications signals from each of the first plurality of antenna stations at the first monitored location with at least one based on corresponding varying signal characteristics of the communications signals from each of the first plurality of antenna stations at the location chosen by the user.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submission should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Karr et al. (U.S. 7764231) Wireless location using multiple mobile station location techniques
- Ben Yehuda et al. (U.S. 20050143068) Device, system and method of communication system monitoring for wireless user equipment
- Black (U.S. 20090305705) METHOD AND APPARATUS FOR PERFORMING HANDOFF IN COMMUNICATION SYSTEMS
- Johnson et al. (U.S. 20070184852) Method and system for location of objects within a specified geographic area

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DAI A PHUONG/
Primary Examiner, Art Unit 2644
Date: 07/23/13

Notice of References Cited	Application/Control No. 13/448,309	Applicant(s)/Patent Under Reexamination SHKEDI, ROY	
	Examiner DAI A. PHUONG	Art Unit 2644	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,764,231	07-2010	Karr et al.	342/457
*	B	US-2005/0143068	06-2005	Ben-Yehuda et al.	455/434
*	C	US-2009/0305705	12-2009	Black, Peter J.	455/438
*	D	US-2007/0184852	08-2007	Johnson et al.	455/456.1
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

CPC- SEARCHED

Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner
455	404.2, 432.1, 435.1-453, 456.1-456.3	05/18/12	ad
370	328-333	5/18/12	ad
	East search updated	9/20/12	ad
	East search updated	3/21/13	ad
	East search updated	07/23/13	ad

SEARCH NOTES

Search Notes	Date	Examiner
Inventor Search	5/18/12	ad
Inventor search updated	9/20/12	ad
Inventor search updated	3/21/13	ad
Inventor search updated	07/23/13	ad

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	Please see printout	7/23/13	ad

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/18/2012	09/20/2012	03/21/2013	07/23/2013					
1	1	✓	✓	✓	=					
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6	6	✓	✓	✓	=					
7	7	✓	✓	✓	=					
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-	12	✓	-	-	-					
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☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
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-	44	-	-	-	-					
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-	46		-	-	-					
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14	48		✓	✓	=					
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26	60		✓	✓	=					
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28	62		✓	✓	=					
29	63		✓	✓	=					
30	64		✓	✓	=					
31	65		✓	✓	=					
32	66		✓	✓	=					

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	"7764231".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/23 09:49
L2	6	"2011004570"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/23 09:50
L3	2	"20050143068"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/23 09:50
L4	3	"20090305705"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/23 09:51
L5	2	"20070184852"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/23 09:52
L6	1	13/448309	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/23 10:07
L7	168	(signal same characteristic same (id identif$6) same monitor$4 same (locat$4 position$4)).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/23 10:12
L8	6	(signal same characteristic same (id identif$6) same monitor$4 same (locat$4 position$4) same vary$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/23 10:13
S1	33383547	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 07:21
S2	2	"20090031006"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 07:23

S3	1	12/122619	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:03
S4	2	"7057556".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:48
S5	2	"7050786".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:49
S6	2	"6972717".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:54
S7	0	"200900031006"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:55
S8	2	"20090031006"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:55
S9	3	"20070232322"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:55
S10	2	"20080039114"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:04
S11	3406	((cell (base near3 station) bs) near4 (id identity identifi$8)) with (table referenc$4) with (locat$4 position$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:20
S12	197	((cell (base near3 station) bs) near4 (id identity identifi$8)) with (table referenc$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:21
S13	0	S3 and S12	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:23
S14	33383547	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:23

S15	163	S12 and S14	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:24
S16	6	"7706975".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:29
S17	1	12/720362	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:41
S18	2	"20080039114"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:44
S19	33383547	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:16
S20	0	(via near5 (second near3 (mobile $phone pda portable))) with (table referenc$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:17
S21	55	((second near3 (mobile $phone pda portable))) with (table referenc$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:18
S22	36	((second near3 (mobile $phone pda portable))) with (measur$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:18
S23	25	S19 and S22	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:18
S24	62	((second near3 (mobile $phone pda portable))) near12 (measur$4) with ((determin$4 comput$4) near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:22
S25	53	S19 and S24	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:23
S26	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:03

S27	39	(SHKEDI near2 ROY).in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:29
S28	8	(SHKEDI near2 ROY).in. and (id).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:30
S29	3	(SHKEDI near2 ROY).in. and (rf same locat$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:31
S30	33453743	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:13
S31	3	(SHKEDI near2 ROY).in. and ((locat$4 position$4) same id).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:14
S32	150	((cell (base near3 station$4) (access near3 point$4)) near4 (id identity identif$6)) same (interest$4 near4 (locat$4 position$4 area point$4)) same (match$4 compar$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:16
S33	121	S30 and S32	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:17
S34	6752	((select$4 chos$4) near4 (locat$4 position$4 area)) same (within range proximity) same ((current$4 monitor$4) near4 (locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:12
S35	33511100	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:12
S36	437	((select$4 chos$4) near4 (locat$4 position$4 area)) same (within range proximity) same ((current$4 monitor$4) near4 (locat$4 position$4)) same ((base near3 station$4) cell)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:13
S37	437	S34 and S36	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:13
S38	15	((select$4 chos$4) near4 (locat$4 position$4 area)) same (within range proximity) same ((current$4 monitor$4) near4 (locat$4	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2012/03/01 11:14

		position$4)) same ((base near3 station$4) cell) same ((compar$4 less more than greater) near12 (threshold level predetermin$4))	IBM_TDB			
S39	13	S35 and S38	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:15
S40	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:26
S41	596	((current$4 monitor$4 select$4 chos$4) near4 (locat$4 position$4 area)) same (within range) same ((base near3 station$4) cell) same ((compar$4 less more than greater) near12 (threshold level predetermin$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:36
S42	177428	"455"/$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:37
S43	586	S34 and S42	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:37
S44	11	S41 and S43	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:38
S45	2	(SHKEDI near2 ROY).in. and ((compar$4 less more than greater) near12 (threshold level predetermin$4)).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:53
S46	14	(SHKEDI near2 ROY).in. and (location$4 position$4 area proximit$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:54
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S48	2	"20080039114"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:27
S49	3	"20100156706"	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2012/09/19 11:28

			IBM_TDB			
S50	0	(notif$8 alert$4) with (previous near4 (locat$4 position$4)) with ((compar$4 match$4) near6 (id identif$4)) with (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:31
S51	8	(notif$8 alert$4) with ((locat$4 position$4)) with ((compar$4 match$4) near6 (id identif$4)) with (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:31
S52	2	S47 and S51	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:31
S53	9	((notif$8 alert$4) near5 user) same ((locat$4 position$4)) same ((compar$4 match$4) near6 (id identif$4)) same (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:35
S54	9	((notif$8 alert$4) near5 user) same ((locat$4 position$4)) same ((compar$4 match$4) near12 (id identif$4)) same (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:35
S55	8	S47 and S54	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:35
S56	10	((notif$8 alert$4) near5 user) same (previous$4 near5 (locat$4 position$4)) same (((base near3 station$4) cell) near5 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:48
S57	8	S47 and S56	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:49
S58	47	((notif$8 alert$4)) same ((locat$4 position$4)) same ((compar$4 match$4) near6 (id identif$4)) same (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:50
S59	32	S47 and S58	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:50
S60	42	((notif$8 alert$4)) same (previous$4 near5 (locat$4 position$4)) same (((base near3 station) cell) near6 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:51
S61	33	S47 and S60	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2012/09/19 11:51

			IBM_TDB			
S62	308	((notif$8 alert$4) near12 (locat$4 position$4)) with (((base near3 station) cell) near6 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:00
S63	182	S47 and S62	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:00
S64	62	(previous$4 near5 (locat$4 position$4)) with ((compar$4 match$4 determin$4) near13 ((base near3 station) cell) near6 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:07
S65	26	S47 and S64	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:08
S66	124	((select$4 choos$4 chos$4) near5 (locat$4 position$4)) with ((compar$4 match$4 determin$4) near13 ((base near3 station) cell) near6 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:27
S67	74	S47 and S66	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:28
S68	2	"8170583".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:37
S69	3	"20040203863"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:48
S70	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 13:19
S71	2	"8170583".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 14:05
S72	33612727	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:23
S73	3	"20040203863"	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2013/03/21 16:24

			IBM_TDB			
S74	2	"8170583".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:31
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S76	0	((previous (re adj entry)) near4 (area locat$4 position$4)) with compar$4 near12 (signal$4) with ((cell (base near3 station$4))near4 (id identity identif$9 number))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:38
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S78	157	S72 and S77	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:39
S79	0	((previous (re adj entry)) near4 (area locat$4 position$4)) with ((compar$4 near12 (cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 (strength$4 signal$4 characteristic$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:56
S80	0	((previous (re adj entry)) near4 (area locat$4 position$4)) with (compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 (strength$4 signal$4 characteristic$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:57
S81	181	((area locat$4 position$4)) with (compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 (strength$4 signal$4 characteristic$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:58
S82	127	S72 and S81	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:58
S83	1	((previous histor$4) near5 (area locat$4 position$4)) with (compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 (strength$4 signal$4 characteristic$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:00
S84	2502	previous$4 near9 camp$4	US-PGPUB; USPAT; EPO; JPO;	OR	ON	2013/03/21 17:02

			DERWENT; IBM_TDB			
S85	198355	"455"/$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:02
S86	74	S72 and S84 and S85	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:02
S87	0	((previous histor$4) near5 (area locat$4 position$4)) with (compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 frequency)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:20
S88	263	(compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 frequency)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:21
S89	195	S72 and S88	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:21
S90	3	"20100156706"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 18:18
S91	7	"7706976".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:11
S92	6	"7706975".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:12
S93	18	(SHKEDI near2 ROY).in. and (locat$4 position$4 same compar$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:20
S94	5	(SHKEDI near2 ROY).in. and ((locat$4 position$4) same compar$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:20
S95	5	(SHKEDI near2 ROY).in. and ((locat$4 position$4) same compar$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:20
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S99	6	"7706975".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/19 10:39
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S101	1403	(previous$4 near5 (cell area (base near3 station$4))) with ((determin$4 compar$4) near12 (signal characteristic strength))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/19 10:56
S103	205049	"455"/$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/19 10:57
S104	135	S100 and S101 and S103	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/07/19 10:57

7/23/2013 10:14:42 AM
C:\Users\dphuong\Documents\EAST\Workspaces\13448309.wsp

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2644

CPC						
Symbol					**Type**	**Version**

CPC Combination Sets							
Symbol				**Type**	**Set**	**Ranking**	**Version**

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	32	
/DAI A PHUONG/ Primary Examiner.Art Unit 2644	7/23/13	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	2

U.S. Patent and Trademark Office

Part of Paper No. 20130723

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2644

US ORIGINAL CLASSIFICATION		INTERNATIONAL CLASSIFICATION	
CLASS	SUBCLASS	CLAIMED	NON-CLAIMED
455	456.1	H 0 4 W 24 / 00 (2009.01.01)	

CROSS REFERENCE(S)

CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
455	404.2	432.1	436	440	457

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 32	
/DAI A PHUONG/ Primary Examiner.Art Unit 2644 (Primary Examiner)	7/23/13 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 2

U.S. Patent and Trademark Office

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Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2644

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	-	17	-	33	15	49	31	65						
2	2	-	18	-	34	16	50	32	66						
3	3	-	19	-	35	14	51								
4	4	-	20	-	36	18	52								
5	5	-	21	-	37	19	53								
6	6	11	22	-	38	20	54								
7	7	12	23	-	39	21	55								
-	8	-	24	-	40	22	56								
-	9	-	25	-	41	23	57								
-	10	-	26	-	42	24	58								
-	11	-	27	-	43	25	59								
-	12	13	28	-	44	26	60								
-	13	-	29	-	45	27	61								
-	14	-	30	-	46	28	62								
9	15	-	31	8	47	29	63								
10	16	-	32	14	48	30	64								

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 32	
/DAI A PHUONG/ Primary Examiner.Art Unit 2644 (Primary Examiner)	7/23/13 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 2

U.S. Patent and Trademark Office Part of Paper No. 20130723

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Shkedi, Roy	Art Unit	:	2617
Serial No.	:	13/448,309	Examiner	:	Phuong, Dai
Filing Date	:	04/16/2012	Conf. No.	:	1020
Title	:	Signal Comparison-Based Location Determining Method			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – July 26, 2013

INTERVIEW REPORT

Dear Sir:

Assignee thanks the examiner for the telephonic interview held July 22, 2013, which followed a voicemail left by the examiner on July 19, 2013. In the voicemail, the examiner stated that the Office was prepared to allow claims 1 and 57, but he also pointed out that claim 58 was broader than the confirmed allowed subject matter by not including reference to the mobile device using ID (along with signal characteristic) to determine its location. During the brief telephone interview on July 22nd, the undersigned acknowledged the voicemail and promised to send a proposed solution.

In response to the examiner's request, assignee suggested a possible change to claim 58 in which ID is added to the claim, and advised that assignee would accept this amendment if entered through examiner's amendment.

Assignee noted further that the absence of ID from claim 58 should not matter because it was not used to distinguish the references, but assignee agreed to address that issue through a further continuation if needed.

Please feel free to telephone the undersigned if it would in any way advance prosecution of this application.

Respectfully submitted,

BROADPHONE, LLC

by its attorney

Dated: July 26, 2013

/Louis J. Hoffman/

Louis J. Hoffman
Reg. No. 38,918

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(480) 948-3295

Electronic Acknowledgement Receipt

EFS ID:	16429156
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	26-JUL-2013
Filing Date:	16-APR-2012
Time Stamp:	15:23:25
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant summary of interview with examiner	13-07-26-Broadphone-CON2-LJH_Exmr_Iview_Rpt.pdf	69281 a19e85e598297783d5d13b376f281d3ce9d2e226	no	2

Warnings:

Information:

Total Files Size (in bytes):	69281

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Shkedi, Roy	Art Unit	:	2617
Serial No.	:	13/448,309	Examiner	:	Phuong, Dai
Filing Date	:	04/16/2012	Conf. No.	:	1020
Title	:	Signal Comparison-Based Location Determining Method			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – May 6, 2013

RESPONSE TO OFFICE ACTION

Dear Sir:

In response to the Office Action dated March 28, 2013, applicant submits the following:

Amendments to the Claims beginning on page 2.

Remarks beginning on page 9.

Amendments

IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently amended) A location-determining method, operable by a first portable RF communications device, the method comprising:

(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a first plurality of fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a varying signal characteristic other than ID, which signal characteristic is associated with a received communications signal from each of the first plurality of antenna stations; and

(b) the first portable RF communications device determining if a first monitored location, monitored in accordance with part (a), is within proximity of a location chosen by a user of the first portable RF communications device, as a result of electronically comparing (i) the at least one ID at the first monitored location with at least one ID at the location chosen by the user and (ii) at least one number~~, other than identification number,~~ based on the varying signal characteristic of the communications signals from each of the first plurality of antenna stations at the first monitored location with at least one number~~, other than identification number,~~ based on corresponding varying signal characteristics of the communications signals from each of the first plurality of antenna stations at the location chosen by the user.

Claim 2 (Currently amended) The method of Claim 1 wherein the characteristic is the communications signal's strength, which varies over a range of an antenna station.

Claim 3 (Previously presented) The method of Claim 2 wherein the chosen location signal strengths were measured by the first portable RF communication device.

Claim 4 (Previously presented) The method of Claim 2 wherein the chosen location signal strengths were measured by a second portable RF communication device.

Claim 5 (Previously presented) The method of Claim 2 wherein the chosen location signal strengths and the at least one ID originated from a database of geographic locations and corresponding signal strengths and IDs.

Claim 6 (Previously presented) The method of Claim 5 wherein the database is stored remotely from the first portable RF communications device.

Claim 7 (Original) The method of Claim 5 wherein the database is built by a service provider.

Claims 8-14 (Cancelled)

Claim 15 (Original) The method of Claim 1 wherein the at least one ID is a cell ID.

Claim 16 (Previously presented) The method of Claim 1 wherein the first portable RF communications device is a mobile phone.

Claims 17-21 (Cancelled)

Claim 22 (Previously presented) The method of Claim 1 wherein the signal characteristic is the signal's arrival time.

Claim 23 (Previously presented) The method of Claim 1 wherein the signal characteristic is the signal's phase.

Claims 24-27 (Cancelled)

Claim 28 (Previously presented) The method of Claim 1 wherein part (a) is performed iteratively, with a predetermined time delay between successive iterations.

Claims 29-46 (Cancelled)

Claim 47 (Previously presented) The method of Claim 2 wherein the monitored location of the first portable RF communications device is determined to be within proximity of the chosen location if the at least one number based on the measured signal strengths at the monitored location and the at least one number based the measured signal strengths at the chosen location are related within a predetermined threshold.

Claim 48 (Previously presented) The method of Claim 1 wherein the at least one ID is a WiFi network ID.

Claim 49 (Previously presented) The method of Claim 1 further comprising passing an indicia to a computer program application running on the first portable RF communications device indicating that the device is one of: (i) at the chosen location, or (ii) no longer at the chosen location.

Claim 50 (Previously presented) The method of Claim 1 further comprising launching a computer program application on the first portable RF communications device when the device is at the chosen location.

Claim 51 (Previously presented) The method of Claim 1 wherein part (b) is performed iteratively, with a predetermined time delay between successive iterations.

Claim 52 (Previously presented) The method of Claim 1 wherein part (b) is performed depending on the rate of change of the user's location.

Claim 53 (Previously presented) The method of Claim 1 wherein part (b) is performed upon request from a computer program application running on the first portable RF communications device.

Claim 54 (Previously presented) The method of Claim 1 wherein part (b) is performed upon the first portable RF communications device switching the base station with which it is registered.

Claim 55 (Currently amended) The method of Claim 1 wherein the at least one number based on the signal characteristic of the communications signals from each of the first plurality of antenna stations is more than one number, each of which number is based on the signal characteristic of the communications signal from only one of the first plurality of the antenna stations.

Claim 56 (Currently amended) The method of Claim 1 wherein the at least one number based on the signal characteristic of the communications signals from each of the first plurality of antenna stations is one number based on the signal characteristic of the communications signals from more than one of the first plurality of the antenna stations.

Claim 57 (Currently amended) A portable RF communications device comprising an antenna, a user interface, and a storage device, wherein the storage device contains computer program code that, when executed by the portable device, controls the portable device to cause the portable device to perform a location-determining method, the method comprising:

(a) monitoring the location of the portable device by (i) receiving with the antenna communications signals from a first plurality of fixed-location service-area antenna stations capable of RF communication with the portable device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a varying signal characteristic other than ID, which signal characteristic is associated with a received communications signal from each of the first plurality of antenna stations; and

(b) determining if a first monitored location, monitored in accordance with part (a), is within proximity of a location entered by a user of the portable device on the user interface, as a result of electronically comparing (i) the at least one ID at the first monitored location with at least one ID at the location chosen by the user; and (ii) at least one number~~, other than identification number,~~ based on the varying signal characteristics of the communications signals from each of the first plurality of antenna stations at the first monitored location with at least one number~~, other than identification number,~~ based on corresponding varying signal characteristics of the communications signals from each of the first plurality of antenna stations at the location chosen by the user.

Claim 58 (Currently amended) A method of determining whether a portable RF communications device is present at a device-specific target location, the method comprising:

with the portable RF communications device automatically:

(a) receiving a first plurality of communications signals, each from one of a first plurality of antenna stations within range of the portable RF communications device, wherein the antenna stations are fixed-location service-area antenna stations and are substantially continuously operating; and

(b) determining whether the portable RF communications device is within proximity of the device-specific target location by electronically comparing at least one number~~, other than identification number,~~ based on signal characteristics of the first plurality of communications signals with at least one number~~, other than identification number,~~ based on corresponding signal characteristics of a second plurality of communication signals of a second plurality of antenna stations that have previously been identified as being within range of the same location as the device-specific target location, which signal characteristics have previously been determined for the same location as the

device-specific target location, and wherein the signal characteristics that are compared include at least one signal characteristic that, for each of the second plurality of antenna stations, differs at different locations within that antenna station's range.

Claim 59 (Previously presented) The method of Claim 58 wherein part (a) is performed iteratively, with a predetermined time delay between successive iterations.

Claim 60 (Currently amended) The method of Claim 58 wherein the portable RF communications device is determined to be within proximity of the target location if the at least one number based on the signal characteristics of the first plurality of communications signals and the at least one number based on corresponding signal characteristics of a second plurality of communication signals of a second plurality of antenna stations are related within a predetermined threshold.

Claim 61 (Currently amended) The method of Claim 58 further comprising passing an indicia to a computer program application running on the portable RF communications device indicating that the device is one of: (i) at the ~~chosen~~ device-specific target location, or (ii) no longer at the ~~chosen~~ device-specific target location.

Claim 62 (Currently amended) The method of Claim 58 further comprising launching a computer program application on the portable RF communications device when the device is at the ~~chosen~~ device-specific target location.

Claim 63 (Previously presented) The method of Claim 58 wherein part (b) is performed iteratively, with a predetermined time delay between successive iterations.

Claim 64 (Previously presented) The method of Claim 58 wherein part (b) is performed depending on the rate of change of the user's location.

Claim 65 (Previously presented) The method of Claim 58 wherein part (b) is performed upon request from a computer program application running on the portable RF communications device.

Claim 66 (Previously presented) The method of Claim 58 wherein part (b) is performed upon the portable RF communications device switching the base station with which it is registered.

Remarks (Including Interview Report)

The Office Action dated March 28, 2013, rejected all independent claims, and all dependent claims except dependent claim 4, under 35 U.S.C. §103 over U.S. Pat. Pub. 2004/0203863 (Huomo) in view of U.S. Patent 7,706,975 (Farmer), and rejected claim 4 under 35 U.S.C. §103 over Huomo in view of Farmer in further view of U.S. Pat. Pub. 2005/0159174 (Bar-On).

I. BACKGROUND AND HISTORY OF AMENDMENTS.

Previously, assignee argued against an earlier anticipation rejection based on Huomo because Huomo lacked disclosure of a signal characteristic *other than ID* to compare against signal characteristics at a target point.

In the Office Action, the Office agreed with assignee's main point, withdrawing the anticipation rejection and determining that the primary reference, Huomo, disclosed comparison of received signals at a mobile device ONLY to cellular base station *identifiers.* *See* Office Action, page 5 ("Huomo does not disclose other than identification number based on signal characteristics"). However, the Office Action purported to find the missing element in a secondary reference, Farmer, which discloses comparison using identifiers and a second "key," namely the base station's carrier frequency.

To overcome that rejection, assignee proposed (at a recent telephone interview) amendments matching those submitted in this paper. In general, the amendments clarify that the "signal characteristics" being referenced are of a "varying" or "differing" nature. (See more specific language discussed below and in the claim amendments above.) The interview was held on April 23, 2013, by telephone. Assignee thanks the Examiner for his time and careful attention.

During the interview, the Examiner agreed that a carrier frequency is a *fixed* signal characteristic, and thus, because he agreed that Farmer did not disclose use of any "varying" or "differing" signal characteristic, Farmer could not be used in combination with Huomo to obviate the amended claims. However, the Examiner said

that he needed to review Huomo again and specifically consider ¶[0045] of Huomo. The Examiner then concluded the interview with the following statement: "Huomo (primary reference) teaches in paragraph 45 that the mobile may store a predetermined number, or all, of the cell-IDs or other identifiers associated with the strongest field strengths. *In other words, the mobile stores base stations identifiers and signal strengths.*" [Emphasis added]

With respect, assignee strongly disagrees with the Examiner's "in other words…" statement – the part underlined above. The Office got it right the first time, when concluding that Huomo disclosed comparison ONLY to a stored *identifier*. The Examiner's contemplated revision to the interpretation of Huomo based on ¶[0045] plainly misreads what Huomo wrote in that sentence, which assignee will explain next.

II. WHAT HUOMO DISCLOSES, ESPECIALLY IN PARAGRAPH [0045].

Huomo discloses a technique of marking a particular location as a "point of interest" (POI) and triggering an action when a mobile phone enters the POI. Throughout Huomo, POIs are marked according to cellular base station identifiers only. Huomo ¶[0045] deals with situations where the coverage areas of a plurality of cellular base stations overlap. As the Examiner observed during the interview, in ¶[0045], Huomo states: "The mobile terminal may store a predetermined number, or all, of the cell-IDs or other identifiers associated with the strongest field strengths." This sentence DOES disclose storing a signal *identifier*, but it DOES NOT disclose storing field strength. The only reasonable interpretation of the Huomo's sentence is that Huomo teaches the use of field strength *to determine which **identifiers** to store*. What Huomo's sentence teaches is that the system should "store a predetermined number, or all, of the *cell-IDs or other identifiers*." But which identifiers should be stored? Huomo's sentence answers that question by saying that the identifiers should be chosen for storage when they are "associated with the strongest field strength."

Support for that interpretation includes the fact that Huomo ¶[0045] goes on to say that "the mobile terminal could invoke actions relating to any of the identifiers currently perceivable thereto. Alternatively, the mobile terminal could ***[invoke] actions relating to the strongest*** relative field strength …." [Emphasis added]

The Examiner suggests (in his "in other words…"comment) that Huomo's ¶[0045] is saying that "the mobile stores base stations identifiers AND signal strengths." That is decidedly an error. Assignee respectfully asks that the Examiner read the quoted sentence from Huomo again. The sentence says that the device stores base station *identifiers* ASSOCIATED WITH the strongest field strengths, not identifiers AND the field strengths. There is no hint of storing field strengths, and no purpose apparent for Huomo to have wished to do so.

In sum, Huomo does not teach comparing the signal strength, recorded when the POI was marked, to the currently received signal strength; rather, Huomo teaches the use of signal strength to select which ***identifier***, among those currently received signals, should be compared to the ***identifiers*** stored on the device.

Again, the Office agreed with assignee's interpretation, in the March 28 Office Action.

Assignee respectfully requests that the Office consider carefully the remarks here about the quoted part of Huomo and make an affirmative finding of fact about Huomo's disclosure that is accurate and consistent with the last Office Action.

III. DISTINCTION BETWEEN FARMER AND THE AMENDED CLAIMS.

Claim 1, as amended, requires comparison of both the signal ID and a signal characteristic other than ID, with the signal characteristic other than ID being "a varying signal characteristic." As reported above, in the interview, the Examiner accepted assignee's point that the secondary reference, Farmer, discloses comparison using two different look-up keys identifying a base station, and he also agreed that Farmer does not disclose comparison using any varying signal characteristic.

Specifically, in Farmer's system, the base station identifiers (IDs) that are used are not globally unique; thus, Farmer uses the base station's carrier frequency as a secondary look-up key to verify the base station identity.

But carrier frequency is not a "varying signal characteristic."

Note that Farmer uses carrier frequency precisely for the reason that it is a parameter that does ***not*** vary over the range of the base station. Thus, use of carrier frequency can help determine a base station's identity. By contrast, each of the pending claims, although using different language, distinguishes over that system, as follows:

Claim 1 refers to "measuring a *varying* signal characteristic other than ID" (part (a)), then (in part (b)) compares "at least one number based on the varying signal characteristic … with at least one number based on corresponding *varying* signal characteristics of each of the first plurality of antenna stations at the location chosen by the user." [Emphasis added] Claim 57 has been amended likewise in these respects.

Claim 2 is a dependent claim that relies on signal strength comparison as the "signal characteristic." Assignee has amended this claim to specify that signal strength is a varying parameter that varies over the range. No narrowing is intended, as this simply confirms an inherent property of signal strength.

Claim 58 has been amended, after reciting the comparison, to specify: "wherein the signal characteristics that are compared include *at least one signal characteristic* that, for each of the second plurality of antenna stations, *differs at different locations* within that antenna station's range." [Emphasis added]

Farmer's "carrier frequency" does not meet the amended limitations. As to claims 1 and 57, a "carrier frequency" is not a "varying signal characteristic" because it is (and must be) constant. As to claim 58, a "carrier frequency" is not a "signal characteristic that … differs at different locations"; to the contrary, it is the *same* at all locations in range of an antenna station. Farmer does not disclose comparison of any other characteristic that varies or differs at different locations within the station's range.

The obviousness combination in the pending rejection does not foreshadow the claimed invention and must be withdrawn. The Examiner recognized as much in the interview.

IV. DISTINCTION BETWEEN HUOMO AND THE AMENDED CLAIMS.

As noted above, in the interview, the Examiner suggested that he was considering reversing the Office's previous decision about what Huomo does not disclose, in light of his renewed reading of ¶[0045] of Huomo. In effect, the Examiner suggested that he was considering returning to the rejection made and overcome before, namely a rejection based on the finding that Huomo anticipated the claims. However, such a rejection should not be resurrected. The same amendments summarized above distinguish each claim from Huomo, as that reference is properly understood, once the factual finding is made that ¶[0045] of Huomo (and the rest of that reference) discloses only storing, and later comparing, *identifiers*, not comparing to any varying or differing stored signal characteristic.

Assignee respectfully requests that the Examiner reaffirm what he correctly wrote before, at page 5 of the current Office Action: "Huomo does not disclose other than identification number" and does not disclose comparing "based on signal characteristics" other than identifiers.

In sum, the combination of Huomo and Farmer does not disclose all elements of any of the independent claims. All rejections in the Office Action having been overcome, prompt reconsideration and allowance are respectfully requested.

As to dependent claim 2, the Office Action refers to Huomo's measurement of signal strength. But Huomo's disclosure in that respect does not meet the claim language. Claim 2 requires that signal strength be *the characteristic that is compared*. Huomo does not *compare* signal strength (monitored level to a previously measured level); Huomo only measures signal strength for the purpose of choosing which

station's signal is the strongest signal, so he can choose a single station for which it will check ID.

V. OTHER AMENDMENTS.

Assignee also has amended claim 58 to specify the "device-specific" nature of the "target location," and to specify that the "signal characteristics" of the signals from the previously identified stations "have previously been determined for the same location as the device-specific target location."

Assignee has amended all claims to clarify uniformly that "signal characteristic" is a characteristic of the communications *signals* of the respective stations.

These clarifications are not necessary to distinguish the combined references but are presented nonetheless to further improve the claim language and its clarity.

VI. CONCLUSION.

Assignee understands the Examiner's time constraints, as he stated in the call. However, if a further telephone call would be helpful in clarifying the situation, assignee's undersigned representative, and the inventor, can make themselves available at the Examiner's convenience.

Assignee thanks the Examiner again for his attention and respectfully requests reconsideration in view of the remarks above. All claims plainly are in condition for allowance.

Please feel free to telephone the undersigned if anything else seems required to conclude prosecution of this application.

Respectfully submitted,

BROADPHONE, LLC

by its attorney

Dated: May 6, 2013

/Louis J. Hoffman/

Louis J. Hoffman
Reg. No. 38,918

LOUIS J. HOFFMAN, P.C.
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Scottsdale, Arizona 85260
(480) 948-3295

Electronic Acknowledgement Receipt

EFS ID:	15705413
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	06-MAY-2013
Filing Date:	16-APR-2012
Time Stamp:	19:11:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	13-05-06-Broadphone-CON2-RTOA.pdf	163401 c926ffd4802cd515ebb7684e052632bd7f576184	no	15

Warnings:

Information:

Total Files Size (in bytes):	163401

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTOL-413A (08-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Applicant Initiated Interview Request Form

Application No.: 13/448,309 First Named Applicant: SHKEDI, ROY
Examiner: PHUONG, DAI Art Unit: 2644 Status of Application: 1ST OFFICE ACTION AFTER RCE

Tentative Participants:
(1) Examiner Phuong **(2)** Louis J. Hoffman
(3)_____ **(4)**_____

Proposed Date of Interview: 04/23/2013 **Proposed Time:** 1:00 PM **(AM/PM)**

Type of Interview Requested:
(1) [✓] Telephonic (2) [ ] Personal (3) [ ] Video Conference

Exhibit To Be Shown or Demonstrated: [ ] YES [ ] NO
If yes, provide brief description:_____

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) Rej.	All claims	Huomo, Farmer.	[ ]	[ ]	[ ]
(2)			[ ]	[ ]	[ ]
(3)			[ ]	[ ]	[ ]
(4)			[ ]	[ ]	[ ]

[ ] Continuation Sheet Attached [ ] Proposed Amendment or Arguments Attached
Brief Description of Arguments to be Presented: (See supplemental sheet, attached)

An interview was conducted on the above-identified application on _____

NOTE: This form should be completed and filed by applicant in advance of the interview (see MPEP § 713.01). If this form is signed by a registered practitioner not of record, the Office will accept this as an indication that he or she is authorized to conduct an interview on behalf of the principal (37 CFR 1.32(a)(3)) pursuant to 37 CFR 1.34. This is not a power of attorney to any above named practitioner. See the Instruction Sheet for this form, which is incorporated by reference. By signing this form, applicant or practitioner is certifying that he or she has read the Instruction Sheet. After the interview is conducted, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible. This application will not be delayed from issue because of applicant's failure to submit a written record of this interview.

/Louis J. Hoffman/
Applicant/Applicant's Representative Signature

Examiner/SPE Signature

Louis J. Hoffman
Typed/Printed Name of Applicant or Representative

38918
Registration Number, if applicable

This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 24 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Applicant Initiated Interview Request Form (Supplemental Sheet)
Application No.: 13/448,309
First Named Applicant: Shedi, Roy
Examiner: Phuong, Dai
Art Unit: 2644

Brief Description of Arguments to be Presented:

Office seems to agree on distinction over Huomo (Huomo discloses only ID number) but views claim language as not capturing distinction sufficiently to avoid the Huomo/Farmer obviousness combination. Applicant wishes to resolve claim wording to ensure distinction is clear and distinguishes both references.

Electronic Acknowledgement Receipt

EFS ID:	15577871
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	22-APR-2013
Filing Date:	16-APR-2012
Time Stamp:	15:11:32
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Letter Requesting Interview with Examiner	13-04-22-Broadphone-CON2-Examiner_Iview_Reqst.pdf	238975 8dd826abf64da192a93991b3f12ec4fb71621f77	no	2

Warnings:

Information:

Total Files Size (in bytes):	238975

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/448,309	04/16/2012	Roy Shkedi	24-CON2	1020

26362 7590 03/28/2013
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

EXAMINER
PHUONG, DAI

ART UNIT	PAPER NUMBER
2644	

NOTIFICATION DATE	DELIVERY MODE
03/28/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Louis@valuablepatents.com
donald@valuablepatents.com
shaelyn@valuablepatents.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	13/448,309	SHKEDI, ROY	
	Examiner	Art Unit	
	DAI A. PHUONG	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02/26/13*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,15,16,22,23,28 and 47-66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,15,16,22,23,28 and 47-66* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/26/13 has been entered.

Response to Argument

2. Applicant's arguments, filed 07/02/12, with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Claims 8-14, 17-21, 24-27, 29-46 have been canceled.

Claims 1-7, 15-16, 22-23, 28 and 47-66 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-3, 5-7, 15-16, 22-23, 28 and 47-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huomo (U.S. 20040203863) in view of Farmer et al. (U.S. 7706975).

For claim 1, Huomo discloses a location determining method, operable by a first portable RF communications device, the method comprising:

(a) the first portable RF communications device (item 102 in fig. 1) monitoring its location by

(i) receiving communications signals from a first plurality of fixed-location service-area antenna stations (base station 104, 106 and 108 in fig. 1) capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating,

(ii) identifying at least one ID within at least one of the received communications signals (at least fig. 1 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively), and

(iii) measuring a signal characteristic associated with a received communications signal from each of the first plurality of antenna stations (at least fig. 1 and [0035]-[0047]. The mobile terminal 102 can perform signal strength measurements for the channel associated with BS 104, as well as other base stations such as BS 106, 108); and

(b) the first portable RF communications device determining if a first monitored location, monitored in accordance with part, is within proximity of a location chosen by a user of the first portable RF communications device, as a result of electronically comparing

(i) the at least one ID (at least **the cell-ID and/or BSIC)** at of the first monitored location with at least one ID at ~~a~~ location chosen by the user (at least fig. 4 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as **the cell-ID and/or BSIC**, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively. This information can be used by a mobile terminal-specific implementation to identify or "tag" the area served by one or more of the list of base stations as Points of Interest (POI). One or more actions, applications, services, etc. may then be linked to each POI. As described more fully below, **a user's re-entry into an area/cell 110, 112, 114** where a POI has been stored can automatically invoke an application(s) or other action(s) in accordance with the invention. Furthermore, a retail store or other company 122 may transmit a potential POI 124 to prompt the user of the mobile terminal 102 to consider accessing and/or storing that location identifier for current and/or future use. The potential POI 124 essentially includes a predetermined **base station identifier and/or cell-ID** that is measured and provided by the company 122, possibly with the assistance of the cell operator or a third party that is knowledgeable on how to measure the appropriate signals. If the user stores the POI 124, an action linked to that POI 124 will automatically be triggered **when the user returns to cell 110**); and

(ii) at least one number (the mobile terminal may store a predetermined number, or all, of the cell-Ids, BSIC or other identifiers associated with the strongest field strengths) based on the characteristic of each of the first plurality of antenna stations at the first monitored location with at least one number based on signal characteristics of each of the first plurality of antenna stations at the location chosen by the user (at least fig. 4 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as **the cell-ID and/or BSIC**, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively. This information can be used by a mobile terminal-specific implementation to identify or "tag" the area served by one or more of the list of base stations as Points of Interest (POI). One or more actions,

applications, services, etc. may then be linked to each POI. As described more fully below, **a user's re-entry into an area/cell 110, 112, 114** where a POI has been stored can automatically invoke an application(s) or other action(s) in accordance with the invention. Furthermore, a retail store or other company 122 may transmit a potential POI 124 to prompt the user of the mobile terminal 102 to consider accessing and/or storing that location identifier for current and/or future use. The potential POI 124 essentially includes a predetermined **base station identifier and/or cell-ID** that is measured and provided by the company 122, possibly with the assistance of the cell operator or a third party that is knowledgeable on how to measure the appropriate signals. If the user stores the POI 124, an action linked to that POI 124 will automatically be triggered **when the user returns to cell 110**. Moreover, the mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. However, ctions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

However, Huomo does not disclose other than identification number based on signal characteristics.

In the same field of endeavor, Farmer et al. disclose comparing (i) the at least one ID at the first monitored location with at least one ID at the location chosen by the user and (ii) at least one number, other than identification number, based on the characteristic of each of the first plurality of antenna stations at the first monitored location with at least one number, other than identification number, based on signal characteristics of each of the first plurality of antenna stations at the location chosen by the user (at least table 1, 2, col. 2, line 62 to col. 3, line 10; col. 6, lines 14 to col. 8, line 28. The UE compares the cell ID, latitude and longitude, PSC or BSIC, and base station carrier frequency of a current cell with the cell ID, latitude and longitude, PSC or BSIC, and

base station carrier frequency of a previous cell in order to determine whether the UE is located in the previous cell.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Huomo, as taught by Farmer et al., the motivation being in order calculate the location of the user equipment.

For claim 2, Huomo disclose the method of Claim 1 wherein the characteristic is the signal's strength (at least fig. 1 and [0035]-[0047]. The mobile terminal performs signal strength measurements (and bit error rate measurements) on the received signal on the channel is it currently operating on, as well as signal strength measurements on a list of candidate channels supplied to it by the BS.)

For claim 3, Huomo disclose the method of Claim 2 wherein the chosen location fingerprint on signal strengths were measured by the first portable RF communication device (at least fig. 1 and [0035]-[0047]. The mobile terminal performs signal strength measurements (and bit error rate measurements) on the received signal on the channel is it currently operating on, as well as signal strength measurements on a list of candidate channels supplied to it by the BS.)

For claim 5, Huomo disclose the method of Claim 2 wherein the chosen location signal strengths and the at least one ID originated from a database of geographic locations and corresponding signal strengths and IDs (at least fig. 1 and [0035]-[0047]. The mobile terminal performs signal strength measurements (and bit error rate measurements) on the received signal on the channel is it currently operating on, as well as signal strength measurements on a list of candidate channels supplied to it by the BS.)

For claim 6, Huomo disclose the method of Claim 5 wherein the database is stored remotely from the first portable RF communications device (at least fig. 1 and [0035]-[0047].

Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively.)

For claim 7, Huomo disclose the method of Claim 5 wherein the database is built by a service provider (at least fig. 1 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively.)

For claim 15, Huomo disclose the method of Claim i wherein the at least one ID is a cell ID (at least fig. 1 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively.)

For claim 16, Huomo disclose the method of Claim 1 wherein the first portable RF communications device is a mobile phone ([0060]).

For claim 22, Huomo disclose the method of Claim i wherein the signal characteristic is the signal's arrival time (at least fig. 1 and [0035]-[0047] and [0070]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively. Furthermore, transmitting mediums include, but are not limited to, transmissions via wireless/radio wave communication networks).

For claim 23, Huomo disclose the method of Claim i wherein the signal characteristic is the signal's phase (at least fig. 1 and [0035]-[0047] and [0070]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively. Furthermore, transmitting mediums include, but are not limited to, transmissions via wireless/radio wave communication networks).

For claim 28, Huomo disclose the method of Claim 1 wherein part (a) monitoring step is performed iteratively, with a predetermined time delay between successive iterations (at least fig.

1 and [0035]-[0047] and [0070]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 47, Huomo disclose the method of Claim 2 wherein the monitored location of the first portable RF communications device is determined to be within proximity of the chosen location if the at least one number based on the measured signal strengths at the monitored location and the at least one number based the measured signal strengths at the chosen location are related within a predetermined threshold (at least fig. 1 and [0035]-[0047] and [0070]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. However, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 48, Huomo disclose the method of Claim 1 wherein the at least one ID is a WiFi network ID ([0010] and [0040]-[0041]).

For claim 49, Huomo disclose the method of Claim 1 further comprising passing an indicia to a computer program application running on the first portable RF communications device indicating that the device **is one of**: (i) at the chosen location, or (ii) no longer at the chosen location (at least fig. 1 and [0035]-[0047]. When the user enters any of these locations, an action can be invoked, such as notifying the user that he/she is currently within a certain distance of one of the company franchises, notifying the user of the address or directions to the franchise, sale notices, provide electronic coupons, etc.)

For claim 50, Huomo disclose the method of Claim 1 further comprising launching a computer program application on the first portable RF communications device when the device is at the chosen location (at least fig. 1 and [0035]-[0047]. Another action may be to invoke a local

application, such as a currency converter, calculator, audible alarm, e-mail application, etc. Yet another action may be to open a local browser, such as a Wireless Application Protocol (WAP) browser, and to access a predetermined URL via the browser. The type of action that can be associated with a particular POI is virtually limitless.)

For claim 51, Huomo disclose the method of Claim i wherein part (b) is performed iteratively, with a predetermined time delay between successive iterations (at least fig. 1 and [0035]-[0047] and [0070]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 52, Huomo disclose the method of Claim i wherein part (b) is performed depending on the rate of change of the user's location (at least [0026]. The invention is particularly beneficial for mobile terminal users who expect to return (whether frequently or infrequently) to one or more particular locations, as the mobile terminal itself will recognize that it has returned to such a location and can automatically trigger actions, applications, services, etc. that are useful at that location.)

For claim 53, Huomo disclose the method of Claim 1 wherein part (b) is performed upon request from a computer program application running on the first portable RF communications device (at least fig. 1, [0026] and [0035]-[0047]. When the mobile terminal moves from place to place and recognizes that it is within a wireless area corresponding to a stored point of interest, the mobile device automatically initiates an action that has been linked to the corresponding radio frequency identifier for that wireless area.)

For claim 54, Huomo disclose the method of Claim 1 wherein part (b) is performed upon the first portable RF communications device switching the base station with which it is registered (at least fig. 1, [0026]-[0029] and [0035]-[0047]. When the mobile terminal moves from place to place and recognizes that it is within a wireless area corresponding to a stored point of interest, the mobile device automatically initiates an action that has been linked to the corresponding radio frequency identifier for that wireless

area. Moreover, when a mobile terminal moves from one cell to another, an automatic channel/frequency change will occur, which is generally referred to as "handoff" or "handover.")

For claim 55, Huomo disclose the method of Claim i wherein the at least one number based on the signal characteristic of each of the first plurality of antenna stations is more than one number, each of which number is based on the signal characteristic of only one of the first plurality of the antenna stations (at least fig. 1 and [0035]-[0047]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 56, Huomo disclose the method of Claim i wherein the at least one number based on the signal characteristic of each of the first plurality of antenna stations is one number based on the signal characteristic of more than one of the first plurality of the antenna stations (at least fig. 1 and [0035]-[0047]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 57, this claim is similar to claim 1. Therefore, the claim is also rejected for the same reasons in claim 1.

For claim 58, this claim is similar to claim 1. Therefore, the claim is also rejected for the same reasons in claim 1.

For claim 59, this claim is similar to claim 51. Therefore, the claim is also rejected for the same reasons in claim 51.

For claim 60, Huomo disclose the method of Claim 58 wherein the portable RF communications device is determined to be within proximity of the target location if the at least

one number based on the signal characteristics of the first plurality of communications signals and at least one number based on corresponding signal characteristics of a second plurality of antenna stations are related within a predetermined threshold (at least fig. 1 and [0035]-[0047]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 61, this claim is similar to claim 49. Therefore, the claim is also rejected for the same reasons in claim 49.

For claim 62, this claim is similar to claim 50. Therefore, the claim is also rejected for the same reasons in claim 50.

For claim 63, this claim is similar to claim 51. Therefore, the claim is also rejected for the same reasons in claim 51.

For claim 64, this claim is similar to claim 52. Therefore, the claim is also rejected for the same reasons in claim 52.

For claim 65, this claim is similar to claim 53. Therefore, the claim is also rejected for the same reasons in claim 53.

For claim 66, this claim is similar to claim 54. Therefore, the claim is also rejected for the same reasons in claim 54.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huomo (U.S. 20040203863) in view of Farmer et al. (U.S. 7706975) and further in view of Bar-On et al. (Pub. No. 20050159174).

For claim 2, the combination of Huoumo and Farmer et al. disclose all limitations in claim 1. However, the combination of Huoumo and Farmer et al. disclose do not teach wherein the chosen location signal strengths were measured by a second portable RF communication device.

In the same field of endeavor, Bar-On et al. disclose wherein the chosen location signal strengths were measured by a second portable RF communication device (fig. 1 and abstract, [0008] and [0013]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Huomo by specifically including the chosen location signal strengths were measured by a second portable RF communication device, as taught by Bar-On et al., the motivation being in order calculate the location of the target MS (N) from information obtained from the received signals.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAI A. PHUONG whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/DAI A PHUONG/

Primary Examiner, Art Unit 2644
Date: 3/21/13

Notice of References Cited	Application/Control No. 13/448,309	Applicant(s)/Patent Under Reexamination SHKEDI, ROY	
	Examiner DAI A. PHUONG	Art Unit 2644	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,706,975	04-2010	Farmer et al.	701/469
*	B	US-2004/0203863	10-2004	Huomo, Heikki	455/456.1
*	C	US-2005/0159174	07-2005	Bar-On et al.	455/456.6
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/18/2012	09/20/2012	03/21/2013						
	1	✓	✓	✓						
	2	✓	✓	✓						
	3	✓	✓	✓						
	4	✓	✓	✓						
	5	✓	✓	✓						
	6	✓	✓	✓						
	7	✓	✓	✓						
	8	-	-	-						
	9	-	-	-						
	10	-	-	-						
	11	-	-	-						
	12	✓	-	-						
	13	-	-	-						
	14	-	-	-						
	15	✓	✓	✓						
	16	✓	✓	✓						
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	32	✓	-	-						
	33	-	-	-						
	34	-	-	-						
	35	-	-	-						
	36	-	-	-						

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/18/2012	09/20/2012	03/21/2013						
	37	-	-	-						
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	39	-	-	-						
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	41	-	-	-						
	42	-	-	-						
	43	-	-	-						
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	46		-	-						
	47		✓	✓						
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	60		✓	✓						
	61		✓	✓						
	62		✓	✓						
	63		✓	✓						
	64		✓	✓						
	65		✓	✓						
	66		✓	✓						

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3	"20100156706"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 18:18
L2	7	"7706976".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:11
L3	6	"7706975".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:12
L4	18	(SHKEDI near2 ROY).in. and (locat$4 position$4 same compar$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:20
L5	5	(SHKEDI near2 ROY).in. and ((locat$4 position$4) same compar$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:20
L6	5	(SHKEDI near2 ROY).in. and ((locat$4 position$4) same compar$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 19:20
S1	33383547	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 07:21
S2	2	"20090031006"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 07:23
S3	1	12/122619	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:03
S4	2	"7057556".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:48

S5	2	"7050786".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:49
S6	2	"6972717".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:54
S7	0	"200900031006"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:55
S8	2	"20090031006"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:55
S9	3	"20070232322"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:55
S10	2	"20080039114"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:04
S11	3406	((cell (base near3 station) bs) near4 (id identity identifi$8)) with (table referenc$4) with (locat$4 position$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:20
S12	197	((cell (base near3 station) bs) near4 (id identity identifi$8)) with (table referenc$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:21
S13	0	S3 and S12	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:23
S14	33383547	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:23
S15	163	S12 and S14	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:24
S16	6	"7706975".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:29

S17	1	12/720362	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:41
S18	2	"20080039114"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:44
S19	33383547	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:16
S20	0	(via near5 (second near3 (mobile $phone pda portable))) with (table referenc$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:17
S21	55	((second near3 (mobile $phone pda portable))) with (table referenc$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:18
S22	36	((second near3 (mobile $phone pda portable))) with (measur$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:18
S23	25	S19 and S22	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:18
S24	62	((second near3 (mobile $phone pda portable))) near12 (measur$4) with ((determin$4 comput$4) near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:22
S25	53	S19 and S24	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:23
S26	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:03
S27	39	(SHKEDI near2 ROY).in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:29
S28	8	(SHKEDI near2 ROY).in. and (id).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:30

S29	3	(SHKEDI near2 ROY).in. and (rf same locat$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:31
S30	33453743	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:13
S31	3	(SHKEDI near2 ROY).in. and ((locat$4 position$4) same id).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:14
S32	150	((cell (base near3 station$4) (access near3 point$4)) near4 (id identity identif$6)) same (interest$4 near4 (locat$4 position$4 area point$4)) same (match$4 compar$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:16
S33	121	S30 and S32	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:17
S34	6752	((select$4 chos$4) near4 (locat$4 position$4 area)) same (within range proximity) same ((current$4 monitor$4) near4 (locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:12
S35	33511100	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:12
S36	437	((select$4 chos$4) near4 (locat$4 position$4 area)) same (within range proximity) same ((current$4 monitor$4) near4 (locat$4 position$4)) same ((base near3 station$4) cell)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:13
S37	437	S34 and S36	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:13
S38	15	((select$4 chos$4) near4 (locat$4 position$4 area)) same (within range proximity) same ((current$4 monitor$4) near4 (locat$4 position$4)) same ((base near3 station$4) cell) same ((compar$4 less more than greater) near12 (threshold level predetermin$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:14
S39	13	S35 and S38	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:15
S40	7	"7706811".pn.	US-PGPUB;	OR	ON	2012/03/01

			USPAT; EPO; JPO; DERWENT; IBM_TDB			11:26
S41	596	((current$4 monitor$4 select$4 chos$4) near4 (locat$4 position$4 area)) same (within range) same ((base near3 station$4) cell) same ((compar$4 less more than greater) near12 (threshold level predetermin$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:36
S42	177428	"455"/$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:37
S43	586	S34 and S42	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:37
S44	11	S41 and S43	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:38
S45	2	(SHKEDI near2 ROY).in. and ((compar$4 less more than greater) near12 (threshold level predetermin$4)).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:53
S46	14	(SHKEDI near2 ROY).in. and (location$4 position$4 area proximit$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:54
S47	33569967	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:27
S48	2	"20080039114"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:27
S49	3	"20100156706"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:28
S50	0	(notif$8 alert$4) with (previous near4 (locat$4 position$4)) with ((compar$4 match$4) near6 (id identif$4)) with (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:31
S51	8	(notif$8 alert$4) with ((locat$4 position$4)) with ((compar$4 match$4) near6 (id identif$4)) with (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2012/09/19 11:31

			IBM_TDB			
S52	2	S47 and S51	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:31
S53	9	((notif$8 alert$4) near5 user) same ((locat$4 position$4)) same ((compar$4 match$4) near6 (id identif$4)) same (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:35
S54	9	((notif$8 alert$4) near5 user) same ((locat$4 position$4)) same ((compar$4 match$4) near12 (id identif$4)) same (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:35
S55	8	S47 and S54	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:35
S56	10	((notif$8 alert$4) near5 user) same (previous$4 near5 (locat$4 position$4)) same (((base near3 station$4) cell) near5 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:48
S57	8	S47 and S56	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:49
S58	47	((notif$8 alert$4)) same ((locat$4 position$4)) same ((compar$4 match$4) near6 (id identif$4)) same (base near3 station$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:50
S59	32	S47 and S58	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:50
S60	42	((notif$8 alert$4)) same (previous$4 near5 (locat$4 position$4)) same (((base near3 station) cell) near6 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:51
S61	33	S47 and S60	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 11:51
S62	308	((notif$8 alert$4) near12 (locat$4 position$4)) with (((base near3 station) cell) near6 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:00
S63	182	S47 and S62	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2012/09/19 12:00

			IBM_TDB			
S64	62	(previous$4 near5 (locat$4 position$4)) with ((compar$4 match$4 determin$4) near13 ((base near3 station) cell) near6 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:07
S65	26	S47 and S64	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:08
S66	124	((select$4 choos$4 chos$4) near5 (locat$4 position$4)) with ((compar$4 match$4 determin$4) near13 ((base near3 station) cell) near6 (id identif$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:27
S67	74	S47 and S66	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:28
S68	2	"8170583".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:37
S69	3	"20040203863"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 12:48
S70	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 13:19
S71	2	"8170583".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/09/19 14:05
S72	33612727	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:23
S73	3	"20040203863"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:24
S74	2	"8170583".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:31
S75	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2013/03/21 16:32

			IBM_TDB			
S76	0	((previous (re adj entry)) near4 (area locat$4 position$4)) with compar$4 near12 (signal$4) with ((cell (base near3 station$4))near4 (id identity identif$9 number))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:38
S77	236	((previous (re adj entry)) near4 (area locat$4 position$4)) with ((cell (base near3 station$4))near4 (id identity identif$9 number))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:39
S78	157	S72 and S77	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:39
S79	0	((previous (re adj entry)) near4 (area locat$4 position$4)) with ((compar$4 near12 (cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 (strength$4 signal$4 characteristic$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:56
S80	0	((previous (re adj entry)) near4 (area locat$4 position$4)) with (compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 (strength$4 signal$4 characteristic$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:57
S81	181	((area locat$4 position$4)) with (compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 (strength$4 signal$4 characteristic$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:58
S82	127	S72 and S81	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 16:58
S83	1	((previous histor$4) near5 (area locat$4 position$4)) with (compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 (strength$4 signal$4 characteristic$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:00
S84	2502	previous$4 near9 camp$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:02
S85	198355	"455"/$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:02
S86	74	S72 and S84 and S85	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:02
S87	0	((previous histor$4) near5 (area	US-PGPUB;	OR	ON	2013/03/21

		locat$4 position$4)) with (compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 frequency)	USPAT; EPO; JPO; DERWENT; IBM_TDB			17:20
S88	263	(compar$4 near12 ((cell (base near3 station$4)) near4 (id identity identif$9 number)) near12 frequency)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:21
S89	195	S72 and S88	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2013/03/21 17:21

3/21/2013 7:21:56 PM
C:\Users\dphuong\Documents\EAST\Workspaces\12720362.wsp

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

CPC- SEARCHED

Symbol	Date	Examiner

CPC COMBINATION SETS - SEARCHED

Symbol	Date	Examiner

US CLASSIFICATION SEARCHED

Class	Subclass	Date	Examiner
455	404.2, 432.1, 435.1-453, 456.1-456.3	05/18/12	ad
370	328-333	5/18/12	ad
	East search updated	9/20/12	ad
	East search updated	3/21/13	ad

SEARCH NOTES

Search Notes	Date	Examiner
Inventor Search	5/18/12	ad
Inventor search updated	9/20/12	ad
Inventor search updated	3/21/13	ad

INTERFERENCE SEARCH

US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
			ad

PTO/SB/30EFS (07-09)
Approved for use through 07/31/2012. OMB 0651-0031
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REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)

Application Number	13448309	Filing Date	2012-04-16	Docket Number (if applicable)	24-CON2	Art Unit	2644
First Named Inventor	Shkedi, Roy			Examiner Name	Phuong, Dai		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

- ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
- ☐ Other _____

☒ Enclosed

- ☒ Amendment/Reply
- ☐ Information Disclosure Statement (IDS)
- ☐ Affidavit(s)/ Declaration(s)
- ☐ Other _____

MISCELLANEOUS

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other _____

FEES

☐ **The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**
The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to Deposit Account No _____

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (07-09)
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Signature of Registered U.S. Patent Practitioner			
Signature	/Louis J. Hoffman/	Date (YYYY-MM-DD)	2013-02-26
Name	Louis J. Hoffman	Registration Number	38918

This collection of information is required by 37 CFR 1.114. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Shkedi, Roy	Art Unit	:	2617
Serial No.	:	13/448,309	Examiner	:	Phuong, Dai
Filing Date	:	04/16/2012	Conf. No.	:	1020
Title	:	Signal Comparison-Based Location Determining Method			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – February 26, 2013

AMENDMENT ACCOMPANYING RCE

Dear Sir:

In connection with the request for continued examination (RCE) filed contemporaneously, assignee submits the following amendments and remarks. This paper responds to the grounds of rejection in the Office Action dated September 28, 2012, which was made final, and takes into account the remarks in the Advisory Action dated February 14, 2013.

Amendments to the Claims begin on page 2.

Remarks begin on page 7.

Fees for the RCE and the two-month extension of time, both requested herewith, are submitted contemporaneously.

A request for examiner interview (form PTOL-413A) is also filed concurrently.

Amendments

IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently amended) A location-determining method, operable by a first portable RF communications device, the method comprising:

(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a first plurality of fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with a received communications signal from each of the first plurality of antenna stations; and

(b) the first portable RF communications device determining if a first monitored location, monitored in accordance with part(a), is within proximity of a location chosen by a user of the first portable RF communications device, as a result of electronically comparing (i) the at least one ID at the first monitored location with at least one ID at the location chosen by the user and (ii) at least one number, other than identification number, based on the characteristic of each of the first plurality of antenna stations at the first monitored location with at least one number, other than identification number, based on signal characteristics of each of the first plurality of antenna stations at the location chosen by the user.

Claim 2 (Previously presented) The method of Claim 1 wherein the characteristic is the signal's strength.

Claim 3 (Previously presented) The method of Claim 2 wherein the chosen location signal strengths were measured by the first portable RF communication device.

Claim 4 (Previously presented) The method of Claim 2 wherein the chosen location signal strengths were measured by a second portable RF communication device.

Claim 5 (Previously presented) The method of Claim 2 wherein the chosen location signal strengths and the at least one ID originated from a database of geographic locations and corresponding signal strengths and IDs.

Claim 6 (Previously presented) The method of Claim 5 wherein the database is stored remotely from the first portable RF communications device.

Claim 7 (Original) The method of Claim 5 wherein the database is built by a service provider.

Claims 8-14 (Cancelled)

Claim 15 (Original) The method of Claim 1 wherein the at least one ID is a cell ID.

Claim 16 (Previously presented) The method of Claim 1 wherein the first portable RF communications device is a mobile phone.

Claims 17-21 (Cancelled)

Claim 22 (Previously presented) The method of Claim 1 wherein the signal characteristic is the signal's arrival time.

Claim 23 (Previously presented) The method of Claim 1 wherein the signal characteristic is the signal's phase.

Claims 24-27 (Cancelled)

Claim 28 (Previously presented) The method of Claim 1 wherein part (a) is performed iteratively, with a predetermined time delay between successive iterations.

Claims 29-46 (Cancelled)

Claim 47 (Previously presented) The method of Claim 2 wherein the monitored location of the first portable RF communications device is determined to be within proximity of the chosen location if the at least one number based on the measured signal strengths at the monitored location and the at least one number based the measured signal strengths at the chosen location are related within a predetermined threshold.

Claim 48 (Previously presented) The method of Claim 1 wherein the at least one ID is a WiFi network ID.

Claim 49 (Previously presented) The method of Claim 1 further comprising passing an indicia to a computer program application running on the first portable RF communications device indicating that the device is one of: (i) at the chosen location, or (ii) no longer at the chosen location.

Claim 50 (Previously presented) The method of Claim 1 further comprising launching a computer program application on the first portable RF communications device when the device is at the chosen location.

Claim 51 (Previously presented) The method of Claim 1 wherein part (b) is performed iteratively, with a predetermined time delay between successive iterations.

Claim 52 (Previously presented) The method of Claim 1 wherein part (b) is performed depending on the rate of change of the user's location.

Claim 53 (Previously presented) The method of Claim 1 wherein part (b) is performed upon request from a computer program application running on the first portable RF communications device.

Claim 54 (Previously presented) The method of Claim 1 wherein part (b) is performed upon the first portable RF communications device switching the base station with which it is registered.

Claim 55 (Previously presented) The method of Claim 1 wherein the at least one number based on the signal characteristic of each of the first plurality of antenna stations is more than one number, each of which number is based on the signal characteristic of only one of the first plurality of the antenna stations.

Claim 56 (Previously presented) The method of Claim 1 wherein the at least one number based on the signal characteristic of each of the first plurality of antenna stations is one number based on the signal characteristic of more than one of the first plurality of the antenna stations.

Claim 57 (Currently amended) A portable RF communications device comprising an antenna, a user interface, and a storage device, wherein the storage device contains computer program code that, when executed by the portable device,

controls the portable device to cause the portable device to perform a location-determining method, the method comprising:

(a) monitoring the location of the portable device by (i) receiving with the antenna communications signals from a first plurality of fixed-location service-area antenna stations capable of RF communication with the portable device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with a received communications signal from each of the first plurality of antenna stations; and

(b) determining if a first monitored location, monitored in accordance with part (a), is within proximity of a location entered by a user of the portable device on the user interface, as a result of electronically comparing (i) the at least one ID at the first monitored location with at least one ID at the location chosen by the user; and (ii) at least one number, other than identification number, based on the signal characteristics of each of the first plurality of antenna stations at the first monitored location with at least one number, other than identification number, based on signal characteristics of each of the first plurality of antenna stations at the location chosen by the user.

Claim 58 (Currently amended) A method of determining whether a portable RF communications device is present at a target location, the method comprising:

with the portable RF communications device automatically:

(a) receiving a plurality of communications signals, each from one of a first plurality of antenna stations within range of the portable RF communications device, wherein the antenna stations are fixed-location service-area antenna stations and are substantially continuously operating; and

(b) determining whether the portable RF communications device is within proximity of the target location by electronically comparing at least one number, other than identification number, based on signal characteristics of the first plurality of communications signals with at least one number, other than

identification number, based on corresponding signal characteristics of a second plurality of antenna stations that have previously been identified as being within range of the target location.

Claim 59 (Previously presented) The method of Claim 58 wherein part (a) is performed iteratively, with a predetermined time delay between successive iterations.

Claim 60 (Previously presented) The method of Claim 58 wherein the portable RF communications device is determined to be within proximity of the target location if the at least one number based on the signal characteristics of the first plurality of communications signals and at least one number based on corresponding signal characteristics of a second plurality of antenna stations are related within a predetermined threshold.

Claim 61 (Previously presented) The method of Claim 58 further comprising passing an indicia to a computer program application running on the portable RF communications device indicating that the device is one of: (i) at the chosen location, or (ii) no longer at the chosen location.

Claim 62 (Previously presented) The method of Claim 58 further comprising launching a computer program application on the portable RF communications device when the device is at the chosen location.

Claim 63 (Previously presented) The method of Claim 58 wherein part (b) is performed iteratively, with a predetermined time delay between successive iterations.

Claim 64 (Previously presented) The method of Claim 58 wherein part (b) is performed depending on the rate of change of the user's location.

Claim 65 (Previously presented) The method of Claim 58 wherein part (b) is performed upon request from a computer program application running on the portable RF communications device.

Claim 66 (Previously presented) The method of Claim 58 wherein part (b) is performed upon the portable RF communications device switching the base station with which it is registered.

Remarks

The Office Action dated September 28, 2012, made final, rejected claims 1-7, 15-16, 22-23, 28, and 47-66 (all of the pending claims) on the ground of obviousness-type double patenting over U.S. Patents 7,706,811 and 8,170,583. To overcome that rejection, assignee previously submitted a terminal disclaimer and accompanying fee.

The Office Action also rejected all pending claims except dependent claim 4 under 35 U.S.C. §102 as anticipated by U.S. Pat. Pub. 2004/0203863 (Huomo), and rejects claim 4 under 35 U.S.C. §103 over Huomo in view of U.S. Pat. Pub. 2005/0159174 (Bar-On).[1] In a response to Office Action, assignee argued (1) that, based on the structure of the claims and the specification, the phrase "number based on signal characteristics" cannot be just a signal's identifier (ID), and (2) that Huomo does not teach or suggest comparing signal strength (or any other signal characteristic) at the monitored location to signal strength at a user-selected location to determine location.

In an Advisory Action dated February 14, 2013, though, the examiner disagreed, saying that the "broadest reasonable interpretation" of "the number based on signal characteristics" *could* include "base station identifier or cell ID." The Office maintained the rejection because Huomo, according to the examiner's reading, discloses comparing those identifiers between a "monitor[ed] location" and a "POI" (point of interest).

Assignee thanks the examiner for taking the time to write an Advisory Action with the detailed explanation of the Office's position, rather than just checking a box.

Assignee wishes to obtain a patent with claims containing the phrase "number based on signal characteristics" interpreted as meaning something *different* from a signal's identifier. Assignee thought that the phrase itself is clear to that effect, but the Office disagrees. That dispute between assignee and the Office seems pointless, though, because, as the Advisory Action pointed out, assignee "always has the opportunity to amend the claims during prosecution." By this RCE, assignee takes that opportunity.

---

[1] The rejection of claim 4, at Office Action, p. 16, para. 6, referred to a base combination of Phatak and Farmer, but that is thought to be a typographic error, a stray residual left over from the previous Office Action, so assignee ignored reference to Phatak/Farmer.

In each of the independent claims, assignee has entered amendments to clarify that the "number based on signal characteristics" is "at least one number, *other than identification number*." [Emphasis added][2] In view of the amendments presented here, it is no longer possible for the "broadest reasonable interpretation" of the claim term "number based on signal characteristics" to include a "base station identifier or cell ID." Accordingly, Huomo does not disclose the invention defined by the claims as amended, and the anticipation rejection based on Huomo must be withdrawn.

All rejections in the final Office Action having been overcome, prompt reconsideration and allowance are respectfully requested.

Assignee has contemporaneously filed a request for telephone interview in an effort to conclude prosecution of this application swiftly. Assignee looks forward to the opportunity to discuss the matter with the examiner and finish this application.

After the interview, please feel free to telephone the undersigned if anything else seems required to conclude prosecution of this application.

Respectfully submitted,
BROADPHONE, LLC
by its attorney

Dated: February 26, 2013

/Louis J. Hoffman/
Louis J. Hoffman
Reg. No. 38,918

LOUIS J. HOFFMAN, P.C.
14301 North 87th Street
Suite 312
Scottsdale, Arizona 85260
(480) 948-3295

[2] Support for the type of signal characteristic, including that the signal characteristic is "other than identification number" is found in the specification as filed, for example, at page 19, lines 14-18; page 24, last two lines; page 28, lines 2-8; page 35, lines 6-12; page 51, line 4 to page 52, line 8; and page 53, lines 12-14. Support for the "number based on" such signal characteristics was supplied in the Response to Office Action filed before the final rejection.

PTOL-413A (08-10)
Approved for use through 07/31/2012. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Applicant Initiated Interview Request Form

Application No.: 13/448,309 First Named Applicant: Shkedi, Roy
Examiner: Phuong, Dai Art Unit: 2617 Status of Application: RCE filed 02/26/2013

Tentative Participants:
(1) Examiner Phuong **(2)** Louis J. Hoffman
(3)_____ **(4)**_____

Proposed Date of Interview: 03/08/2013 **Proposed Time:** 1:00 PM **(AM/PM)**
[please advise if another time would be better]

Type of Interview Requested:
(1) [✓] Telephonic (2) [ ] Personal (3) [ ] Video Conference

Exhibit To Be Shown or Demonstrated: [✓] YES [✓] NO
If yes, provide brief description: Amendment with RCE filed 02/26/2013

Issues To Be Discussed

Issues (Rej., Obj., etc)	Claims/ Fig. #s	Prior Art	Discussed	Agreed	Not Agreed
(1) Rej.	all	Huomo	[ ]	[ ]	[ ]
(2)			[ ]	[ ]	[ ]
(3)			[ ]	[ ]	[ ]
(4)			[ ]	[ ]	[ ]

[ ] Continuation Sheet Attached [ ] Proposed Amendment or Arguments Attached

Brief Description of Arguments to be Presented: See remarks in 2/26/13 amendment

An interview was conducted on the above-identified application on _____

NOTE: This form should be completed and filed by applicant in advance of the interview (see MPEP § 713.01). If this form is signed by a registered practitioner not of record, the Office will accept this as an indication that he or she is authorized to conduct an interview on behalf of the principal (37 CFR 1.32(a)(3)) pursuant to 37 CFR 1.34. This is not a power of attorney to any above named practitioner. See the Instruction Sheet for this form, which is incorporated by reference. By signing this form, applicant or practitioner is certifying that he or she has read the Instruction Sheet. After the interview is conducted, applicant is advised to file a statement of the substance of this interview (37 CFR 1.133(b)) as soon as possible. This application will not be delayed from issue because of applicant's failure to submit a written record of this interview.

/Louis J. Hoffman/
Applicant/Applicant's Representative Signature

Examiner/SPE Signature

Louis J. Hoffman
Typed/Printed Name of Applicant or Representative

38918
Registration Number, if applicable

This collection of information is required by 37 CFR 1.133. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 24 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Patent Application Fee Transmittal

Application Number:	13448309
Filing Date:	16-Apr-2012
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Filer:	Louis J. Hoffman/Donald Hertz
Attorney Docket Number:	24-CON2

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 2 months with $75 paid	2252	1	210	210

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	2801	1	465	465
		Total in USD ($)		**675**

Electronic Acknowledgement Receipt

EFS ID:	15056826
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	26-FEB-2013
Filing Date:	16-APR-2012
Time Stamp:	17:14:21
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$675
RAM confirmation Number	5006
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Request for Continued Examination (RCE)	13-02-26-Broadphone-CON2-RCE_trans.pdf	697774 0789b1a9a229f841b33dd0e0a320b42fd8342118	no	3
Warnings:					
Information:					
2	Amendment Submitted/Entered with Filing of CPA/RCE	13-02-26-Broadphone-CON2-Amend_accomp_RCE.pdf	130632 b893d0acae528720193608a61dd00ba943bfb672	no	8
Warnings:					
Information:					
3	Letter Requesting Interview with Examiner	13-02-26-Broadphone-CON2-Iview_Request.pdf	178957 1630dd96ff57937a06a2f8d8e117e6978df5dabd	no	1
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	32191 e1a7f9d664354f9727e6e25438b04eeef2b39415	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	1039554	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
13/448,309	04/16/2012	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 02/26/2013

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 31	Minus	** 32	= 0	X $31 =	0	OR	X $ =	
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $125 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE	

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/MARQUITA JONES/

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/448,309	04/16/2012	Roy Shkedi	24-CON2	1020

26362 7590 02/14/2013
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

EXAMINER
PHUONG, DAI

ART UNIT	PAPER NUMBER
2644	

NOTIFICATION DATE	DELIVERY MODE
02/14/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Louis@valuablepatents.com
donald@valuablepatents.com
shaelyn@valuablepatents.com

PTOL-90A (Rev. 04/07)

ADVISORY ACTION

Applicant, on page 2 of the remark, argues that the "number based on signal characteristic" cannot be a signal's identifier (ID). However, the Examiner respectfully disagrees.

Firstly, Applicant used a particular words recited in the claim, e.g. "number based on signal characteristic". During patent examination, the pending claims must be given their broadest reasonable interpretation. In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550- 51 (CCPA 1969). The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). See MPEP 2111. Therefore, the Examiner is broadly and reasonably interpreted "the number based on signal characteristic" as "base station identifier" or "cell ID".

Secondly, Huomo discloses 37 and 42 that the user can then store that POI-based identifier so that subsequent entry into the area corresponding to that POI-based identifier will again present the associated service(s). The potential POI 124 (chosen location) essentially includes a predetermined base station identifier and cell-ID. In other words, the base station identifier and cell-ID of the entered service area (monitor location) is compared with the base station identifier and cell-ID of the POI. This comparison is performed to determine whether the monitor location is within chosen location.

Applicant, on page 3 of the remark, argues that Huomo does not disclose the comparison in the pending claims. In Huomo [0045], the reference discloses determining *"relative* field strengths," so Huomo appears to teach comparing the current signal strength from one base station to the current signal strength from a second base station. But that is not a comparison of signal strength (or any other characteristic) at the monitored location to signal strength at a user-selected location, as defined in all of the claims. However, the Examiner respectfully disagrees.

At least paragraphs 37 and 42 are more relevant to the claim limitations. In addition, paragraph 45 shows that the signal strength includes identifier of a base station.

Applicant, on page 3 of the remark, argues that in Huomo [0046], the reference discloses comparing "one or more identifiers as POIs" (points of interest). So, Huomo checks if the user is at a given location using the conventional technique of using signal *identifiers.* This is, again, *not* comparing any metric based on signal strength, nor any other "number based on [any] signal characteristic," to see whether a mobile device is or is not at a user-selected location. However, the Examiner respectfully disagrees.

Firstly, Applicant used a particular words recited in the claim, e.g. **"**number based on signal characteristic**"**. During patent examination, the pending claims must be given their broadest reasonable interpretation. In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ

541, 550- 51 (CCPA 1969). The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). See MPEP 2111. Therefore, the Examiner is broadly and reasonably interpreted “the number based on signal characteristic” as “base station identifier” or “cell ID”.

Secondly, Huomo discloses 37 and 42 that the user can then store that POI-based identifier so that subsequent entry into the area corresponding to that POI-based identifier will again present the associated service(s). The potential POI 124 (chosen location) essentially includes a predetermined base station identifier and cell-ID. In other words, the base station identifier and cell-ID of the entered service area (monitor location) is compared with the base station identifier and cell-ID of the POI. This comparison is performed to determine whether the monitor location is within chosen location.

Applicant, on page 3 of the remark, argues that the Office Action argues (bottom of page 9) that Huomo meets the claim limitation of "at least one number based on the characteristic" because in Huomo, "the mobile terminal may store a predetermined number, or all of the cell-Ids, BSIC or other identifiers associated with the strongest field strength." Respectfully, this observation does not match the claim language, regardless of how broadly the claim phrase "number based on signal characteristics" is interpreted, provided that it is given a reasonable interpretation (as must be done). However, the Examiner respectfully disagrees.

At least paragraphs 37 and 42 are more relevant to the claim limitations. In addition, paragraph 45 shows that the signal strength includes identifier of a base station.

Applicant, on page 4 of the remark, argues that the "number based on signal characteristics" simply cannot be "cell-Ids." The claim term "signal characteristics" does not include a station ID, a station ID is not "measured" (see part (a)(iii) of claim 1), and a station ID is not "based on" any "signal characteristic." The distinction between station IDs and "number based on signal characteristic" is quite clear based on (1) the claim structure of claims 1 and 57 (as explained above), (2) applicant's specification, and (3) these and our earlier remarks. The Office Action seems to confuse the usual English phrase "a number of items" with the claim term "a number based on signal characteristics," but those two phrases use "number" in different grammatical senses: The claim term refers to "number" in the sense of a metric or output of a formula, whereas the Office Action refers to the word in the sense of a counted quantity of items. On the top half of page 10, the Office Action quotes from Huomo ¶¶0036, 0037, and 0045 and emphasizes Huomo's use of the terms "cell-ID" and "base station identifier." Again, this cannot meet the claim term "number based on signal characteristic" because IDs and identifiers are simply not "numbers" in the sense used in the claims based on any "signal characteristic." However, the Examiner respectfully disagrees.

Firstly, Applicant used a particular words recited in the claim, e.g. "number based on signal characteristic". During patent examination, the pending claims must be given their broadest reasonable interpretation. In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550- 51 (CCPA 1969). The broadest reasonable interpretation of the claims must also be

consistent with the interpretation that those skilled in the art would reach. In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). See MPEP 2111. Therefore, the Examiner is broadly and reasonably interpreted "the number based on signal characteristic" as "base station identifier" or "cell ID".

Secondly, Huomo discloses 37 and 42 that the user can then store that POI-based identifier so that subsequent entry into the area corresponding to that POI-based identifier will again present the associated service(s). The potential POI 124 (chosen location) essentially includes a predetermined base station identifier and cell-ID. In other words, the base station identifier and cell-ID of the entered service area (monitor location) is compared with the base station identifier and cell-ID of the POI. This comparison is performed to determine whether the monitor location is within chosen location. In addition, paragraph 45 shows that the signal strength includes identifier of a base station. For the reasons above, the Examiner contends that the cited references shows all limitations in the claim.

Applicant, on pages 4-5 of the remark, argues that in sum, Huomo simply does not disclose the claim limitations relating to comparing any metric based on signal strength (or any other characteristic) at the monitored location to the corresponding metric based on the signal characteristic at a user-selected location:

Claim 1: "determining if a first monitored location ... is within proximity of a location choses by the user ..., as a result of electronically comparing ... at least one number based on the [signal] characteristic of each of the ... stations at the ... monitored location with at least one number based on signal characteristics of each of the ... stations at the location chosen by the user."

Claim 58: "determining whether the ... device is within proximity of the target location by electronically comparing at least one number based on signal characteristics of the ... signals with at least one number based on corresponding signal characteristics of ... stations that have previously been identified as being within range of the target location."

Firstly, in response to Applicant's argument, Applicant used a particular words recited in the claim, e.g. "number based on signal characteristic". During patent examination, the pending claims must be given their broadest reasonable interpretation. In re Hyatt, 211 F.3d 1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once issued, will be interpreted more broadly than is justified. In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550- 51 (CCPA 1969). The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. In re Cortright, 165 F.3d 1353, 1359, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999). See MPEP 2111. Therefore, the Examiner is broadly and reasonably interpreted "the number based on signal characteristic" as "base station identifier" or "cell ID".

Secondly, Huomo discloses 37 and 42 that the user can then store that POI-based identifier so that subsequent entry into the area corresponding to that POI-based identifier will again present the associated service(s). The potential POI 124 (chosen location) essentially includes a predetermined base station identifier and cell-ID. In other words, the base station identifier and cell-ID of the entered service area (monitor location) is compared with the base station identifier and cell-ID of the POI. This comparison is performed to determine whether the monitor location is within chosen location. In addition, paragraph 45 shows that the signal

strength includes identifier of a base station. For the reasons above, the Examiner contends that the cited references show all limitations in the claim.

/DAI A PHUONG/
Primary Examiner, Art Unit 2644
Date: 2/6/13

Advisory Action Before the Filing of an Appeal Brief	**Application No.** *13/448,309*	**Applicant(s)** SHKEDI, ROY
	Examiner DAI A. PHUONG	**Art Unit** 2644

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 28 January 2013 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

NO NOTICE OF APPEAL FILED

1. ☒ The reply was filed after a final rejection. No Notice of Appeal has been filed. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance;

(2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114 if this is a utility or plant application. Note that RCEs are not permitted in design applications. The reply must be filed within one of the following time periods:

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action; or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

c) ☐ A prior Advisory Action was mailed more than 3 months after the mailing date of the final rejection in response to a first after-final reply filed within 2 months of the mailing date of the final rejection. The current period for reply expires months from the mailing date of *the prior Advisory Action* or SIX MONTHS from the mailing date of the final rejection, whichever is earlier.

Examiner Note: If box 1 is checked, check either box (a), (b) or (c). ONLY CHECK BOX (b) WHEN THIS ADVISORY ACTION IS THE FIRST RESPONSE TO APPLICANT'S FIRST AFTER-FINAL REPLY WHICH WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. ONLY CHECK BOX (c) IN THE LIMITED SITUATION SET FORTH UNDER BOX (c). See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) or (c) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendments filed after a final rejection, but prior to the date of filing a brief, will not be entered because

a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);

b) ☐ They raise the issue of new matter (see NOTE below);

c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).

4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).

5. ☐ Applicant's reply has overcome the following rejection(s): _____.

6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

7. ☒ For purposes of appeal, the proposed amendment(s): (a) ☐ will not be entered, or (b) ☒ will be entered, and an explanation of how the new or amended claims would be rejected is provided below or appended.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).

9. ☐ The affidavit or other evidence filed after the date of filing the Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing of good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).

10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: Please see attachment.

12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____

13. ☐ Other: _____.

STATUS OF CLAIMS

14. The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: .

Claim(s) objected to: .

Claim(s) rejected: 1-7,15,16,22,23,28 and 47-66.

Claim(s) withdrawn from consideration: .

/DAI A PHUONG/
Primary Examiner, Art Unit 2644

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Shkedi, Roy	Art Unit	:	2617
Serial No.	:	13/448,309	Examiner	:	Phuong, Dai
Filing Date	:	04/16/2012	Conf. No.	:	1020
Title	:	Signal Comparison-Based Location Determining Method			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – January 28, 2013
AFTER FINAL – EXPEDITED HANDLING REQUESTED

RESPONSE TO OFFICE ACTION AND INTERVIEW REPORT

Dear Sir: OK TO ENTER: /D.P./

In response to the Office Action dated September 28, 2012, which was made final, assignee requests reconsideration on the basis of the remarks beginning on page 2. Assignee thanks Examiner Phuong for the telephone interview today.

A terminal disclaimer is submitted, along with the accompanying fee.

A one-month extension of time is requested, and the fee accompanies this filing.

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	13448309
Filing Date	16-Apr-2012
First Named Inventor	Roy Shkedi
Attorney Docket Number	24-CON2
Title of Invention	Signal Comparison-Based Location Determining Method

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
BROADPHONE LLC	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

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as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

◉	Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.
○	I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.

○ Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

○ Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

◉ Applicant(s) status remains as SMALL ENTITY.

○ Applicant(s) status remains as other than SMALL ENTITY.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES

I certify, in accordance with 37 CFR 1.4(d)(4) that I am:

◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application

Registration Number 38918

○ A sole inventor

○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors

○ A joint inventor; all of whom are signing this request

○ The assignee of record of the entire interest that has properly made itself of record pursuant to 37 CFR 3.71

Signature	/Louis J. Hoffman/
Name	Louis J. Hoffman

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	13448309
Filing Date:	16-Apr-2012
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Filer:	Louis J. Hoffman/Donald Hertz
Attorney Docket Number:	24-CON2

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Statutory or terminal disclaimer	2814	1	80	80
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**80**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 13448309

Filing Date: 16-Apr-2012

Applicant/Patent under Reexamination: Shkedi et al.

Electronic Terminal Disclaimer filed on January 28, 2013

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt

EFS ID:	14812812
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	28-JAN-2013
Filing Date:	16-APR-2012
Time Stamp:	19:04:15
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$80
RAM confirmation Number	9246
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Electronic Terminal Disclaimer-Filed	eTerminal-Disclaimer.pdf	33650 ab95835ad3832a29238667833050 72fc490671dd	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30140 0961f14cdede27a59a1e1d7f5fb3c425a69e2ac4	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	63790		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Shkedi, Roy	Art Unit	:	2617
Serial No.	:	13/448,309	Examiner	:	Phuong, Dai
Filing Date	:	04/16/2012	Conf. No.	:	1020
Title	:	Signal Comparison-Based Location Determining Method			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – January 28, 2013
AFTER FINAL – EXPEDITED HANDLING REQUESTED

RESPONSE TO OFFICE ACTION AND INTERVIEW REPORT

Dear Sir:

In response to the Office Action dated September 28, 2012, which was made final, assignee requests reconsideration on the basis of the remarks beginning on page 2. Assignee thanks Examiner Phuong for the telephone interview today.

A terminal disclaimer is submitted, along with the accompanying fee.

A one-month extension of time is requested, and the fee accompanies this filing.

Remarks and Interview Report

The Office Action dated May 24, 2012, rejects claims 1-7, 15-16, 22-23, 28, and 47-66 (all of the pending claims) on the ground of obviousness-type double patenting over U.S. Patents 7,706,811 and 8,170,583. To overcome that rejection, assignee submits a terminal disclaimer and accompanying fee.

The Office Action also rejects all pending claims except dependent claim 4 under 35 U.S.C. §102 as anticipated by U.S. Pat. Pub. 2004/0203863 (Huomo), and rejects claim 4 under 35 U.S.C. §103 over Huomo in view of U.S. Pat. Pub. 2005/0159174 (Bar-On).[1]

As assignee's undersigned representative said in the interview held by telephone today, the subject matter of this application is thought to be a modest broadening of the subject allowed in the parent application (Serial No. 12/720,362, now U.S. Patent 8,170,583), specifically to expand the type of "signal characteristics" from just "signal strength" uniquely, and to expand the type of comparison from just subtraction and comparison to a threshold.

Assignee has clarified the term "number," in the claims, according to the above strategy, and explained in the previous response where that term has support in the specification. Briefly, to recap the previous response, as explained in specification ¶¶0056, 0100, and 0139 (for example), the phrase "number based on signal characteristics" is intended to refer to the output of any "formula" that serves as a comparison "metric."

However, based on the structure of the claims, the "number based on signal characteristics" cannot be a signal's identifier (ID), because most pending claims compare ***both*** the signal's ID ***and*** the "number based on signal characteristics." See independent claim 1, part (b), where part (i) compares "at least one ID," and part (ii) compares "at least one number based on signal characteristics"; and independent claim 57 (same; device counterpart).

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[1] The rejection of claim 4, at Office Action, p. 16, para. 6, refers to a base combination of Phatak and Farmer, but that is thought to be a typographic error, a stray residual left over from the previous Office Action, so assignee ignores reference to Phatak/Farmer.

Independent claim 58, part (b) compares "at least one number based on signal characteristics," but it does not require the additional comparison of signal IDs. Thus, it is a shorter claim. However, the "number based on signal characteristics" is intended to have the same interpretation as for claim 1, and it also cannot be a signal identifier.

Assignee respectfully submits that the broadening being done here does not change the distinction that caused the examiner to allow the parent application. Compared to the parent, the claims here omit limitations unnecessary to distinguish the cited prior art. However, limitations that distinguished the prior art remain.

The instant application's claims focus on methods of determining whether a mobile device is or is not at a user-selected location ("Am I there?"). The comparison in question, in all of the pending claims, is electronically comparing "at least one number based on [any] signal characteristic" between the monitored location (in other words, the current location) and a user-selected location.

Huomo does not disclose the comparison in the pending claims. In Huomo [0045], the reference discloses determining "***relative*** field strengths," so Huomo appears to teach comparing the current signal strength from one base station to the current signal strength from a second base station. But that is not a comparison of signal strength (or any other characteristic) at the monitored location to signal strength at a user-selected location, as defined in all of the claims.

In Huomo [0046], the reference discloses comparing "one or more identifiers as POIs" (points of interest). So, Huomo checks if the user is at a given location using the conventional technique of using signal ***identifiers***. This is, again, ***not*** comparing any metric based on signal strength, nor any other "number based on [any] signal characteristic," to see whether a mobile device is or is not at a user-selected location.

The Office Action argues (bottom of page 9) that Huomo meets the claim limitation of "at least one number based on the characteristic" because in Huomo, "the mobile terminal may store a predetermined number, or all of the cell-Ids, BSIC or other identifiers associated with the strongest field strength." Respectfully, this observation does not match the claim language, regardless of how broadly the claim phrase

"number based on signal characteristics" is interpreted, provided that it is given a reasonable interpretation (as must be done).

The "number based on signal characteristics" simply ***cannot*** be "cell-Ids." The claim term "signal characteristics" does not include a station ID; a station ID is not "measured" (see part (a)(iii) of claim 1); and a station ID is not "based on" any "signal characteristic." The distinction between station IDs and "number based on signal characteristic" is quite clear based on (1) the claim structure of claims 1 and 57 (as explained above), (2) applicant's specification, and (3) these and our earlier remarks.

The Office Action seems to confuse the usual English phrase "a number of items" with the claim term "a number based on signal characteristics," but those two phrases use "number" in different grammatical senses: The claim term refers to "number" in the sense of a metric or output of a formula, whereas the Office Action refers to the word in the sense of a counted quantity of items.

On the top half of page 10, the Office Action quotes from Huomo ¶¶0036, 0037, and 0045 and emphasizes Huomo's use of the terms "cell-ID" and "base station identifier." Again, this cannot meet the claim term "number based on signal characteristic" because IDs and identifiers are simply not "numbers" in the sense used in the claims based on any "signal characteristic."

In sum, Huomo simply does not disclose the claim limitations relating to comparing any metric based on signal strength (or any other characteristic) at the monitored location to the corresponding metric based on the signal characteristic at a user-selected location:

- Claim 1: "determining if a first monitored location … is within proximity of a location choses by the user …, as a result of electronically comparing … at least one number based on the [signal] characteristic of each of the … stations at the … monitored location with at least one number based on signal characteristics of each of the … stations at the location chosen by the user."
- Claim 58: "determining whether the … device is within proximity of the target location by electronically comparing at least one number based on

signal characteristics of the … signals with at least one number based on corresponding signal characteristics of … stations that have previously been identified as being within range of the target location."

Therefore, prompt reconsideration and allowance are respectfully requested.

Please feel free to telephone the undersigned if anything further is required to advance prosecution of this application.

Respectfully submitted,
BROADPHONE, LLC
by its attorney

Dated: January 28, 2013

/Louis J. Hoffman/
Louis J. Hoffman
Reg. No. 38,918

LOUIS J. HOFFMAN, P.C.
14301 North 87th Street
Suite 312
Scottsdale, Arizona 85260
(480) 948-3295

Electronic Patent Application Fee Transmittal

Application Number:	13448309
Filing Date:	16-Apr-2012
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Filer:	Louis J. Hoffman/Donald Hertz
Attorney Docket Number:	24-CON2

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with $0 paid	2251	1	75	75

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**75**

Electronic Acknowledgement Receipt

EFS ID:	14812890
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	28-JAN-2013
Filing Date:	16-APR-2012
Time Stamp:	19:08:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$75
RAM confirmation Number	9333
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Amendment After Final	13-01-28-Broadphone-CON2-RTOAF.pdf	71990 2a0faeac506a696c1bd1535da946655afe468145	no	5
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30381 c387bf94d06694c25774a5d190697d82b5423fbd	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	102371	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/448,309	04/16/2012	Roy Shkedi	24-CON2	1020

26362 7590 09/28/2012
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

EXAMINER
PHUONG, DAI

ART UNIT	PAPER NUMBER
2617	

NOTIFICATION DATE	DELIVERY MODE
09/28/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Louis@valuablepatents.com
donald@valuablepatents.com
shaelyn@valuablepatents.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	13/448,309	SHKEDI, ROY	
	Examiner	Art Unit	
	DAI A. PHUONG	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 07/02/12.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-7,15,16,22,23,28 and 47-66 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-7,15,16,22,23,28 and 47-66 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Argument

1. Applicant's arguments, filed 07/02/12, with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Claims 8-14, 17-21, 24-27, 29-46 have been canceled.

Claims 47-66 have been added.

Claims 1-7, 15-16, 22-23, 28 and 47-66 are pending.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

a. Claims 1-7, 15-16, 22-23, 28 and 47-66 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-12 of U.S. 7706811. Although the conflicting claims are not identical, they are not patentably

distinct from each other because all the claimed limitations recited in the present application are transparently found in the U.S. 7706811 with obvious wording variations.

Present Application	U.S. 7706811
Claim 1 (Currently amended) A location determining method, operable by a first portable RF communications device, the method comprising:	1. A Signal-Comparison Based Location-Determining Method, operable by at least one portable RF communications device in conjunction with at least two fixed-location service-area antenna stations capable of RF communication with the at least one device wherein the stations are substantially continuously operating, and the method is comprising the steps of:
(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a first plurality of fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with a received communications signal from each of the first plurality of antenna stations; and	(A) registering a selected location by causing a first port able RF communications device at the selected location (i) to receive an RF communications signal from a first plurality of local fixed-location service-area antenna stations, and (ii) to measure reception signal strength associated with the received signal from at least two of said first plurality of antenna stations;
(b) the first portable RF communications	(B) recording the selected location by

device determining if a first monitored location, monitored in accordance with part(a), is within proximity of a location chosen by a user of the first portable RF communications device, as a result of electronically comparing (i) the at least one ID at the first monitored location with at least one ID at of the location chosen by the user; and (ii) at least one number based on the characteristic of each of the first plurality of antenna stations —at the first monitored location with at least one number based on signal characteristics of each of the first plurality of antenna stations at the location chosen by the user.	electronically storing at least two of the reception signal strength measurements; (C) monitoring by causing said first portable RF communications device or a second portable RF communications device (i) to receive communications signals from said first plurality of local fixed-location service-area antenna stations or a second plurality of local fixed-location service-area antenna stations, and (ii) to measure reception signal strength associated with the signals; (D) determining if said first portable RF communications device or said second portable RF communications device of the monitoring step is at the selected location of the registering step by electronically comparing measurements in the monitoring step with the stored at least two measurements of the recording step, wherein the registering step includes identifying at least one ID within at least one of the received signals; and the recording step includes storing each of the

	at least one IDs with the reception signal strength measurement, and wherein the monitoring step includes identifying at least one ID within at least one of the received signals and the determining step includes electronically matching at least one ID of the monitoring step with the stored at least one ID of the recording step.

In addition, independent claim 1 of U.S. 7706811 is more narrow compare to independent claim 1 of this instant application. Hence, the scope of claims of the present application is now broader than Application 7706811.

Regarding claims 2-7, 15-16, 22-23, 28 and 47-66 are rejected for the same reasons set forth above.

b. Claims 1-7, 15-16, 22-23, 28 and 47-66 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of U.S. 8170583. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the claimed limitations recited in the present application are transparently found in the U.S. 8170583 with obvious wording variations.

Present Application	U.S. 8170583

Claim 1 (Currently amended) A location determining method, operable by a first portable RF communications device, the method comprising:	1. A signal-comparison based location-determining method, operable by a first portable RF communications device in conjunction with a plurality of fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating, the method comprising:
(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a first plurality of fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with a received communications signal from each of the first plurality of antenna stations; and	(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a first plurality of the antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring the signal strengths associated with a received communications signal from the first plurality of antenna stations; and
(b) the first portable RF communications device determining if a first monitored location, monitored in accordance with part(a), is within proximity of a location chosen by a user of the first portable RF communications device, as a result of electronically comparing (i) the at least one ID at the first monitored	(b) the first portable RF communication device determining if a monitored location is within proximity of a location chosen by a user of the

location with at least one ID at of the location chosen by the user; and (ii) at least one number based on the characteristic of each of the first plurality of antenna stations —at the first monitored location with at least one number based on signal characteristics of each of the first plurality of antenna stations at the location chosen by the user.	first portable RF communication device, as a result of (i) electronically comparing the at least one ID and at least one figure based on the signal strengths of the first plurality of antenna stations at the monitored location with the at least one ID and the at least one figure based on signal strengths of the first plurality of antenna stations at the location chosen by the user, and (ii) determining if the difference between the signal strengths measured at the monitored location and the signal strengths at the location chosen by the user is less than a predetermined threshold.

In addition, independent claim 1 of U.S. 8170583 is more narrow compare to independent claim 1 of this instant application. Hence, the scope of claims of the present application is now broader than U.S. 8170583.

Regarding claims 2-7, 15-16, 22-23, 28 and 47-66 are rejected for the same reasons set forth above.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 5-7, 15-16, 22-23, 28 and 47-66 rejected under 35 U.S.C. 102(b) as being anticipated by Huomo (U.S. 20040203863).

For claim 1, Huomo discloses a location determining method, operable by a first portable RF communications device, the method comprising:

(a) the first portable RF communications device (item 102 in fig. 1) monitoring its location by

(i) receiving communications signals from a first plurality of fixed-location service-area antenna stations (base station 104, 106 and 108 in fig. 1) capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating,

(ii) identifying at least one ID within at least one of the received communications signals (at least fig. 1 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively), and

(iii) measuring a signal characteristic associated with a received communications signal from each of the first plurality of antenna stations (at least fig. 1 and [0035]-[0047]. The mobile terminal 102 can perform signal strength measurements for the channel associated with BS 104, as well as other base stations such as BS 106, 108); and

(b) the first portable RF communications device determining if a first monitored location, monitored in accordance with part, is within proximity of a location chosen by a user of the first portable RF communications device, as a result of electronically comparing

(i) the at least one ID (at least **the cell-ID and/or BSIC)** at of the first monitored location with at least one ID at ~~a~~ location chosen by the user (at least fig. 4 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as **the cell-ID and/or BSIC**, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively. This information can be used by a mobile terminal-specific implementation to identify or "tag" the area served by one or more of the list of base stations as Points of Interest (POI). One or more actions, applications, services, etc. may then be linked to each POI. As described more fully below, **a user's re-entry into an area/cell 110, 112, 114** where a POI has been stored can automatically invoke an application(s) or other action(s) in accordance with the invention. Furthermore, a retail store or other company 122 may transmit a potential POI 124 to prompt the user of the mobile terminal 102 to consider accessing and/or storing that location identifier for current and/or future use. The potential POI 124 essentially includes a predetermined **base station identifier and/or cell-ID** that is measured and provided by the company 122, possibly with the assistance of the cell operator or a third party that is knowledgeable on how to measure the appropriate signals. If the user stores the POI 124, an action linked to that POI 124 will automatically be triggered **when the user returns to cell 110**); and

(ii) at least one number (the mobile terminal may store a predetermined number, or all, of the cell-Ids, BSIC or other identifiers associated with the strongest field strengths) based on the characteristic of each of the first plurality of antenna stations at the first monitored location with at least one number based on signal characteristics of each of the first

plurality of antenna stations at the location chosen by the user (at least fig. 4 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as **the cell-ID and/or BSIC**, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively. This information can be used by a mobile terminal-specific implementation to identify or "tag" the area served by one or more of the list of base stations as Points of Interest (POI). One or more actions, applications, services, etc. may then be linked to each POI. As described more fully below, **a user's re-entry into an area/cell 110, 112, 114** where a POI has been stored can automatically invoke an application(s) or other action(s) in accordance with the invention. Furthermore, a retail store or other company 122 may transmit a potential POI 124 to prompt the user of the mobile terminal 102 to consider accessing and/or storing that location identifier for current and/or future use. The potential POI 124 essentially includes a predetermined **base station identifier and/or cell-ID** that is measured and provided by the company 122, possibly with the assistance of the cell operator or a third party that is knowledgeable on how to measure the appropriate signals. If the user stores the POI 124, an action linked to that POI 124 will automatically be triggered **when the user returns to cell 110**. Moreover, the mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. However, ctions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 2, Huomo disclose the method of Claim 1 wherein the characteristic is the signal's strength (at least fig. 1 and [0035]-[0047]. The mobile terminal performs signal strength measurements (and bit error rate measurements) on the received signal on the channel is it currently operating on, as well as signal strength measurements on a list of candidate channels supplied to it by the BS.)

For claim 3, Huomo disclose the method of Claim 2 wherein the chosen location fingerprint on signal strengths were measured by the first portable RF communication device (at least fig. 1 and [0035]-[0047]. The mobile terminal performs signal strength measurements (and bit error rate

measurements) on the received signal on the channel is it currently operating on, as well as signal strength measurements on a list of candidate channels supplied to it by the BS.)

For claim 5, Huomo disclose the method of Claim 2 wherein the chosen location signal strengths and the at least one ID originated from a database of geographic locations and corresponding signal strengths and IDs (at least fig. 1 and [0035]-[0047]. The mobile terminal performs signal strength measurements (and bit error rate measurements) on the received signal on the channel is it currently operating on, as well as signal strength measurements on a list of candidate channels supplied to it by the BS.)

For claim 6, Huomo disclose the method of Claim 5 wherein the database is stored remotely from the first portable RF communications device (at least fig. 1 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively.)

For claim 7, Huomo disclose the method of Claim 5 wherein the database is built by a service provider (at least fig. 1 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively.)

For claim 15, Huomo disclose the method of Claim i wherein the at least one ID is a cell ID (at least fig. 1 and [0035]-[0047]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively.)

For claim 16, Huomo disclose the method of Claim 1 wherein the first portable RF communications device is a mobile phone ([0060]).

For claim 22, Huomo disclose the method of Claim i wherein the signal characteristic is the signal's arrival time (at least fig. 1 and [0035]-[0047] and [0070]. Mobile terminal 102 will receive

a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively. Furthermore, transmitting mediums include, but are not limited to, transmissions via wireless/radio wave communication networks).

For claim 23, Huomo disclose the method of Claim i wherein the signal characteristic is the signal's phase (at least fig. 1 and [0035]-[0047] and [0070]. Mobile terminal 102 will receive a unique base station identifier 116, such as the cell-ID and/or BSIC, from BS 104, as well as such identifiers 118, 120 from other base stations 106, 108 respectively. Furthermore, transmitting mediums include, but are not limited to, transmissions via wireless/radio wave communication networks).

For claim 28, Huomo disclose the method of Claim 1 wherein part (a) monitoring step is performed iteratively, with a predetermined time delay between successive iterations (at least fig. 1 and [0035]-[0047] and [0070]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 47, Huomo disclose the method of Claim 2 wherein the monitored location of the first portable RF communications device is determined to be within proximity of the chosen location if the at least one number based on the measured signal strengths at the monitored location and the at least one number based the measured signal strengths at the chosen location are related within a predetermined threshold (at least fig. 1 and [0035]-[0047] and [0070]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. However, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 48, Huomo disclose the method of Claim 1 wherein the at least one ID is a WiFi network ID ([0010] and [0040]-[0041]).

For claim 49, Huomo disclose the method of Claim 1 further comprising passing an indicia to a computer program application running on the first portable RF communications device indicating that the device **is one of**: (i) at the chosen location, or (ii) no longer at the chosen location (at least fig. 1 and [0035]-[0047]. When the user enters any of these locations, an action can be invoked, such as notifying the user that he/she is currently within a certain distance of one of the company franchises, notifying the user of the address or directions to the franchise, sale notices, provide electronic coupons, etc.)

For claim 50, Huomo disclose the method of Claim 1 further comprising launching a computer program application on the first portable RF communications device when the device is at the chosen location (at least fig. 1 and [0035]-[0047]. Another action may be to invoke a local application, such as a currency converter, calculator, audible alarm, e-mail application, etc. Yet another action may be to open a local browser, such as a Wireless Application Protocol (WAP) browser, and to access a predetermined URL via the browser. The type of action that can be associated with a particular POI is virtually limitless.)

For claim 51, Huomo disclose the method of Claim i wherein part (b) is performed iteratively, with a predetermined time delay between successive iterations (at least fig. 1 and [0035]-[0047] and [0070]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 52, Huomo disclose the method of Claim i wherein part (b) is performed depending on the rate of change of the user's location (at least [0026]. The invention is particularly beneficial for mobile terminal users who expect to return (whether frequently or infrequently) to one or more particular locations, as the mobile terminal itself will recognize that it has returned to such a location and can automatically trigger actions, applications, services, etc. that are useful at that location.)

For claim 53, Huomo disclose the method of Claim 1 wherein part (b) is performed upon request from a computer program application running on the first portable RF communications device (at least fig. 1, [0026] and [0035]-[0047]. When the mobile terminal moves from place to place and recognizes that it is within a wireless area corresponding to a stored point of interest, the mobile device automatically initiates an action that has been linked to the corresponding radio frequency identifier for that wireless area.)

For claim 54, Huomo disclose the method of Claim 1 wherein part (b) is performed upon the first portable RF communications device switching the base station with which it is registered (at least fig. 1, [0026]-[0029] and [0035]-[0047]. When the mobile terminal moves from place to place and recognizes that it is within a wireless area corresponding to a stored point of interest, the mobile device automatically initiates an action that has been linked to the corresponding radio frequency identifier for that wireless area. Moreover, when a mobile terminal moves from one cell to another, an automatic channel/frequency change will occur, which is generally referred to as "handoff" or "handover.")

For claim 55, Huomo disclose the method of Claim i wherein the at least one number based on the signal characteristic of each of the first plurality of antenna stations is more than one number, each of which number is based on the signal characteristic of only one of the first plurality of the antenna stations (at least fig. 1 and [0035]-[0047]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 56, Huomo disclose the method of Claim i wherein the at least one number based on the signal characteristic of each of the first plurality of antenna stations is one number based on the signal characteristic of more than one of the first plurality of the antenna stations (at least fig. 1 and [0035]-[0047]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs

or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 57, this claim is similar to claim 1. Therefore, the claim is also rejected for the same reasons in claim 1.

For claim 58, this claim is similar to claim 1. Therefore, the claim is also rejected for the same reasons in claim 1.

For claim 59, this claim is similar to claim 51. Therefore, the claim is also rejected for the same reasons in claim 51.

For claim 60, Huomo disclose the method of Claim 58 wherein the portable RF communications device is determined to be within proximity of the target location if the at least one number based on the signal characteristics of the first plurality of communications signals and at least one number based on corresponding signal characteristics of a second plurality of antenna stations are related within a predetermined threshold (at least fig. 1 and [0035]-[0047]. The mobile terminal may store a predetermined number, **or all**, of the cell-IDs or other identifiers associated with the strongest field strengths. Then, actions can be triggered based at least in part on the relative field strengths of these multiple signals, the identifiers of which are all available within the mobile terminal.)

For claim 61, this claim is similar to claim 49. Therefore, the claim is also rejected for the same reasons in claim 49.

For claim 62, this claim is similar to claim 50. Therefore, the claim is also rejected for the same reasons in claim 50.

For claim 63, this claim is similar to claim 51. Therefore, the claim is also rejected for the same reasons in claim 51.

For claim 64, this claim is similar to claim 52. Therefore, the claim is also rejected for the same reasons in claim 52.

For claim 65, this claim is similar to claim 53. Therefore, the claim is also rejected for the same reasons in claim 53.

For claim 66, this claim is similar to claim 54. Therefore, the claim is also rejected for the same reasons in claim 54.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Huomo (U.S. 20040203863) in view of Bar-On et al. (Pub. No. 20050159174).

For claim 2, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. However, the combination of Phatak et al. and Farmer et al. disclose do not teach wherein the chosen location signal strengths were measured by a second portable RF communication device.

In the same field of endeavor, Bar-On et al. disclose wherein the chosen location signal strengths were measured by a second portable RF communication device (fig. 1 and abstract, [0008] and [0013]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Huomo by specifically including the chosen location signal strengths were measured by a second portable RF communication device, as taught by Bar-On et al., the motivation being in order calculate the location of the target MS (N) from information obtained from the received signals.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

> A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

> Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dai A Phuong whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/DAI A PHUONG/

Primary Examiner, Art Unit 2617
Date: 9/20/12

Notice of References Cited	Application/Control No. 13/448,309	Applicant(s)/Patent Under Reexamination SHKEDI, ROY	
	Examiner DAI A. PHUONG	Art Unit 2617	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-			
*	B	US-2004/0203863	10-2004	Huomo, Heikki	455/456.1
*	C	US-2005/0159174	07-2005	Bar-On et al.	455/456.6
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/18/2012	09/20/2012							
	1	✓	✓							
	2	✓	✓							
	3	✓	✓							
	4	✓	✓							
	5	✓	✓							
	6	✓	✓							
	7	✓	✓							
	8	-	-							
	9	-	-							
	10	-	-							
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	12	✓	-							
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	21	✓	-							
	22	✓	✓							
	23	✓	✓							
	24	-	-							
	25	-	-							
	26	-	-							
	27	-	-							
	28	✓	✓							
	29	-	-							
	30	✓	-							
	31	✓	-							
	32	✓	-							
	33	-	-							
	34	-	-							
	35	-	-							
	36	-	-							

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/18/2012	09/20/2012							
	37	-	-							
	38	-	-							
	39	-	-							
	40	-	-							
	41	-	-							
	42	-	-							
	43	-	-							
	44	-	-							
	45	✓	-							
	46		-							
	47		✓							
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	61		✓							
	62		✓							
	63		✓							
	64		✓							
	65		✓							
	66		✓							

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

SEARCHED

Class	Subclass	Date	Examiner
455	404.2, 432.1, 435.1-453, 456.1-456.3	05/18/12	ad
370	328-333	5/18/12	ad
	East search updated	9/20/12	ad

SEARCH NOTES

Search Notes	Date	Examiner
Inventor Search	5/18/12	ad
Inventor search updated	9/20/12	ad

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner
			ad

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/448,309	04/16/2012	Roy Shkedi	24-CON2

CONFIRMATION NO. 1020

PUBLICATION NOTICE

26362
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

OC000000055873088

Title: Signal Comparison-Based Location Determining Method

Publication No.US-2012-0202521-A1
Publication Date:08/09/2012

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Shkedi, Roy	Art Unit	:	2617
Serial No.	:	13/448,309	Examiner	:	Phuong, Dai
Filing Date	:	04/16/2012	Conf. No.	:	1020
Title	:	Signal Comparison-Based Location Determining Method			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – July 2, 2012

RESPONSE TO OFFICE ACTION

Dear Sir:

In response to the Office Action dated May 24, 2012, assignee requests entry of the following amendments and consideration of the following remarks.

Amendments to the claims begin on page 2.

Remarks begin on page 8.

The application as amended includes thirty-two (32) total claims, three (3) of which are independent claims. Assignee has previously paid for twenty (20) total claims and three (3) independent claims. Accordingly, excess claims fees in the amount of $360 (12 claims at $30/claim) are submitted concurrently. No extension of time is requested.

Amendments

IN THE CLAIMS:

Please amend the claims as follows:

Claim 1 (Currently amended) A ~~signal-comparison based~~ location-determining method, operable by a first portable RF communications device ~~in conjunction with at least two fixed location service-area antenna stations capable of RF communication with the device wherein the stations are substantially continuously operating~~, the method comprising ~~the steps of~~:

(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a first plurality of ~~local~~ fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with [[the]] a received communications signal[[s]] from each of the first plurality of antenna stations; and

(b) the first portable RF communications device determining if [[the]] a first monitored location, monitored in accordance with part(a), is within proximity of [[to]] a location chosen by a user of the first portable RF communications device, as a result of [[by]] electronically comparing (i) the at least one ID at ~~a fingerprint of~~ the first monitored location with at least one ID at ~~a fingerprint of~~ the ~~chosen~~ location chosen by the user;~~, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location~~ and (ii) at least one number ~~figure which is~~ based on [[a]] the characteristic of each of [[a]] the first plurality of antenna stations ~~signal received~~ at the first monitored location with at least one number based on signal characteristics of each of the first plurality of antenna stations at the location chosen by the user.

Claim 2 (Currently amended) The method of Claim 1 wherein the characteristic ~~of a signal at the location~~ is the signal's strength~~, and the location fingerprint is based on at least one signal strength at the location~~.

Claim 3 (Currently amended) The method of Claim 2 wherein the chosen location ~~fingerprint is based on~~ signal strengths were measured by the first portable RF communication device.

Claim 4 (Currently amended) The method of Claim 2 wherein the chosen location ~~fingerprint is based on~~ signal strengths were measured by a second portable RF communication device~~, different from the first portable RF communication device~~.

Claim 5 (Currently amended) The method of Claim 2 wherein the chosen location ~~fingerprint is based on~~ signal strengths and the at least one ID originated[[ing]] from a database of geographic locations and corresponding ~~fingerprints~~ signal strengths and IDs.

Claim 6 (Currently amended) The method of Claim 5 wherein the database is stored remotely~~, and not on~~ from the first portable RF communications device.

Claim 7 (Original) The method of Claim 5 wherein the database is built by a service provider.

Claims 8-14 (Cancelled)

Claim 15 (Original) The method of Claim 1 wherein the at least one ID is a cell ID.

Claim 16 (Currently amended) The method of Claim 1 wherein the first portable RF communications device is a mobile phone.

Claims 17-21 (Cancelled)

Claim 22 (Currently amended) The method of Claim 1 wherein the signal characteristic ~~of a signal at the location~~ is the signal's arrival time~~, and the location's fingerprint comprises at least one arrival time at the location of a signal broadcasted by nearby cell towers and the ID of at least one of the cell towers~~.

Claim 23 (Currently amended) The method of Claim 1 wherein the signal characteristic ~~of a signal at the location~~ is the signal's phase~~, and the location's~~

~~fingerprint comprises at least one phase at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers~~.

Claims 24-27 (Cancelled)

Claim 28 (Currently amended) The method of Claim 1 wherein part (a) ~~the monitoring step~~ is performed iteratively, with a predetermined time delay between successive iterations ~~such that data from the monitoring step is used only if a substantial portion of the successive measurements are alike within a predetermined threshold~~.

Claims 29-46 (Cancelled)

Claim 47 (New) The method of Claim 2 wherein the monitored location of the first portable RF communications device is determined to be within proximity of the chosen location if the at least one number based on the measured signal strengths at the monitored location and the at least one number based the measured signal strengths at the chosen location are related within a predetermined threshold.

Claim 48 (New) The method of Claim 1 wherein the at least one ID is a WiFi network ID.

Claim 49 (New) The method of Claim 1 further comprising passing an indicia to a computer program application running on the first portable RF communications device indicating that the device is one of: (i) at the chosen location, or (ii) no longer at the chosen location.

Claim 50 (New) The method of Claim 1 further comprising launching a computer program application on the first portable RF communications device when the device is at the chosen location.

Claim 51 (New) The method of Claim 1 wherein part (b) is performed iteratively, with a predetermined time delay between successive iterations.

Claim 52 (New) The method of Claim 1 wherein part (b) is performed depending on the rate of change of the user's location.

Claim 53 (New) The method of Claim 1 wherein part (b) is performed upon request from a computer program application running on the first portable RF communications device.

Claim 54 (New) The method of Claim 1 wherein part (b) is performed upon the first portable RF communications device switching the base station with which it is registered.

Claim 55 (New) The method of Claim 1 wherein the at least one number based on the signal characteristic of each of the first plurality of antenna stations is more than one number, each of which number is based on the signal characteristic of only one of the first plurality of the antenna stations.

Claim 56 (New) The method of Claim 1 wherein the at least one number based on the signal characteristic of each of the first plurality of antenna stations is one number based on the signal characteristic of more than one of the first plurality of the antenna stations.

Claim 57 (New) A portable RF communications device comprising an antenna, a user interface, and a storage device, wherein the storage device contains computer program code that, when executed by the portable device, controls the portable device to cause the portable device to perform a location-determining method, the method comprising:

(a) monitoring the location of the portable device by (i) receiving with the antenna communications signals from a first plurality of fixed-location service-area antenna stations capable of RF communication with the portable device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with a received communications signal from each of the first plurality of antenna stations; and

(b) determining if a first monitored location, monitored in accordance with part (a), is within proximity of a location entered by a user of the portable device on the user interface, as a result of electronically comparing (i) the at least

one ID at the first monitored location with at least one ID at the location chosen by the user; and (ii) at least one number based on the signal characteristics of each of the first plurality of antenna stations at the first monitored location with at least one number based on signal characteristics of each of the first plurality of antenna stations at the location chosen by the user.

Claim 58 (New) A method of determining whether a portable RF communications device is present at a target location, the method comprising:

with the portable RF communications device automatically:

(a) receiving a plurality of communications signals, each from one of a first plurality of antenna stations within range of the portable RF communications device, wherein the antenna stations are fixed-location service-area antenna stations and are substantially continuously operating; and

(b) determining whether the portable RF communications device is within proximity of the target location by electronically comparing at least one number based on signal characteristics of the first plurality of communications signals with at least one number based on corresponding signal characteristics of a second plurality of antenna stations that have previously been identified as being within range of the target location.

Claim 59 (New) The method of Claim 58 wherein part (a) is performed iteratively, with a predetermined time delay between successive iterations.

Claim 60 (New) The method of Claim 58 wherein the portable RF communications device is determined to be within proximity of the target location if the at least one number based on the signal characteristics of the first plurality of communications signals and at least one number based on corresponding signal characteristics of a second plurality of antenna stations are related within a predetermined threshold.

Claim 61 (New) The method of Claim 58 further comprising passing an indicia to a computer program application running on the portable RF communications

device indicating that the device is one of: (i) at the chosen location, or (ii) no longer at the chosen location.

Claim 62 (New) The method of Claim 58 further comprising launching a computer program application on the portable RF communications device when the device is at the chosen location.

Claim 63 (New) The method of Claim 58 wherein part (b) is performed iteratively, with a predetermined time delay between successive iterations.

Claim 64 (New) The method of Claim 58 wherein part (b) is performed depending on the rate of change of the user's location.

Claim 65 (New) The method of Claim 58 wherein part (b) is performed upon request from a computer program application running on the portable RF communications device.

Claim 66 (New) The method of Claim 58 wherein part (b) is performed upon the portable RF communications device switching the base station with which it is registered.

Remarks

I. Summary

The Office Action dated May 24, 2012, rejects claims 1-3, 5-7, 12, 15-16, 18-19, 21-23, 28, 30-32, and 45 on the ground of obviousness-type double patenting over U.S. Patents 7,706,811 and 8,170,583, objects to claims 1 and 45 because of certain informalities, rejects claims 1, 30, and 45 under 35 U.S.C. §112 ¶ 2, rejects claims 1-3, 5-7, 12, 15-16, 18-19, 21-23, 28, 30-32 and 45 under 35 U.S.C. §103 over U.S. Published Patent Application 2008/0039114 to Phatak, et al. in view of U.S. Published Patent Application 2010/0156706 to Farmer, et al., and rejects claim 4 under 35 U.S.C. §103 over Phatak in view of Farmer and in further view of U.S. Published Patent Application 2005/0159174 to Bar-On, et al.

In the parent application, the examiner declined to permit certain amendments to the pending claims after final that would have put the claims into a form similar to Claim 1 here. The examiner promised to consider the question of patentability of the proposed modified claim with a fresh mind, in the context of a continuation, if assignee elected to file one. Claim 1 as now amended is that variation. The attached appendix shows a comparison of now amended Claim 1 to issued claim 1 of U.S. Patent 8,170,583. The changes are, for the most part, described as follows:

A. First, assignee has broadened the "signal characteristic." In amended Claim 1, the term "signal characteristic" is intended to refer to either signal strength (dependent Claim 2) or other measured characteristics (e.g., Claim 22 or Claim 23). Several alternative examples of possible signal characteristics are recited in the specification.

B. Second, assignee has separated the ID comparison from the signal strength comparison. "Signal characteristic" is intended to be distinct from signal ID (identifier), which is separately discussed in the revised claim language through use of the "(i), (ii)" structure in part (b).

C. Third, assignee has used the word "number." The word "number" is used instead of the word "figure" and corresponds to the terminology in the specification.

The specification uses the word "number" in [¶0100], for example, in connection with the specific case of subtraction of signal strengths specifically addressed in a dependent claim indicated allowable in the parent. As the specification explains, the "number based on …" is intended to refer to the output of any "formula," including but not limited to a difference formula, that serves as a comparison "metric" (including "logical comparisons, arithmetically threshold (rounded) logical comparisons, arithmetic, probabilistic, fuzzy logic, neural network enabled, [or] heuristic" [¶0056], or "determinations that are based on derivatives, integrals, statistical metrics, mathematical normalizations, correlation functions, [or] heuristic convolution functions" [¶0139]).

D. Fourth, assignee has broadened the comparison types. Assignee has removed the requirement (formerly a dependent claim in the parent) that the device decides whether it is at a location based on the specific method of a difference in signal strengths being less then a threshold.

To avoid any issue, assignee submits a terminal disclaimer to overcome the obviousness-type double patenting rejections. Assignee traverses the remaining rejections. After the amendments, claims 1-7, 15, 16, 22, 23, 28, and 47-58 are pending.

II. The cited references

Phatak discloses systems and methods for determining the location of a mobile device by matching the signal strength of received wireless signals to the expected or calculated signal strength of wireless signals at a known location.

Farmer discloses looking up locally unique base station identifiers contained in received wireless signals to determine the location of a mobile device. In Farmer's system, the base station identifiers that are used are not globally unique; thus the carrier frequency of the base station is used as a secondary look-up key to verify the identity of the base station. Carrier frequency does not vary with distance from the base station and thus is only useful in determining a base station's identity.

Bar-On discloses systems and methods for determining the location of a mobile device by triangulation of wireless signals sent from the mobile device and received by a plurality of other mobile devices.

Phatak, Farmer, and Bar-On all disclose methods of determining where a mobile device is ("where am I?"). On the other hand, the instant application focuses on methods of determining whether a mobile device is or is not at a specified location ("am I there?").

None of the references cited in this application (or in the parent applications) disclose comparing numbers calculated from (or equal to) signal strength (or other signal characteristics) from nearby antenna stations to corresponding numbers from antenna stations near a specific location to determine **whether or not** the device **is at the specific location**, as claimed.

The primary reference in the immediate parent application (U.S. Patent Application Serial No. 12/720,362, now U.S. Patent 8,170,583) was US Published Patent Application 2004/0203863 to Huomo. As the Office seemed to recognize in allowing then-dependent claim 29 in the immediate parent application, Huomo does not disclose the "comparing numbers" limitation either.

The claims as presented here remain distinct from Huomo. For example, as to amended Claim 1, Huomo does not disclose determining whether a mobile device is or is not at a specified location by BOTH electronically comparing a monitored ID and an ID at a user-selected location AND ALSO electronically comparing "at least one number based on [any] signal characteristic" between the monitored location and the user-selected location. See Claim 1, part (b), subparts (i) and (ii) for the specific claim language being pointed to by this summary paragraph (which is not intended to further narrow or restrict the claim language).

Claims 47-56 are dependent on Claim 1. Claim 57 is an apparatus counterpart to Claim 1.

Claim 58 is a variation of Claim 1. Huomo, alone or in combination, likewise does not disclose determining whether a mobile device is or is not at a specified location

by electronically comparing "at least one number based on [any] signal characteristic." See Claim 58 part (b). Likewise Phatak, Farmer and Bar-on, cited in the office action here, do not disclose that feature either.

Prompt reconsideration and allowance are respectfully requested.

Please feel free to telephone the undersigned if anything further is required to advance prosecution of this application.

Respectfully submitted,
BROADPHONE, LLC
by its attorney

Dated: July 2, 2012

/Louis J. Hoffman/
Louis J. Hoffman
Reg. No. 38,918

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Scottsdale, Arizona 85260
(480) 948-3295

Appendix to Remarks

Claim 1 A ~~signal comparison based~~ location-determining method, operable by a first portable RF communications device ~~in conjunction with a plurality of fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating~~, the method comprising:

(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a first plurality of ~~the~~ fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring ~~the~~ a signal ~~strengths~~ characteristic associated with a received communications signal from each of the first plurality of antenna stations; and

(b) the first portable RF communication device determining if a first monitored location, monitored in accordance with part(a), is within proximity of a location chosen by a user of the first portable RF communication device, as a result of ~~(i)~~ electronically comparing (i) the at least one ID ~~and at least one figure based on the signal strengths of the first plurality of antenna stations~~ at the monitored location with ~~the~~ at least one ID ~~and the at least one figure based on signal strengths of the first plurality of antenna stations~~ at the location chosen by the user[[,]]; and (ii) at least one number based on the characteristic of each of the first plurality of antenna stations at the first monitored location with at least one number based on signal characteristics of each of the first plurality of antenna stations at the location chosen by the user~~determining if the difference between the signal strengths measured at the monitored location and the signal strengths at the location chosen by the user is less than a predetermined threshold~~.

Electronic Patent Application Fee Transmittal

Application Number:	13448309
Filing Date:	16-Apr-2012
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Filer:	Louis J. Hoffman/Donald Hertz
Attorney Docket Number:	24-CON2

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	2202	12	30	360
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**360**

Electronic Acknowledgement Receipt

EFS ID:	13165150
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	02-JUL-2012
Filing Date:	16-APR-2012
Time Stamp:	21:16:59
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$360
RAM confirmation Number	7511
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Amendment/Req. Reconsideration-After Non-Final Reject	12-07-02-Broadphone-CON2-RTOA.pdf	148263 0dc694e95d42ab9b1b74c9b41bbf4ac28909af36	no	12
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30190 391b8f1ec9ac2f45731cd464ad8e9284080c90b0	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	178453	

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
13/448,309	04/16/2012	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☒ RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT 07/02/2012

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 32	Minus	** 20	= 12	X $30 =	360	OR	X $ =	
Independent (37 CFR 1.16(h))	* 3	Minus	***3	= 0	X $125 =	0	OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE	360	OR	TOTAL ADD'L FEE	

AMENDMENT

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/LAJUAN HICKSON/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/448,309	04/16/2012	Roy Shkedi	24-CON2	1020

26362 7590 05/24/2012
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

EXAMINER
PHUONG, DAI

ART UNIT	PAPER NUMBER
2617	

NOTIFICATION DATE	DELIVERY MODE
05/24/2012	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

Louis@valuablepatents.com
donald@valuablepatents.com
shaelyn@valuablepatents.com

PTOL-90A (Rev. 04/07)

Office Action Summary	Application No.	Applicant(s)	
	13/448,309	SHKEDI, ROY	
	Examiner	Art Unit	
	DAI A. PHUONG	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2012*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-7,12,15,16,18,19,21-23,28,30-32 and 45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-7,12,15,16,18,19,21-23,28,30-32 and 45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is response to preliminary amendment filed on 04/16/2012 in which claims 8-11, 13-14, 17, 20, 24-27, 29 and 33-44. There are twenty (20) total claims which include three independent claims (claims 1, 30 and 45).

Claims 1-3, 5-7, 12, 15-16, 18-19, 21-23, 28, 30-32 and 45 are pending.

Information Disclosure Statement

2. The references listed in the Information Disclosure Statement filed on 04/16/2012 have been considered by the examiner (see attached PTO-1449 form or PTO/SB/08A and 08B).

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

a. Claims 1-3, 5-7, 12, 15-16, 18-19, 21-23, 28, 30-32 and 45 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over

claims 1-12 of U.S. 7706811. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the claimed limitations recited in the present application are transparently found in the U.S. 7706811 with obvious wording variations.

Present Application	U.S. 7706811
1. A signal-comparison based location-determining method, operable by a first portable RF communications device in conjunction with at least two fixed location service-area antenna stations capable of RF communication with the device wherein the stations are substantially continuously operating, the method comprising the steps of: (a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the	1. A Signal-Comparison Based Location-Determining Method, operable by at least one portable RF communications device in conjunction with at least two fixed-location service-area antenna stations capable of RF communication with the at least one device wherein the stations are substantially continuously operating, and the method is comprising the steps of: (A) registering a selected location by causing a first port able RF communications device at the selected location (i) to receive an RF communications signal from a first plurality of local fixed-location service-area antenna stations, and (ii) to measure reception signal strength associated with the received signal from at least two of said first plurality of

communications signals; (b) the first portable RF communication device determining if the monitored location is within proximity to a location chosen by a user of the first portable RF communication device, by electronically comparing a fingerprint of the monitored location with a fingerprint of the chosen location, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location.	antenna stations; (B) recording the selected location by electronically storing at least two of the reception signal strength measurements; (C) monitoring by causing said first portable RF communications device or a second portable RF communications device (i) to receive communications signals from said first plurality of local fixed-location service-area antenna stations or a second plurality of local fixed-location service-area antenna stations, and (ii) to measure reception signal strength associated with the signals; (D) determining if said first portable RF communications device or said second portable RF communications device of the monitoring step is at the selected location of the registering step by electronically comparing measurements in the monitoring step with the stored at least two measurements of the recording step, wherein the registering step includes identifying at least one ID within at least one

	of the received signals; and the recording step includes storing each of the at least one IDs with the reception signal strength measurement, and wherein the monitoring step includes identifying at least one ID within at least one of the received signals and the determining step includes electronically matching at least one ID of the monitoring step with the stored at least one ID of the recording step.

In addition, independent claim 1 of U.S. 7706811 is more narrow compare to independent claim 1 of this instant application. Hence, the scope of claims of the present application is now broader than Application 7706811.

Regarding claims 2-3, 5-7, 12, 15-16, 18-19, 21-23, 28, 30-32 and 45 are rejected for the same reasons set forth above.

b. Claims 1-3, 5-7, 12, 15-16, 18-19, 21-23, 28, 30-32 and 45 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of U.S. 8170583. Although the conflicting claims are not identical, they are not patentably distinct from each other because all the claimed limitations recited in the

present application are transparently found in the U.S. 8170583 with obvious wording variations.

Present Application	U.S. 8170583
1. A signal-comparison based location-determining method, operable by a first portable RF communications device in conjunction with at least two fixed location service-area antenna stations capable of RF communication with the device wherein the stations are substantially continuously operating, the method comprising the steps of: (a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the communications signals; (b) the first portable RF communication device	1. A signal-comparison based location-determining method, operable by a first portable RF communications device in conjunction with a plurality of fixed-location service-area antenna stations capable of RF communication with the first portable RF communications device wherein the antenna stations are substantially continuously operating, the method comprising: (a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a first plurality of the antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring the signal strengths associated with a received communications signal from the first plurality of antenna stations; and

determining if the monitored location is within proximity to a location chosen by a user of the first portable RF communication device, by electronically comparing a fingerprint of the monitored location with a fingerprint of the chosen location, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location.	(b) the first portable RF communication device determining if a monitored location is within proximity of a location chosen by a user of the first portable RF communication device, as a result of (i) electronically comparing the at least one ID and at least one figure based on the signal strengths of the first plurality of antenna stations at the monitored location with the at least one ID and the at least one figure based on signal strengths of the first plurality of antenna stations at the location chosen by the user, and (ii) determining if the difference between the signal strengths measured at the monitored location and the signal strengths at the location chosen by the user is less than a predetermined threshold.

In addition, independent claim 1 of U.S. 8170583 is more narrow compare to independent claim 1 of this instant application. Hence, the scope of claims of the present application is now broader than U.S. 8170583.

Regarding claims 2-3, 5-7, 12, 15-16, 18-19, 21-23, 28, 30-32 and 45 are rejected for the same reasons set forth above.

Claim Objections

4. Claims 1 and 45 are objected to because of the following informalities:

Regarding claim 1, line 3 recites "the device". It should be corrected as - - the first portable RF communication device - -.

Regarding claim 45, lines 3-18 recite "the device". It should be corrected as - - the first portable RF communication device - -.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-3, 5-7, 12, 15-16, 18-19, 21-23, 28, 30-32 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1 and 45, lines 14-18 recite "the fingerprint" and "the location". It is unclear whether "the fingerprint" and "the location" are "fingerprint of the monitor location" or "fingerprint of the chosen location".

Regarding claim 30, lines 5-7 recites "the location". It is unclear whether "the location" is the "geographic locations" or "given location".

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-3, 5-7, 12, 15-16, 18-19, 21-23, 28, 30-32 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Phatak et al. (Pub. No. 20080039114) in view of Farmer et al. (Pub. No. 20100156706).

For claim 1, Phatak et al. disclose a signal-comparison based location-determining method, operable by a first portable RF communications device in conjunction with at least two fixed location service-area antenna stations capable of RF communication with the device wherein the stations are substantially continuously operating, the method comprising the steps of:

(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the communications signals ([0037] to [0045]. A wireless device may measure signal strengths of a serving base station and neighboring base stations identified by base station cell IDs. The location of the wireless device can be estimated by finding intersections of the coverage areas of the base stations whose cell IDs are reported by the cell phone);

However, Phatak et al. do not disclose (b) the first portable RF communication device determining if the monitored location is within proximity to a location chosen by a user of the first portable RF communication device, by electronically comparing a fingerprint of the monitored location with a fingerprint of the chosen location, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location.

In the same field of endeavor, Farmer et al. disclose (b) the first portable RF communication device determining if the monitored location is within proximity to a location chosen by a user of the first portable RF communication device, by electronically comparing a fingerprint of the monitored location with a fingerprint of the chosen location, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location ([0042] to [0045]. The mobile station receives the BSIC/PSC identifier and carrier frequency of the current base station 44. The MS searches the position database 42 for the BSIC/PSC identifier and carrier frequency 46 to determine if they have yet been initialized within the database 48. Furthermore, the mobile station compares the cell ID located in the database with the cell ID received from the base station 54 to ensure that the BSIC/PSC identifier and carrier frequency are that of a known base station with which the MS communicated at an earlier time, rather than that of a base station elsewhere in the world that was not been previously encountered when determining position. If the cell ID received from the current base station matches that in the

position database associated with the current BSIC/PSC identifier and carrier frequency, then the position database is validated for that particular cell ID-BSIC/PSC-frequency combination, as well as for the cell ID-BSIC/PSC-frequency combinations stored in the position database that are in geographical proximity to that cell ID).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Farmer et al. by specifically including (b) the first portable RF communication device determining if the monitored location is within proximity to a location chosen by a user of the first portable RF communication device, by electronically comparing a fingerprint of the monitored location with a fingerprint of the chosen location, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location, as taught by Farmer et al., the motivation being in order to ensure that the BSIC/PSC identifier and carrier frequency are that of a known base station with which the MS communicated at an earlier time, rather than that of a base station elsewhere in the world that was not been previously encountered when determining position.

For claim 2, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. Furthermore, Phatak et al. disclose wherein the characteristic of a signal at the location is the signal's strength, and the location fingerprint is based on at least one signal strength at the location ([0037] to [0040]).

For claim 3, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 2. Furthermore, Phatak et al. disclose wherein the chosen location fingerprint is based on signal strengths measured by the first portable RF communication device ([0037] to [0040]).

For claim 5, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 2. Furthermore, Farmer et al. disclose wherein the chosen location fingerprint is based on signal strengths originating from a database of geographic locations and corresponding fingerprints ([0042] to [0045]).

For claim 6, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 5. Furthermore, Phatak et al. disclose wherein the database is stored remotely, and not on the first portable RF communication device ([0037] to [0040]).

For claim 7, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 5. Furthermore, Phatak et al. disclose wherein the database is built by a service provide r([0037] to [0040]).

For claim 12, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 5. Furthermore, Farmer et al. disclose the chosen location fingerprint is taken from the database of geographic locations and corresponding fingerprints using a geographic location entered by the first portable RF communication device user as his chosen location ([0042] to [0045]).

For claim 15, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. Furthermore, Phatak et al. disclose wherein the at least one ID is a cell ID ([0037] to [0040]).

For claim 16, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. Furthermore, Phatak et al. disclose wherein the first portable RF communication device is a mobile phone ([0037] to [0040]).

For claim 18, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. Furthermore, Phatak et al. disclose wherein the characteristic of a signal at the location is the signal's strength, and the location's fingerprint comprises at least one signal strength at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers ([0037] to [0040]).

For claim 19, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. Furthermore, Farmer et al. disclose wherein a location's fingerprint comprises at least one relation between signal characteristics at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers ([0042] to [0045]).

For claim 21, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. Furthermore, Farmer et al. disclose wherein the characteristic of a signal at the location is the signal's strength, and the location's fingerprint is the result of a calculation using signal strengths ([0004] and [0042]-[0060]).

For claim 22, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. Furthermore, Farmer et al. disclose wherein the characteristic of a signal at the location is the signal's arrival time, and the location's fingerprint comprises at least one arrival time at the location of a signal broadcasted by nearby cell towers and the ID of at least one of the cell towers ([0004] and [0042]-[0060]).

For claim 23, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. Furthermore, Farmer et al. disclose wherein the characteristic of a signal at the location is the signal's phase, and the location's fingerprint comprises at least one phase at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers ([0004] and [0042]-[0060]).

For claim 28, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. Furthermore, Farmer et al. disclose wherein the monitoring step is performed iteratively, with a predetermined time delay between successive iterations such that data from the monitoring step is used only if a substantial portion of the successive measurements are alike within a predetermined threshold ([0004] and [0042]-[0060]).

Regarding claim 30, this claim is rejected for the same reason as set forth in claim 1.

Regarding claim 31, this claim is rejected for the same reason as set forth in claim 18.

Regarding claim 32, this claim is rejected for the same reason as set forth in claim 8.

Regarding claim 45, this claim is rejected for the same reason as set forth in claim 1.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Phatak et al. (Pub. No. 20080039114) in view of Farmer et al. (Pub. No. 20100156706) and further in view of Bar-On et al. (Pub. No. 20050159174).

For claim 2, the combination of Phatak et al. and Farmer et al. disclose all limitations in claim 1. However, the combination of Phatak et al. and Farmer et al. disclose do not teach wherein the chosen location fingerprint is based on signal strengths measured by a second portable RF communication device, different from the first portable RF communication device.

In the same field of endeavor, Bar-On et al. disclose wherein the chosen location fingerprint is based on signal strengths measured by a second portable RF communication device, different from the first portable RF communication device (fig. 1 and abstract, [0008] and [0013]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Farmer et al. by specifically including wherein the chosen location fingerprint is based on signal strengths measured by a second portable RF communication device, different from the first portable RF communication device, as taught by Bar-On et al., the motivation being in order calculate the location of the target MS (N) from information obtained from the received signals.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAI A. PHUONG whose telephone number is 571-272-7896. The examiner can normally be reached on Monday to Friday, 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on 571-272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dai A Phuong/
Primary Examiner, Art Unit 2617
Date: 05/18/12

Notice of References Cited	Application/Control No. 13/448,309	Applicant(s)/Patent Under Reexamination SHKEDI, ROY	
	Examiner DAI A. PHUONG	Art Unit 2617	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2008/0039114	02-2008	Phatak et al.	455/456.1
*	B	US-2010/0156706	06-2010	Farmer et al.	342/357.1
*	C	US-2005/0159174	07-2005	Bar-On et al.	455/456.6
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
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	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

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BIB DATA SHEET

CONFIRMATION NO. 1020

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
13/448,309	04/16/2012 **RULE**	455	2617	24-CON2

APPLICANTS
Roy Shkedi, New York, NY;

**** CONTINUING DATA ***************************
This application is a CON of 12/720,362 03/09/2010 PAT 8,170,583
which is a CON of 11/533,238 09/19/2006 PAT 7,706,811

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED **** ** SMALL ENTITY **
04/26/2012

		STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /DAI PHUONG/ Examiner's Signature	☐ Met after Allowance Initials	NY	1	20	3

ADDRESS
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260
UNITED STATES

TITLE
Signal Comparison-Based Location Determining Method

FILING FEE RECEIVED 530	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

BIB (Rev. 05/07).

PTO/SB/08a (07-09)
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Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 3

Complete if Known	
Application Number	CON of S.N. 12/270,362
Filing Date	04/16/2012
First Named Inventor	Shkedi, Roy
Art Unit	2617
Examiner Name	Phuong, Dai
Attorney Docket Number	24-CON2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 7640288	12-29-2009	Yao et al.	
		US- 7433694	10-07-2008	Morgan et al.	
		US- 7414988	08-19-2008	Jones et al.	
		US- 7305245	12-04-2007	Alizadeh-Shabdiz et al.	
		US- 7403762	07-22-2008	Morgan et al.	
		US- 7502620	03-10-2009	Morgan et al.	
		US- 7493127	02-17-2009	Morgan et al.	
		US- 7474897	01-06-2009	Morgan et al.	
		US- 7471954	12-30-2008	Brachet et al.	
		US- 7515578	04-07-2009	Alizadeh-Shabdiz et al.	
		US- 7551579	06-23-2009	Alizadeh-Shabdiz et al.	
		US- 7551929	06-23-2009	Alizadeh-Shabdiz et al.	
		US- 7768963	08-03-2010	Alizadeh-Shabdiz	
		US- 7769396	08-03-2010	Alizadeh-Shabdiz et al.	
		US- 7818017	10-19-2010	Alizadeh-Shabdiz et al.	
		US- 7835754	11-16-2010	Alizadeh-Shabdiz et al.	
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature	/Dai Phuong/	Date Considered	05/18/2012

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6]Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 2 of 3

Complete if Known	
Application Number	CON of S.N. 12/270,362
Filing Date	04/16/2012
First Named Inventor	Shkedi, Roy
Art Unit	2617
Examiner Name	Phuong, Dai
Attorney Docket Number	24-CON2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 7057556	06-06-2006	Hall et al.	
		US- 7050786	05-23-2006	Caci	
		US- 6972717	12-06-2005	Sollenberger et al.	
		US- 6674403	01-06-2004	Gray et al.	
		US- 8073565	12-06-2011	Johnson	
		US- 7593722	09-22-2009	Jagadeesan et al.	
		US- 20080039114	02-14-2008	Phatak et al.	
		US- 7096030	08-22-2006	Huomo	
		US- 7035647	04-25-2006	de Verteuil	
		US- 8131464	03-06-2012	Farmer et al.	
		US- 7102570	09-05-2006	Bar-On et al.	
		US-			
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
		EP12419093	09-18-2002	L.M. Ericsson		

Examiner Signature	/Dai Phuong/	Date Considered	05/18/2012

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. [1]Applicant's unique citation designation number (optional). [2]See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5]Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [6]Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	3	of	3

Complete if Known	
Application Number	N/A (Continuation of 12/720,362)
Filing Date	04/16/2012
First Named Inventor	Shkedi, Roy
Group Art Unit	
Examiner Name	
Attorney Docket Number	24-CON2

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		Motorola, Inc., Overview of 2G LCS Technologies and Standards (3GPP TSG SA2 LCS Workshop LCS-010019 - London, UK, 11 - 12 January 2001).	
		Y. Zhao, "Mobile Phone Location Determination and Its Impact on Intelligent Transportation Systems," IEEE Transactions on Intelligent Transportation Systems, vol. 1, no. 1, pp. 55-64, Mar. 2000.	
		A Survey and Taxonomy of Location Systems for Ubiquitous Computing - by Jeffrey Hightower and Gaetano Borriello (Technical Report UW-CSE 01-08-03).	
		SpotON: An Indoor 3D Location Sensing Technology Based on RF Signal Strength - by Jeffrey Hightower and Gaetano Borriello - (UW CSE Technical Report #2000-02-02).	

Examiner Signature	/Dai Phuong/	Date Considered	05/18/2012

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[1] Unique citation designation number. [2] Applicant is to place a check mark here if English language Translation is attached.

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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /D.P./

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

SEARCHED

Class	Subclass	Date	Examiner
455	404.2, 432.1, 435.1-453, 456.1-456.3	05/18/12	ad
370	328-333	5/18/12	ad
			ad

SEARCH NOTES

Search Notes	Date	Examiner
Inventor Search	5/18/12	ad

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner
			ad

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4	(SHKEDI near2 ROY).in. and ((position$4 locat$4) same compar$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/05/18 16:07
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S2	2	"20090031006"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 07:23
S3	1	12/122619	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:03
S4	2	"7057556".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:48
S5	2	"7050786".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:49
S6	2	"6972717".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:54
S7	0	"200900031006"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:55
S8	2	"20090031006"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:55
S9	3	"20070232322"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 11:55

S10	2	"20080039114"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:04
S11	3406	((cell (base near3 station) bs) near4 (id identity identifi$8)) with (table referenc$4) with (locat$4 position$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:20
S12	197	((cell (base near3 station) bs) near4 (id identity identifi$8)) with (table referenc$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:21
S13	0	S3 and S12	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:23
S14	33383547	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:23
S15	163	S12 and S14	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:24
S16	6	"7706975".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:29
S17	1	12/720362	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:41
S18	2	"20080039114"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 12:44
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S20	0	(via near5 (second near3 (mobile $phone pda portable))) with (table referenc$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:17
S21	55	((second near3 (mobile $phone pda portable))) with (table referenc$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:18

S22	36	((second near3 (mobile $phone pda portable))) with (measur$4) with (within near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:18
S23	25	S19 and S22	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:18
S24	62	((second near3 (mobile $phone pda portable))) near12 (measur$4) with ((determin$4 comput$4) near5 (proximity range locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:22
S25	53	S19 and S24	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 14:23
S26	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:03
S27	39	(SHKEDI near2 ROY).in.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:29
S28	8	(SHKEDI near2 ROY).in. and (id).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:30
S29	3	(SHKEDI near2 ROY).in. and (rf same locat$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/03/24 15:31
S30	33453743	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:13
S31	3	(SHKEDI near2 ROY).in. and ((locat$4 position$4) same id).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:14
S32	150	((cell (base near3 station$4) (access near3 point$4)) near4 (id identity identif$6)) same (interest$4 near4 (locat$4 position$4 area point$4)) same (match$4 compar$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:16
S33	121	S30 and S32	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/15 16:17

S34	6752	((select$4 chos$4) near4 (locat$4 position$4 area)) same (within range proximity) same ((current$4 monitor$4) near4 (locat$4 position$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:12
S35	33511100	@ad<="20060919" or @rlad<="20060919" or @ptad<="20060919" or @pt1d<="20060919" or @pt3d<="20060919"	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:12
S36	437	((select$4 chos$4) near4 (locat$4 position$4 area)) same (within range proximity) same ((current$4 monitor$4) near4 (locat$4 position$4)) same ((base near3 station$4) cell)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:13
S37	437	S34 and S36	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:13
S38	15	((select$4 chos$4) near4 (locat$4 position$4 area)) same (within range proximity) same ((current$4 monitor$4) near4 (locat$4 position$4)) same ((base near3 station$4) cell) same ((compar$4 less more than greater) near12 (threshold level predetermin$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:14
S39	13	S35 and S38	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:15
S40	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:26
S41	596	((current$4 monitor$4 select$4 chos$4) near4 (locat$4 position$4 area)) same (within range) same ((base near3 station$4) cell) same ((compar$4 less more than greater) near12 (threshold level predetermin$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:36
S42	177428	"455"/$.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:37
S43	586	S34 and S42	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:37
S44	11	S41 and S43	US-PGPUB; USPAT; EPO; JPO; DERWENT;	OR	ON	2012/03/01 11:38

			IBM_TDB			
S45	2	(SHKEDI near2 ROY).in. and ((compar$4 less more than greater) near12 (threshold level predetermin$4)).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:53
S46	14	(SHKEDI near2 ROY).in. and (location$4 position$4 area proximit$4).clm.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/03/01 11:54
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S49	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/05/18 11:19
S50	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/05/18 11:20
S51	7	"7706811".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2012/05/18 15:31

5/18/2012 4:08:35 PM
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Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	13448309	SHKEDI, ROY
	Examiner	**Art Unit**
	DAI A PHUONG	2617

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

CLAIM		DATE								
Final	Original	05/18/2012	03/01/2012							
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	2	✓								
	3	✓								
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	34	-								
	35	-								
	36	-								

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
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✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
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CLAIM		DATE								
Final	Original	05/18/2012	03/01/2012							
	37	-								
	38	-								
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	42	-								
	43	-								
	44	-								
	45	✓								

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
13/448,309	04/16/2012	2617	530	24-CON2	20	3

CONFIRMATION NO. 1020

26362
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

FILING RECEIPT

OC000000053957893

Date Mailed: 04/30/2012

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)
Roy Shkedi, New York, NY;

Assignment For Published Patent Application
Broadphone, LLC

Power of Attorney: The patent practitioners associated with Customer Number 26362

Domestic Priority data as claimed by applicant
This application is a CON of 12/720,362 03/09/2010 PAT 8170583
which is a CON of 11/533,238 09/19/2006 PAT 7706811

Foreign Applications (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see http://www.uspto.gov for more information.)

If Required, Foreign Filing License Granted: 04/26/2012

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 13/448,309**

Projected Publication Date: 08/09/2012

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****

Title

Signal Comparison-Based Location Determining Method

Preliminary Class

455

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
13/448,309	04/16/2012	Roy Shkedi	24-CON2

CONFIRMATION NO. 1020

POA ACCEPTANCE LETTER

26362
LOUIS J. HOFFMAN, P.C.
14301 North 87th Street, Suite 312
Scottsdale, AZ 85260

OC000000053957907

Date Mailed: 04/30/2012

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/16/2012.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/hkquach/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
13/448,309

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	95		N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	310		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	125		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x 30 =	0.00	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x 125 =	0.00			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	530		TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
AMENDMENT A	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
AMENDMENT A	Application Size Fee (37 CFR 1.16(s))									
AMENDMENT A	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
AMENDMENT B	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
AMENDMENT B	Application Size Fee (37 CFR 1.16(s))									
AMENDMENT B	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.

PTO/SB/05 (08-08)
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	24-CON2
First Inventor	Shkedi, Roy
Title	Signal comparison-based location determining method
Express Mail Label No.	FILED VIA EFS

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: **Commissioner for Patents**
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1. ☐ **Fee Transmittal Form** (e.g., PTO/SB/17)
2. ☑ **Applicant claims small entity status**. See 37 CFR 1.27.
3. ☑ **Specification** [*Total Pages* 72]
   Both the claims and abstract must start on a new page
   (For information on the preferred arrangement, see MPEP 608.01(a))
4. ☑ **Drawing(s)** (*35 U.S.C. 113*) [*Total Sheets* 1]
5. **Oath or Declaration** [*Total Sheets* 2]
   a. ☐ Newly executed (original or copy)
   b. ☑ A copy from a prior application (37 CFR 1.63(d))
   (for continuation/divisional with Box 18 completed)
   i. ☐ DELETION OF INVENTOR(S)
   Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. ☐ **Application Data Sheet.** See 37 CFR 1.76
7. ☐ **CD-ROM or CD-R** in duplicate, large table or Computer Program *(Appendix)*
   ☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
   (if applicable, items a. – c. are required)
   a. ☐ Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
   i. ☐ CD-ROM or CD-R (2 copies); or
   ii. ☐ Paper
   c. ☐ Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. ☑ **Assignment Papers** (cover sheet & document(s))
   Name of Assignee Broadphone, LLC
10. ☑ **37 CFR 3.73(b) Statement** *(when there is an assignee)* ☑ **Power of Attorney**
11. ☐ **English Translation Document** *(if applicable)*
12. ☑ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
    ☐ Copies of citations attached
13. ☑ **Preliminary Amendment**
14. ☐ **Return Receipt Postcard** (MPEP 503)
    (*Should be specifically itemized)*
15. ☐ **Certified Copy of Priority Document(s)**
    (if foreign priority is claimed)
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ Other:

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:*

☑ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: 12/720,362

Prior application information: *Examiner* Phuong, Dai *Art Unit:* 2617

19. CORRESPONDENCE ADDRESS

☑ The address associated with Customer Number: 26362 ***OR*** ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone		Email	

Signature	/Louis J. Hoffman/	Date	04/16/2012
Name (Print/Type)	Louis J. Hoffman	Registration No. (Attorney/Agent)	38,918

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
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TITLE OF THE INVENTION

Signal Comparison-Based Location Determining Method

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of application Ser. No. 11/533,238, filed on September 19, 2006 and entitled "Signal Comparison-Based Location Determining Method". The disclosures of said application and its entire file wrapper (included all prior art references cited therewith) are hereby specifically incorporated herein by reference in their entirety as if set forth fully herein. Furthermore, a portion of the disclosure of this patent document contains material which is subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by anyone of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all copyright rights whatsoever.

TECHNICAL FIELD

The present invention generally relates to methods for determining the location of a mobile telephone, or of a mobile communications device. More specifically, the present invention relates to a method for determining the location of a mobile telephone, wherein the mobile telephone is preferably capable of performing measurements of signal characteristics deriving from signals being received from mobile telephone service area antennas, of performing calculations related thereto, and of storing these measurements

and/or calculation results.

BACKGROUND ART

Simply stated, there is a longstanding problem of providing high accuracy location data for mobile devices, such as mobile telephones. In the most critical aspect, the problem is to maintain user privacy of precise location data of the mobile telephone user. Nevertheless, there also remains a need in the art for simple straightforward improvements in determining the precise location of mobile devices; especially in poor signal-reception locations such as in dense multi-story urban centers. Furthermore, there is a need in the art for providing an elevation component to location data, so as to locate a device in a multi-story structure.

Motorola, Inc., Overview of 2G LCS Technologies and Standards (3GPP TSG SA2 LCS Workshop LCS-010019--London, UK, 11-12 Jan. 2001)--discusses why locating mobile phones becomes a hot topic in telecommunications industry, and what technologies are being studied and standardized.

Y. Zhao, "Mobile Phone Location Determination and Its Impact on Intelligent Transportation Systems," IEEE Transactions on Intelligent Transportation Systems, vol. 1, no. 1, pp. 55-64, Mar. 2000.--provides more information on different location technologies and related location services.

There are many location-determining methods used to determine the location of a cell phone. These methods differ in the level of accuracy they provide as well as their implementation. In general these methods could be divided into methods that involve the cellular network participation and those that don't (handset based only).

Methods that involve the cellular network participation include:

Cell-ID

TDOA--Time Difference Of Arrival

TOA--Time Of Arrival

AOA--Angel Of Arrival

EOTD--Enhanced Observed Time Difference

A-FLT--Advanced Forward Link Trilateration

A-GPS--Assisted GPS (Global Positioning System)

Methods that rely solely on the handset to determine its position:

GPS--Global Positioning System

Expect Cell-ID where the location of the handset is simply determined to be within the area of the cell, where the cell's base station location is known and the accuracy depends on the size of the cell (accuracy of anywhere between 100 meter and 3,000 meters) all other methods require different levels of calculations either by the network or the handset or both.

A substantially similar field where virtually the same class of location based need arise is in the area of ubiquitous computing. Essentially, with respect to location based applications, the primary difference between the mobile telephony and ubiquitous computing relates to privacy--since the mobile telephone user might prefer not to allow his location to be monitored, while privacy is a non-issue for a ubiquitous computer attached to a box in a large warehouse or to a piece of luggage in an airport customs clearance center or to a semi-assembled component in a multifaceted manufacturing facility or to a semiautonomous vehicle in a recreation center, etc.

A Survey and Taxonomy of Location Systems for Ubiquitous Computing--by Jeffrey Hightower and Gaetano Borriello (Technical Report UW-CSE 01-08-03)--"Emerging mobile computing applications often need to know where things are physically located. To meet this need, many different location systems and technologies have been developed. In this paper we present the basic techniques used for location-sensing, describe a taxonomy of location systems, present a survey of research and commercial

location systems that define the field, show how the taxonomy can be used to evaluate location-sensing systems, and offer suggestions for future research. It is our hope that this paper is a useful reference for researchers and location-aware application builders alike for understanding and evaluating the many options in this domain."

SpotON: An Indoor 3D Location Sensing Technology Based on RF Signal Strength--by Jeffrey Hightower and Gaetano Borriello--(UW CSE Technical Report #2000-02-02) "Providing a reliable technology and architecture for determining the location of real world objects and people will undoubtedly enable applications, customization, and inference not currently possible. This paper documents the creation of SpotON, a new tagging technology for three dimensional location sensing based on radio signal strength analysis. Although there are many aspects to the topic of location sensing and several of them will be briefly discussed, this paper is primarily concerned with the hardware and embedded system development of such a system."

For many mobile telephone location based services, constant calculation of a user's handset location is required. For example, if a user asked to receive food coupons whenever he enters a specific area or to be informed if a child carrying a cell phone left a certain perimeter around the house, or if the user asked for a group call to his cell phone and home phone every time that he is at home; in order to give him the option to answer calls to his cell phone on his landline.

From a network perspective, in an anticipated emerging world where Location Based

Services (LBS) are expected to be widely used and of those services many require constant monitoring of a user's cell phone location, those methods will require the networks to have a lot of infrastructure dedicated to the determination of handsets' locations.

From a privacy perspective, having the cellular network constantly monitor a user's location is problematic to many people. For example, the user asked to receive coupons for merchandise on sale when he is in the shopping area next to his home. However, that same user is troubled by a prospect that, in order for the coupons to be sent, the user's location must be constantly monitored so as to find out when he enters the shopping area.

Obviously the privacy problem could be solved by having the cell phone itself monitor its position, and activate an application when the cell phone concludes that the user has entered the shopping area, etc. This class of solution is also amenable for adaptation to ubiquitous computing situations--since it simply makes the location monitoring logic part of a distributed computing architecture.

Having the cell phone monitor its position will also significantly reduce the infrastructure required by the cellular network to determine the location of handsets. This is also true in ubiquitous computing applications.

Currently a cell phone can determine its geographical location by using a GPS receiver. The challenges with using a GPS in a handset--is that GPS require significant

calculations that takes time, up to several minutes; it is difficult to get GPS signals in dense urban areas; and GPS does not distinguish between different elevations at the same location. Thus, in our shopping area example, GPS would not distinguish between entering a large department store from entering a shopping center plaza in a floor below or entering a professional service office in a floor above.

A-GPS (Assisted-GPS), which is intended to reduce the time it takes to determine a location as well as possibly calculate the location in the network in order to reduce the complexity required from the cell phone, once again requires the network.

Using Cell-ID by the cell phone is limited as a cell area location resolution is not good enough for most location based applications. On the ubiquitous computing side, division of large areas into micro-cells presents a substantially similar location accuracy threshold.

There are, of course, numerous patents that have contributed to progress in this art--especially in the field of cellular telephones--most especially since there is an ongoing attempt to reach compliance with regulations calling for instant automatic location reporting for cellular telephone users requesting emergency services (police, ambulance, fire department, etc.).

U.S. Pat. No. 7,057,556--Method And Apparatus For Geolocating A Wireless Communications Device--"The time difference of arrival for a signal received at two or more receiving sites as transmitted from a wireless communications device, is determined

by a frequency domain technique. The constituent frequencies of the signals received at the two or more receiving sites are determined, including the phase, or a value representative of the phase, of each frequency component. The phase values for the same frequency are subtracted to yield a phase difference values as a function of frequency. The slope of the function represents the time difference of arrival for the wireless communications device signal as received at the two receiving sites. To determine the mobile location based on the determined time difference of arrival values, a seed or initial location is first assumed for the wireless communications device and the distance difference of arrival (the time difference of arrival multiplied by the speed of light) is calculated. The calculated time difference of arrival is then used to adjust the distance difference of arrival by continuously iterating the position of the wireless communications device until the calculated distance of arrival and the calculated time difference of arrival (as multiplied by the speed of light) are within a predetermined margin."

U.S. Pat. No. 7,050,786--Method And Apparatus For Locating A Wireless Device--
"Disclosed is a method and apparatus for locating a wireless device especially useful for locating a cellular telephone making a call from an unknown location. The call may be a request for emergency assistance, or for location-based commercial services, for example. Various embodiments may optionally include a mobile location component, a cellular telephone enabled to chirp-on-demand, and/or an interferometer link. A mobile location component may include a directional antenna. The directional antenna may be mounted on an antenna boom on top of an emergency vehicle, for example. The mobile

location component may alternately or additionally comprise a hand-held unit. System elements may cooperate to generate a situation awareness map or other display. The mobile location component may be moved in the general direction of a first location calculation associated with a first circular error of probability. After being moved in the general direction, the mobile location component may cooperate with other elements to determine a second location calculation associated with a second circular error of probability. Second and subsequent location calculations are of increasing precision, enabling an emergency vehicle or attendant to zero in on a cellular telephone."

U.S. Pat. No. 6,972,717--Method And Apparatus For Enhanced 911 Location Using Power Control In A Wireless System--"A method of locating a mobile telephone includes steps of receiving, transmitting, increasing and determining. In the receiving step, a first base station receives a call from a mobile telephone, the call including a dialed number and a TDMA signal. In the transmitting step, the base station transmits a control message to the mobile telephone when the dialed number meets a predetermined criterion, such as being 911. The control message instructs the mobile telephone to transmit the TDMA signal at a maximum power. In the increasing step, the mobile telephone increases the TDMA signal to maximum power in response to the control message. Then in the determining step, location information for the mobile telephone is determined based on at least one characteristic of the TDMA signal received at at-least one of the first base station and other base stations. In an alternate embodiment, the method is practiced in a mobile telephone and the power level is automatically increased in response to the dialed number meeting a predetermined criterion."

U.S. Pat. No. 6,674,403--Position Detection And Location Tracking In A Wireless Network--"A system and method for performing real-time position detection and motion tracking of mobile communications devices moving about in a defined space comprised of a plurality of locales is provided. A plurality of access points are disposed about the space to provide an interface between mobile devices and a network having functionality and data available or accessible there-from. Knowledge of adjacency of locales may be used to better determine the location of the mobile device as it transitions between locales and feedback may be provided to monitor the status and configuration of the access points."

EP 1241909--Method And Computer Readable Medium For A Program For Location Determination Of A Mobile Terminal--"A method for location determination of a mobile terminal by means of radio connections which are controlled by a common server, characterized by providing a least one pair of different radio zones closely spaced from each other so that distinct directional information transversely to a boundary between the pair of radio zones is provided upon recording of the movement of the mobile terminal in the zones. Furthermore, preferably characterized in that a pair of radio zones comprises a first zone and a second zone, and that information is stored in the server defining that the mobile unit is present on one side of said boundary if the mobile unit is first recorded in the second zone and then in the first zone, and defining that the mobile unit is present on the other side of said boundary if the mobile unit is first recorded in the first zone and then in the second zone."

The challenges, therefore, are to develop a location-determining method that would: (A) Take place on the cell phone for the benefit of privacy (monitoring of user location by the cell phone and not by the cellular network) as well as in order to reduce the infrastructure required by the cellular network to determine cell phone locations; (B) Will not require heavy calculations by the cell phone in order to be able to determine a location fast and with minimal resources so the method be suitable for cheap handsets and not only expensive handsets with capabilities to perform heavy calculations; and (C) Provide accurate enough location determination.

Simply stated, there is a need for performing geographical location determinations with ordinary RF communications hardware (without GPS capability) because that is less expensive than performing the same determination with GPS hardware components. Furthermore, there is another independent need to perform location determinations within a scope of privacy to the user--in order for him to permit application events that depend on location. There is also a need for location determination in locations where GPS reception is problematic. In addition, there is a need for determining elevation components of location without the addition of additional hardware--especially for devices that are already GPS capable. Likewise, for both cellular telephony and the ubiquitous computing arts there is a need to provide elevation location data and/or to reduce infrastructure intensive application for location determination, progress in at least one of these areas would constitute a meaningful contribution to alleviating a longstanding need in the art; and would set the stage for the progress of further location-

knowledge-dependent applications.

DISCLOSURE OF INVENTION

The aforesaid longstanding needs are significantly addressed by embodiments of the present invention, which specifically relates to a Signal-Comparison Based Location-Determining Method. The instant method is especially useful in telecommunications and/or ubiquitous computing applications wherein there exists a need to provide improved privacy, and/or to provide elevation location data, and/or to reduce infrastructure intensive application for location determination.

The instant invention relates to embodiments of a Signal-Comparison Based Location-Determining Method, operable by at least one portable RF communications device in conjunction with at least two fixed-location service-area antenna stations respectively capable of RF communication with the at least one device wherein the stations are substantially continuously operating, and the method is comprising the steps of:

(A) Registering a selected location by first-causing a portable RF communications device at the selected location (i) to receive an RF communications signal from a plurality of local fixed-location service-area antenna stations, and (ii) to measure reception signal strength respectively associated with the received signal from at least two of the plurality of antenna stations;

(B) Recording the selected location by electronically storing at least two of the respective reception signal strength measurements;

(C) Monitoring by second-causing a portable RF communications device (i) to receive communications signals from a plurality of respectively local fixed-location service-area antenna stations, and (ii) to measure reception signal strength associated with the signals; and

(D) Determining if the portable RF communications device of the Monitoring step is at the selected location of the registering step by electronically comparing measurements in the monitoring step with the stored at least two measurements of the Recording step.

According to a simpler categorization, the instant invention relates to a methodological embodiment (see FIG. 1) whereby at least one portable RF communications device in conjunction with at least two fixed-location service-area antenna stations respectively capable of RF communication with the at least one device perform the steps of: -100-(I) using a portable device at a selected location to measure RF communications signals from the plurality of local fixed-location service-area antenna stations and electronically storing at least two of the respective reception signal strength measurements; and -110-(II) Monitoring a portable device location by causing the device to measure reception signal strength associated with local fixed-location service-area antenna stations signals, and to electronically compare these measurements with the stored at least two measurements.

Please note, the present invention is herein described with a certain degree of particularity, however those versed in the art will readily appreciate that various modifications and alterations may be carried out without departing from either the spirit or scope, as hereinafter claimed. For example, the majority of the description relates to direct measurements of signal strengths and direct comparisons of those measurements. Such direct measurements are generally correct in a cellular telephone GSM environment, however in a cellular telephone CDMA environment it is the relative signal strengths that form an important metric for comparative purposes. Similarly, for other antenna space environments, measurements and comparisons thereof should conform to the underlying policy that governs the management of antenna space signal strength management--or of equivalent antenna space transmission metric characteristics. For example, a strongest signal may be used as a unit to help normalize other simultaneous measurements; however, since that strongest signal may encounter inoperative events or radical environmental changes (e.g. construction of a signal blocking structure between the "strong" antenna and the reception location), one would prefer to retain a capability to renormalize measurements within the context of the instant method.

Simply stated, a conceptually instant enabling embodiment of the present invention is a cellular telephone device that looks at the signal strengths (and preferably corresponding local base station service area antenna IDs) to characterize an antenna space signal-reception signature as being substantially equivalent to a current location. The device needs a means for remembering this signal strength (preferably with the antennas' IDs),

and this means may be on the device per se, kept at a remote storage (or even transferred from the current device to the owner's next cell phone). The device can "know" that it has returned to the original location where the signal strengths were measured (and the antennas' IDs preferably captured). Since the device is capable of receiving and measuring such signals, the device simply performs such reception measurements and compares these measurements with the remembered signal strength combinations. Whenever there is a substantial equivalence between the remembered signal strengths (and IDs) and the currently being monitored signal strengths (and IDs), then the device can conclude that it is probably at the original location where the original measurements were performed.

Now, illustrative enabling embodiments of a Signal-Comparison Based Location-Determining Method of the instant invention--according to a simplified aspect--substantially relate to a method for determining a cell phone (or a ubiquitous computer) location comprising: (A) at a desired location--Causing a cell phone (or a ubiquitous computer) to measure signal strengths from surrounding cells and to record the signal strengths measured by the cell phone (or the ubiquitous computer) from the surrounding cells; (B) at a current location--Causing a cell phone (or a ubiquitous computer) to measure the signal strengths from surrounding cells; and (C) Causing the Cell phone (or ubiquitous computer) to compare the measured signal strengths from surrounding cells at the current location with the recorded signal strengths from surrounding cells at the desired location in order to determine whether the cell phone or the ubiquitous computer of the present location is also at the desired location.

Today, given our technological orientations, one's normal concept of location combines some small number of quantitative coordinates according to some consistent coordinate system. Typically location is described by a Cartesian intersection of latitude and longitude; and sometimes including elevation too. Elsewhere, location is described by triangulation from two known positions. Nevertheless, when desiring to express the location of a mobile telephone (i.e. cellular telephone, "tell phone", pager, area wide wireless telecommunications apparatus, blackberry, ubiquitous computer, or the likes), the ability to capture precise longitude, latitude, or angular measurements become calculation intensive--well beyond the economic value of their engineering precision; most particularly if these calculations must be performed on the mobile telephone.

Now, the instant invention takes note of an additional ergonomic parameter, typical of mobile telephones, which greatly simplifies these calculations; perhaps even increasing the accuracy of the resultant location specification. Let's start with a simplest example; a mobile telephone is in the possession of a resident of a small house, which is in a sparsely populated rural environment. By the very nature of this situation, that small house probably only falls within the antenna coverage of a single cellular telephone service providing antenna. Accordingly, if the cell-phone captures a distance equivalent measurement between itself (when located in that small house) and the area service antenna, then one would expect that this measurement simply describes a constant radius distance around the service antenna. Accordingly, from a strict scientific perspective, whenever the cell-phone measures that it is at that radius distance from the service

antenna, it can only logically presume that the probability of it also being in that small house is substantially proportional to the fragment of arc that the house represents with respect to the circumference specified by that radius.

OK, now if the owner of the cell-phone is a tractor driver who typically continuously drives back and forth across the length and breadth of the service antenna coverage area, then the presumed probability that the cell-phone radius measurement corresponds to him being in that house is as described. However, if he is in that house an average of eight hours per day, then there is already a high probability that the radius measurement from the cell-phone indicates that he is in the house. More likely, the cell-phone owner is not an indentured round-the-clock tractor driver, but an ordinary vehicle commuter who goes from that house to various other locations, using established paved roads. This being the case, there are perhaps four to six locations where these roads coincide with that radius measurement, and it is only of minimal probability that a part of one of those roads follows that circumference for any span or that the cell-phone owner parks his vehicle at such a location. Accordingly, there is an already very high probability that the radius measurement from the cell-phone indicates that he is in the house.

One can easily provide a significant increase in this already very high probability by delaying confirmation of the measurement calculation--at least until it is performed at least twice. Specifically, to eliminate spurious observation of the cell-phone owner traversing at that circumference, one need only wait to see that the same measurement had been made twice with perhaps a 2-3 minute interval wait there-between. That interval

would be enough to edit out occurrence of the cell-phone owner stopping or driving over (or along) the circumference; or stopping at some incidentally located traffic light, etc.

Moving on to a slightly more realistic scenario, the house is located in a rural environment (see FIG. 2) where there are occasional clusters of buildings and three service antennas -200- -210- -220- such that there is a 40% probability of a building being in the coverage area of a single service antenna, a 40% probability of a building being in the overlapping coverage area of two service antennas, and a 20% probability of a building being in the overlapping coverage area of three service antennas. In this instance, the cell-phone captures respective distance equivalent measurement(s) between itself (when located in that small house) and each of area service antenna(s). In order to make this example more simplistic, one can say that the cell-phone ignores any distance equivalent measurement (e.g. service antenna signal strength as measured at the mobile device, arrival times or phases of signals arriving from surrounding cells, or the likes) below a predetermined threshold. Now in this example, there is yet a substantially higher probability that a confluence of the captured radius measurement(s) from the cell-phone indicate that he is in the house.

However, instead of the simplistic assumption, that we only consider distance equivalent measures for service antenna signals that are capable of providing a reasonable quality of service to the mobile telephone unit, we substitute a more realistic assumption--specifically that we consider distance equivalent measures from service antenna signals that are discretely recognizable (i.e. where the service antenna ID is non-ambiguously

recognizable with the signal that the mobile telephone receives from the respective antenna). Now, for almost every rural, suburban, and urban location where there is mobile telephone service provided--the mobile telephone will be able to equate its current position with a unique coordinate signature comprising at least one (but preferably a plurality of) identifiable service antennas and their respective distance equivalent measurement there-from, as appreciated from their respective signal strengths (or like metrics).

Simply stated, if a mobile telephone (at a user selected location) measures a plurality of service antenna signals and stores these with their respective service antenna identifications, then that mobile telephone (or an equivalent unit) upon observing an identical list of service antennas with substantially identical respective signal strengths--can reasonably conclude that it is within a predetermined proximity of the original user selected location. We will call the coordinate of the user selected location a "fingerprint"--because we believe that each such location has (associated with it) a substantially unique combination of service antenna identifications with respective distance equivalent measurements (e.g. service antenna signal strength as measured at the mobile device, arrival times or phases of signals arriving from surrounding cells as measured by the mobile device, or the likes).

For practical purposes, the fingerprint should carry substantially about the same probability of ambiguity between all combinations of two region-similar physical locations (having the "same" fingerprint) as the Global Positioning System (GPS). Recall

that GPS has a nominal probability of giving biased reading (false reading)--especially in the locations near where GPS will give no reading whatsoever--such as inside building or in dense urban areas or in steep mountain gorges, etc. Specifically, GPS will fail to give a proper coordinate reading whenever it can not simultaneously locate three positioning satellites. However, under a different (but similarly improbable combination of circumstances), the fingerprint concept of the instant invention may fail to provide adequate location recognition (ambiguity). Our first order suspicion is that the fingerprint concept will be at least as good (over a large collection of urban, suburban, and semi-rural settings) as the GPS system--albeit the fingerprint location concept does not require the special hardware of GPS Systems (antenna & computation hardware). Accordingly, for an equal quality of service, it is reasonable to suggest that the fingerprint concept embodiments will always be less costly than equivalent GPS embodiments.

These respective distance equivalent measurements are generally not adequate for direct triangulation calculation from the known positions of the service antennas--because in mountainous regions and more particularly in urban landscapes, the signal strength is a function of the convolutions of the signal path length and of the absorption or reflection of materials encountered there-between. Nevertheless, since service providers generally measure ground truth to locate shadow spots and the likes, the accumulation of GPS coordinates in association with location fingerprints--will eventually create adequate computational closure for the provision of transformations between fingerprints and standard geographical map coordinates--via an intermediate fingerprint "terrain" map database.

Intentionally, cell phones including both a GPS and the instant invention method could help build such a database. The GPS would be used to identify a desired location for the first time and the signal strength fingerprint will be used to recognize the desired location from that point in time and onwards). In a practical application, this means that a mobile telephone calling an emergency number (police, fire, ambulance, etc.) and transmitting the fingerprint that it currently records--should thereby provide the emergency response with adequate information to transform the fingerprint into a real world location and to arrive at same. Thus, until there is substantially complete closure in the construction of "fingerprint" topological database maps, a fingerprint supplemented GPS reporting to emergency services would provide a best opportunity embodiment for those services to locate the caller.

Furthermore, because service antennas are generally not located at identical elevations (nor coplanar); and the elevation of service antennas is known, Thus, measuring at two locations, having identical latitude and longitude but differing in elevation, will not yield identical fingerprints. This is a significant advancement over GPS, which is generally elevation insensitive for location determination (i.e. differentiating between floors of a multi-story building, shopping center, or the likes).

Now, according to more heuristic variant embodiments of the instant invention, the mobile telephone will generally measure and record a greater than necessary plurality of service antenna identifiers with their respective distance equivalent metrics. Thereafter,

when the mobile telephone monitors its respective present location in service area antenna signal strength space (or the likes), then finding a correlation with a majority of such measurements in a single record will lead the device to logically conclude that there is a high probability that this is the location of that measurement--albeit that there is perhaps a new building between the current location and one or more of the proximate service area antennas. Accordingly, the device may build up an evolving description to characterize a known location. Similarly, the device may normalize the measurements in each record or develop pair wise combinations of relationships between measurements of a single record--thereby opening the variation embodiment wherein a different mobile telephone may use this same data; which in turn allows the user of this mobile telephone to transfer his collection of records to another device that may not identically measure service antenna characteristics.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to understand the invention and to see how it may be carried out in practice, embodiments including the preferred embodiment will now be described, by way of non-limiting example only, with reference to the accompanying drawings. Furthermore, a more complete understanding of the present invention and the advantages thereof may be acquired by referring to the following description in consideration of the accompanying drawings, in which like reference numbers indicate like features, and in which an embodiment "name" is only for purposes of helping a reader to differentiate between embodiments and among various groups of aspects and/or variations therein, and

wherein:

FIG. 1 illustrates a schematic view of a "methodological" embodiment;

FIG. 2 illustrates a schematic view of an antenna space reception map

FIG. 3 illustrates a schematic view of a "basic" embodiment;

FIG. 4 illustrates a schematic view of a "first appurtenance" embodiment

FIG. 5 illustrates a schematic view of a "second appurtenance" embodiment;

FIG. 6 illustrates a schematic view of a "system" embodiment;

FIG. 7 illustrates a schematic view of an "illustrative enabling" embodiment

MODES FOR CARRYING OUT THE INVENTION

Embodiments and aspects of the instant invention may be embodied in various forms, wherein a Basic embodiment (see FIG. 3) of the instant invention relates to A Signal-Comparison Based Location-Determining Method, operable by at least one portable RF communications device in conjunction with at least two fixed-location service-area antenna stations respectively capable of RF communication with the at least one device

wherein the stations are substantially continuously operating, and the method is comprising the steps of: (A) Registering -300- a selected location by first-causing a portable RF communications device at the selected location (i) to receive an RF communications signal from a plurality of local fixed-location service-area antenna stations, and (ii) to measure reception signal strength respectively associated with the received signal from at least two of the plurality of antenna stations; (B) Recording -310- the selected location by electronically storing at least two of the respective reception signal strength measurements; (C) Monitoring -320- by second-causing a portable RF communications device (i) to receive communications signals from a plurality of respectively local fixed-location service-area antenna stations, and (ii) to measure reception signal strength associated with the signals,; and (D) Determining -330- if the portable RF communications device of the Monitoring step is at the selected location of the registering step by electronically comparing measurements in the monitoring step with the stored at least two measurements of the Recording step.

Now in greater detail, the Basic instant embodiment is operable by at least one portable RF communications device in conjunction with at least two fixed-location service-area antenna stations respectively capable of RF communication with the at least one device wherein the stations are substantially continuously operating. As is likewise mentioned elsewhere herein, the RF device may be a cellular telephone or a communications enabled ubiquitous computer or any mobile device capable (I) of receiving RF signals and (II) of measuring their respective signal strengths (or of measuring any parameter that is equivalent to signal strength), and of communication (internal or external) with a

module that can store data and can logically and mathematically compare values and therewith arrive at a comparative conclusion between two sets of data. Essentially these sets of data are those created in the storing step and in the monitoring step. Depending on the sophistication of software enabling the comparative conclusion, the operations involved may be simply logical comparisons, arithmetically threshold (rounded) logical comparisons, arithmetic, probabilistic, fuzzy logic, neural network enabled, heuristic, or the likes.

Furthermore, in greater detail, we now turn our attention to the Basic instant embodiment step of: (A) Registering a selected location by first-causing a portable RF communications device at the selected location (i) to receive an RF communications signal from a plurality of local fixed-location service-area antenna stations, and (ii) to measure reception signal strength respectively associated with the received signal from at least two of the plurality of antenna stations. This is a data collection step where the portable device comes to measure the antenna signal space reception characteristics at the selected location. Depending on the sophistication of the specification enablement, one should give priority of "attention" to the strongest signals--since these are probably the most robust for characterizing the antenna space reception signature of this selected location. A highly sophisticated enablement will collect lots of measurement data and then be able to come to viable conclusions using which ever verifiable fraction of that data is reproducible at a subsequent instantiation. A more simplistic approach would be to just take the up to five strongest signals.

Likewise, in greater detail, we now turn our attention to the Basic instant embodiment step of: (B) Recording the selected location by electronically storing at least two of the respective reception signal strength measurements. Storage may be on the device per se or transferred to a remote storage facility. Privacy for a cellular telephone user preferred that the data be stored on the cellular telephone unit, however for other types of device or where privacy is not important (e.g. monitoring luggage or logistics of components in a warehouse or police in the field or the likes) the data may be off loaded. The offloading may be done in real time or may be done in batch at convenient intervals or to testify to the location of the device at a time in question or the likes.

In addition, in greater detail, we now turn our attention to the Basic instant embodiment step of: (C) Monitoring by second-causing a portable RF communications device (i) to receive communications signals from a plurality of respectively local fixed-location service-area antenna stations, and (ii) to measure reception signal strength associated with the signals. Essentially, this step is by first approximation alike in technical detail to the Registering step. However, the monitoring step may be of a different degree of detail to the registering step. For example, the registering step may collect lots of data while the monitoring step collects sparse first order data, and then collects more comprehensive data for the next step (Determining). Essentially, one does not want to dedicate lots of portable device resources to the monitoring activity, so one may divide the monitoring into low accuracy monitoring activities--which just tell the device if there might be anything to seriously compare (such as the surrounding antennas' IDs at the selected location and current location are the same and therefore more resources should be

allocated to the monitoring); and higher accuracy monitoring activity--which takes the necessary resources to make the necessary determining definitive.

Finally, in greater detail, we now turn our attention to the Basic instant embodiment step of: (D) Determining if the portable RF communications device of the Monitoring step is at the selected location of the registering step by electronically comparing measurements in the monitoring step with the stored at least two measurements of the Recording step. Where privacy is of concern then all of the four steps should be performed on a single mobile device. However, in a privacy irrelevant shared data environment, one might even reach the case where Registering is done on a first device, Monitoring is done on a second device, Storing is done in an offsite facility, and Determining is done in a different offsite facility.

According to a first implementation aspect of the Basic embodiment of the Signal-Comparison Based Location-Determining Method, the Registering step includes identifying at least one ID within at least one of the respectively received signals; and the Recording step includes storing each of the at least one IDs with the respective reception signal strength measurement. In the context of this first implementation aspect, it is according to a preferred manifestation that the Monitoring step includes identifying at least one ID within at least one of the respectively received signals and the Determining step includes electronically matching at least one ID of the Monitoring step with the stored at least one ID of the Recording step. Simply stated, while the method may be accomplished without having an ID on every signal, having such an ID would make the

job of concluding, that the current location is the selected location, much easier. Nevertheless, since ID is not required, then have one or more signals with ID may also provide for logic simplification. In the case of cellular telephony, the ID seems to always be available in service areas. However, in areas plagued by intermittent service problems, sometimes a device will see a signal where the ID is not recognizable. In other applications, the device is not a cellular telephone but does use the cellular base station signals as "landmarks" for registering "location"--so the device might not have the ability to look for an ID even if the ID is clearly visible on the respective signals.

According to a second implementation aspect of the Basic embodiment of the Signal-Comparison Based Location-Determining Method, the Monitoring step includes iteratively performing the sub-steps C.i and C.ii with a predetermined time delay between successive iterations of C.i such that the monitoring step data is used only if a substantial portion of the successive C.ii measurements are alike within a predetermined threshold--since this indicates that the portable RF device of step C is temporally immobile. This returns to our case above, where a driver happens to stop at a traffic light that just resembles a known confluence of signal strengths. However, if the driver does not stay there more than a minute or two, we would conclude that he has not really arrived at the selected location.

According to a third implementation aspect of the Basic embodiment of the Signal-Comparison Based Location-Determining Method, the Determining step includes improving the electronically stored at least two of the respective reception signal strength

measurements of step B by storing at least one measurement of step C therewith--thereby upgrading robustness of the electronically stored measurements. This case relates to creating an ability to improve the correctness of the basic method. For example, in the urban terrain, new building are being built and old ones are being modified while streets are being paved with alternate materials, large billboards are being erected, old antennas are replaced and new ones are added--all of which cause the preferred method to attempt to upgrade the data of the original registering step; and to learn new aspects of the current antenna space environment. Another realistic example is the addition of a cell site and its impact on pre-existing cells.

According to a fourth implementation aspect of the Basic embodiment of the Signal-Comparison Based Location-Determining Method, the Registering step includes accessing a GPS location coordinate for the selected location and Recording step includes keeping the GPS location coordinate with the stored signal strength measurements. This aspect anticipates that a transformational data bank could be created by collecting correspondences between GPS (latitude longitude) coordinates and antenna space reception "coordinates" for the same location. If sufficient correspondence data is collected, then a never registered location can be found by grabbing antenna space reception "coordinates" and extrapolating them within the correspondence set. This would be of great benefit for "911" emergency service location-determining compliance; since locations failing to be able to report GPS could be known from extrapolation using only the reception signature.

According to a fifth implementation aspect of the Basic embodiment of the Signal-Comparison Based Location-Determining Method, the Registering step includes directly transferring the measurements within the portable RF communications device to a storage module therein whereat the Recording step is preformed. By contradistinction, according to a sixth implementation aspect of the Basic embodiment of the Signal-Comparison Based Location-Determining Method, the Registering step includes, via RF communications, transferring the measurements from the portable RF communications device to a storage device whereat the Recording step is preformed; and wherein the Recording step includes, via RF communications, receiving the measurements. Please note that these fifth and sixth aspects are not necessarily mutually exclusive since onboard storage on the device improves response time while offsite storage complements creation of a database of such reception space signatures.

According to a seventh implementation aspect of the Basic embodiment of the Signal-Comparison Based Location-Determining Method the Registering step allows a user to append a designation tag to the registration data--for example--denoting the data to be stored as "Home" or "Office" or "222 East Street" or the likes.

According to an eighth implementation aspect of the Basic embodiment of the Signal-Comparison Based Location-Determining Method, the Determining step includes calculating a confidence metric according to a degree of correlation between the measurements in the Monitoring step with the stored at least two measurements of the recording step. This complements our discussion of evolving signal strength reception

characteristics of the urban landscape; and also complements the detail of the preamble that any specific service area antenna may be taken out of service for repairs, upgrades, and the likes. Thus, it is preferred to introduce statistical comparisons, threshold values, heuristics, and the likes to improve a user's confidence in the accuracy of the determining step result.

Further embodiments and aspects of the instant invention may be embodied in various forms, wherein a first appurtenance embodiment (see FIG. 4) of the instant invention relates to A Signal-Comparison Based Location-Determining Database recorded on a tangible memory media -400- and having recorded thereon signal-strength location correlation data deriving from the Registering step or the Monitoring step of the Signal-Comparison Based Location-Determining Method, the Basic embodiment of the Signal-Comparison Based Location-Determining Method, and to any combination of its eight aforementioned aspects.

Now, additional embodiments and aspects of the instant invention may be embodied in various forms, wherein a second appurtenance embodiment (see FIG. 5) of the instant invention relates to An article of manufacture including a computer usable medium having computer readable program code embodied therein for Signal-Comparison Based Location-Determining, the computer readable program code in said article of manufacture including: (AA) first computer readable program code -500- for causing a computer to Register a selected location by first-causing a portable RF communications device at the selected location (i) to receive an RF communications signal from a

plurality of local fixed-location service-area antenna stations, and (ii) to measure reception signal strength respectively associated with the received signal from at least two of the plurality of antenna stations; (BB) tied to the first computer readable software, second computer readable program code -510- for causing the computer to Record the selected location by electronically storing at least two of the respective reception signal strength measurements; (CC) tied to the second computer readable software, third computer readable program code -520- for causing the computer to Monitor by second-causing a portable RF communications device (i) to receive communications signals from a plurality of respectively local fixed-location service-area antenna stations, and (ii) to measure reception signal strength associated with the signals; and (DD) tied to the third computer readable software, fourth computer readable program code -530- for causing the computer Determine if the portable RF communications device of the Monitoring step is at the selected location of the registering step by electronically comparing measurements in the monitoring step with the stored at least two measurements of the Recording step; and

Finally, please note that embodiments and aspects of the instant invention may be embodied in various forms, wherein a particularly generalized embodiment of the instant invention relates to A Signal-Comparison Based Location-Determining system (see FIG. 6), substantially as herein before described and illustrated, and characterized by using interconnected software enabled modules on at least one portable RF communications device, said modules operating in conjunction with at least two fixed-location service-area antenna stations that are respectively capable of RF communication with the at least

one device wherein the stations are substantially continuously operating, and these software modules include: (A) a registration module -600- for Registering a selected location by first-causing a portable RF communications device at the selected location (i) to receive an RF communications signal from a plurality of local fixed-location service-area antenna stations, and (ii) to measure reception signal strength respectively associated with the received signal from at least two of the plurality of antenna stations; (B) a recording module -610- for Recording the selected location by electronically storing at least two of the respective reception signal strength measurements; (C) a monitoring module -620- for Monitoring by second-causing a portable RF communications device (i) to receive communications signals from a plurality of respectively local fixed-location service-area antenna stations, and (ii) to measure reception signal strength associated with the signals; and (D) a determination module -630- for Determining if the portable RF communications device of the Monitoring step is at the selected location of the registering step by electronically comparing measurements in the monitoring step with the stored at least two measurements of the Recording step.

For the sake of good order, it is noted that the reader is now directed to recall: the aforementioned illustrative enabling embodiment (see FIG. 7) of Signal-Comparison Based Location-Determining Method--according to a simplified aspect--substantially relate to a method for determining a cell phone (or a ubiquitous computer) location comprising: (A) at a desired location--Causing -700- a cell phone (or a ubiquitous computer) to measure signal strengths from surrounding cells and to record the signal strengths measured by the cell phone (or the ubiquitous computer) from the surrounding

cells; (B) at a current location--Causing -710- a cell phone (or a ubiquitous computer) to measure the signal strengths from surrounding cells; and (C) Causing -720- the Cell phone (or ubiquitous computer) to compare the measured signal strengths from surrounding cells at the current location with the recorded signal strengths from surrounding cells at the desired location (in order to determine whether the cell phone or the ubiquitous computer of the present location is also at the desired location).

According to a first variation of the illustrative enabling embodiment, measuring signal strength includes identifying a unique ID in a portion of the signal.

According to a second variation of the illustrative enabling embodiment, the current location cell phone measuring the signal strengths from surrounding cells is done at regular time intervals or at scheduled times or a predetermined following an event or following a request.

According to a third variation of the illustrative enabling embodiment, the comparing step (C) includes comparing measured signal strengths on a cell by cell basis (for example, according to the unique ID of the first variation or according to other signal characteristics that facilitate differentiation). Preferably, two signal strengths measured by the cell phone from the same cell at the current location and the desired location are considered to be similar if their respective difference is within a predetermined threshold. Alternatively, signal strengths measured at a single location are compared to one-another so that spurious changes of RF absorbing or RF reflecting materials in the surrounding

geographical region can be accounted for and intelligently ignored--as for example will be the case if an area of dirt roads re-paved with asphalt or one of asphalt re-paved over with brick-work, etc. Now, according to a further improvement, the compared signal strengths measured by the cell phone at the current location and at the desired location are considered similar when at-least a pre-determined number of these measurements (and preferably but not necessarily with their respective IDs) are matched--thereby resulting in a determinative judgment that the cell phone has returned to the desired location. It should be noted that there is a very low probability that a cell phone (measuring a few different signal strengths at the desired location) will at some future moment be in a different location having that same combination of signal strengths. Thus, the method of the instant invention may be accomplished without resorting to ID identification or comparison--however, presumably a larger number of no-ID signals would be probabilistically necessary to be measured and conclusively matched from the desired and current locations. According to a more preferred form of this variation embodiment, the at-least pre-determined number of "these measurements" of cells are those cells with have the strongest measured signals. By way of a supplementary metric, the sum of the differences between measured signal strengths from the same cells at the current location and at the desired location, being less than a pre-determined threshold, will result in a determination that the cell phone has returned to the desired location.

According to a fourth variation of the illustrative enabling embodiment, measuring signal strength includes measuring an equivalent signal aspect characteristic such as the cell phone measuring arrival times or phases of signals arriving from surrounding cells or the

likes.

According to a fifth variation of the illustrative enabling embodiment, the comparing step (C) includes the calculating of relations between signals of cells; especially but not necessarily wherein the cells are neighboring cells. Preferably, this is wherein cells are considered neighboring cells if their signals are the strongest signals measured by the cell phone. Substantially this means the most proximate base stations antennas are substantially respectively neighbors to one-another.

Thus, the combination of measured signal strengths from surrounding cells (including possibly more distant than just "surrounding" cells' service area antennas) as measured by the cell phone at a certain location creates a unique fingerprint identifying the location.

This unique fingerprint, which unlike GPS signals is always available to the cell phone, can be used to determine that a cell phone has returned to a location it has already been to.

Now we will turn our attention to discuss other useful aspects of the embodiments of the instant invention. Since the instant invention is used to determine that a cell phone current location is the same as a location that the cell phone has already been to in the past, there is no need to translate the combination of measured signal strengths at surrounding cells to geographical coordinates. Simply stated, for the simply purposes of the cell phone, substantially matching a current antenna space reception fingerprint (or a

significant portion thereof) with a predetermined antenna space reception fingerprint (or a significant portion thereof) constitutes a return to an indeterminate coordinate space "brigin"--and this "Substantial matching" is sufficient to accomplish the most basic objectives of the instant invention.

The combination of signal strengths measured by the cell phone from surrounding cells at a specific location provides an accurate definition of the location with many advantages over existing location determination methods: [0092]1) No need to calculate geographical coordinates, which significantly reduces the amount of required calculation. [0093]2) Signal strengths can always be measured by a cell phone without the assistance of a cellular network. [0094]3) The simple calculation required to compare the signal strengths measured by a cell phone from surrounding cells at a current location and a desired location makes this method ideal for any cell phone in general and cheap cell phones that do not have a GPS and do not have the capability for significant calculation specifically.

The apparent disadvantage of the instant invention method is that it requires the cell phone to record the signal strengths at a desired location. Thus according to simplest embodiments of the instant invention, the user can not ask for a location based service by simply entering an address or a geographical coordinates. Having said that, many location based services are initiated when a user is at the location where he would like to receive the service, and therefore the suggested method's disadvantage does not limit the user for these services.

Moreover, the simple embodiment instant invention method can be used in conjunction with other location-determining methods. If geographical coordinates are initially used for the definition of a location based service, as soon as the cell phone is determined to be present at those geographical coordinates regardless of whether the cell phone determined its geographic location (using a GPS or another method) or the cellular network determines the geographic location of the cell phone or a combination, the cell phone can record the signal strengths at that geographical location and going forward instead of determining the cell phone has returned to that location by checking the geographical coordinates use the suggested invention as it requires less resources and is faster.

Accuracy-wise, the more cells a cell phone can measure the signal it receives from them, the more accurate the instant method is. Nevertheless, as described in the probabilistic considerations of the "small house" example (above), a large plurality of reception from different base station antennas is not necessarily required to provide "adequate" location identity confirmation (returning to a predetermined measured location). When it is described according embodiments of the instant invention that a cell phone measures a signal-strength from a surrounding cell, it means that the cell phone measures the strength of the signal sent by that cell's base stat ion antenna. These measurements are from the perspective of the location of the reception device (the cellular telephone, ubiquitous computer, etc.) and substantially form a instance of an antenna space reception fingerprint; even though a significant portion thereof is sufficient for many applications.

Clearly, as a cell phone user moves around he gets closer to some cells and get further away from other cells, which is reflected in the combination of signal strengths measured by the cell phone from the surrounding cells (generally speaking, the closer a cell phone is to a cell's base station the stronger the signal it will measure from the cell's base station). Exceptions, to the basic physics approximation of signal strength as proportional to a square of the distance separating the cell phone from the base station antenna, are created by the reflectivity and absorbance characteristics of materials in and along the signal path(s) there-between.

Unlike other location-determining methods, as it is the cell phone that measures the signal strengths, obstacles that impact the accuracy and availability of other location-determining methods do not impact the suggested method. Such obstacles include the non-availability of GPS signals within buildings or accuracy problems originating from the propagation of signals to cell towers and their measurement by systems located at the cell towers.

Here follows another non-limiting implementation--

The user reaches a location where he would like a certain location based service to take place every time he reaches that location.

Such a service could be having calls to his cell phone ring simultaneously both on his cell phone and the landline at the desired location every time he is determined to be at the

desired location (the user's home for example) by the software responsible of determining its location which is running on the cell phone (a geo-location based group calling service).

An example of another service will be to receive discount coupons from mall stores every time the user enters the shopping mall next to his home (the shopping mall is a desired location).

The user will stand in the location where he would like something to take place every time he reaches that place (a desired location). Using his cell phone he will choose the action that he wants to take place. The action he would like to take place will then be associated with the location where the user is standing where the location will be defined by software running on the cell phone as the combination of signal strengths measured by the cell phone from surrounding cells.

It should be noted that the surrounding cells would each be uniquely identified by the cell phone.

A cell might be identified by a cell phone by the same unique ID used by a cellular network to identify the cell (assuming the cell phone has access to the full ID) or possibly by a combination of the cell ID as recognized by the cell phone along with an LAC (Location Area Code). Obviously the cell phone may use other variables it receives from surrounding cells base stations to uniquely identify a cell by either using one variable or a

combination of variables.

The cell phone may further use the cellular network it self as one of the variables identifying a cell in order to avoid a case where two different cellular networks the cell phone is roaming between use the same IDs (as recorded by the cell phone) to identify their cells.

It should further be noted that even if cell IDs used by a cell phone will not be unique per cell (i.e. two or more cells in a cellular network will have the same ID as recorded by the cell phone), the odds of the cell phone recognizing two different locations as the same location are very low since it will require the same cell IDs to be used in two different areas and the same signal strengths to be recorded from the `same` cells in two different locations.

Once the cell phone records the signal strengths measured by the cell phone from surrounding cells at a desired location, the combination of the recorded signal strengths from surrounding cells are used as the coordinates of the desired location.

It should be noted that there is no limit on the number of desired locations that could be recorded and tracked by the cell phone.

After the cell phone records the desired location coordinates (the combination of signal strengths from surrounding cells), the cell phone will check its location as reflected by

the signal strengths from surrounding cells at specific time intervals (every 2 minutes for example) or at specific times (every 5 minutes during the day and every 15 minutes between 3 am and 6 am) or depending on the rate the user's location changes (if the user does not change its location for more than 60 minutes then the rate of checking the location can be reduced from every 5 minutes to every 20 minutes to save battery power) or at the occurrence of an event (such as the cell phone switching the base station it is registered with) or upon a request from the network to do so or upon a request from an application to do so or upon a request from the user to do so etc.

If the current location's surrounding cell IDs are different from the desired location's surrounding cell IDs then the cell phone does not need to continue the comparison, the current location is clearly not the desired location.

When the signal strengths from the cells surrounding the current location are identical to the signal strengths measured by the cell phone from the exact same cells (same cell IDs) at the desired location then the cell phone is determined to have returned to the desired location (i.e. current location=desired location) and the location based application which is pending the return of the cell phone to the desired location will be activated.

Having said that, when comparing the current location with the desired location, depending on the location based application, a threshold could be defined based on how close the current location should be to the desired location in order to activate the desired application.

The threshold could be a number that if the difference between two signal strengths measured by the cell phone from the same cell at the current location and the desired location is less than that number the measured signal strengths from the specific cell at the current location and the desired location would be considered similar.

If the difference between the measured signal strength at the current location and the measured signal strength from the same cell at the desired location for each of the surrounding cells is less than the threshold then the cell phone's current position will be considered the same as the desired location or within reasonable range and the location based application which is pending the return of the cell phone to the desired location or to its area will be activated.

In another implementation, it could further be defined that it is enough that the difference between the measured signal strength at the current location and the measured signal strength from the same cell at the desired location for at-least a pre-determined number of surrounding cells (3 cells for example) will be less than the threshold for the current location to be considered within reasonable range from the desired location and as a result to activate the location based application which its activation is pending the return of the cell phone to the area of the desired location.

In another implementation, it could further be defined that the at-least pre-determined number of cells described in the previous paragraph are those cells with the strongest

measured signals.

It should be mentioned that while the more the signal strengths from more surrounding cells are taken into account, the more accurate the location determination is, a possible implementation might take into account as little as one signal strength (the strongest one) in order to determine whether the cell phone has returned to the area of the desired location.

In a different implementation, if the sum of the differences between measured signal strengths from the same cells at the current location and desired location is less than a pre-determined threshold then it will result in determining that the cell phone has returned to the desired location or the desired location area.

It is worthwhile to analyze the suggested method in a typical GSM implementation and a typical CDMA implementation.

In a typical GSM system, GMSK modulation is used on the BCCH (Broadcast Control Channel) carrier. The BCCH carrier is continuously transmitted and without variation of RF level. Cell phones measure the received signal level from surrounding cells by tuning and listening to their BCCH carriers. The measured signal strengths (levels) are used for handover purposes.

The suggested location-determining method is therefore ideal for GSM where

surrounding cells BCCH carriers transmit at the same RF level at all times.

In a typical CDMA system such as a DS-CDMA (Direct Sequence CDMA), since all signals in a DS-CDMA system are sharing the same bandwidth and overlapping in time, the power levels of the signals transmitted by the cell phones (uplink) as well as the power level of the signals transmitted by the base station (downlink) are controlled to achieve acceptable signal-to-interference ratio (SIR) for all users (sometime it's also called C/I--Carrier to Interference ratio). Controlling the SIR helps maximize the system capacity by minimizing the probability for a call to be dropped due to a too low SIR.

While different algorithms for calculating downlink power allocation (i.e. the signal levels/strengths transmitted by a CDMA base station) exist, typically what's common to those different algorithms is the striving to achieve a minimal reasonable SIR for all cell phones connected to the base station where the noise component of the SIR at each of the cell phones is assumed to mainly be impacted by the signals transmitted by surrounding cells. Additionally, the sum of all signals transmitted by a base station to cell phones registered with the base station can not exceed the maximum power the base station transmitter is capable of.

The lower the signals transmitted by surrounding cells' base stations the better the reception at a cell's cell phones. Downlink power control aims to reduce the amount of interference in neighboring cells by adjusting the power of each cell's base station transmitter.

Substantially, this outlines an iterative process where the signal strengths transmitted by base stations of neighboring cells are correlated.

The question then, how would the location determination method described here handle measured signal strengths of surrounding cells that vary as a function of cell phone traffic in a CDMA system?

One way could be to have the cell phone record signal strengths at a desired location at different times of day at different days of the week since cell phone traffic at cells is known to have a repetitive pattern. For example, on Monday between 12 pm and 2 pm people will use their cell phone to make and receive calls at a specific cell in approximately the same way as they will use their cell phones on the following Mondays between 12 pm and 2 pm, which means that the downlink transmitted power by this cell and the neighboring cells will be approximately the same on Monday between 12 pm and 2 pm as well as on the following Mondays between 12 pm and 2 pm since the downlink power is a function of cell phone traffic and the downlink transmitted power of neighboring cells is correlated.

Having said that, ideally a user will identify a desired location to the cell phone only once at one point in time and will not need to repeat the identification of the desired location in different times.

Taking into account the correlation of downlink transmitted signals of neighboring cells, by calculating the relations between the measured signal strengths of neighboring cells, a cell phone can identify that it returned to a desired location by comparing the calculated relations between neighboring cells at current location with the calculated relations between neighboring cells at the desired location. Since the correlation between downlink transmitted signals by cells' base stations is among neighboring cells and a cell phone will not know which of the measured signals belong to neighboring cells and which to non-neighboring cells, in one suggested implementation the cell phone can assume that the cells transmitting the strongest signals are the cells closest to the cell phone and therefore neighboring cells. The cell phone will therefore take into account only the signal strengths of the cells transmitting the strongest signals as those cells will be assumed neighboring cells by the cell phone, therefore their signals correlated and therefore the relations between those cells' signals will represent the cell phone's location. The number of cells assumed neighboring cells could vary depending on factors such as total number of signal strengths measured by the cell phone that could indicate whether the cell phone is in an urban area or in a rural area or a measured signal strength exceeding a threshold calculated by dividing a measured signal strength by the strongest measured signal at the current location etc.

An example of the above suggested implementation will be--a location is identified to the cell phone as a desired location by the cell phone owner.

The cell phone measures the signal strengths of surrounding cells. The cell phone

measures 10 signals from 10 surrounding cells. The cell phone chooses the 4 cells with the strongest signals as neighboring cells (cells #1, 4, 6, 9). The cell phone calculates the ratio between the chosen 4 signals by dividing the 3 less strong signals by the strongest signal (assuming that cell #4 has the strongest signal). The cell phone records the 3 relations (cell #1 signal/cell #4 signal, cell #6 signal/cell #4 signal and cell #9 signal/cell #4 signal). The cell phone may further record the measured signal strengths of the 4 chosen cells. From that point in time onward, the cell phone checks to see if signals from unique cells #1, 4, 6 and 9 can be measured by the cell phone. If the cell phone can measure signals from cells #1, 4, 6 and 9, the cell phone calculates the relations between cells #1, 6 and 9 to cell #4. If the calculated relations at the current location are identical to the recorded relations the cell phone determines that it has returned to the desired location. The cell phone can determine that it has returned to the desired location or to an area close enough to be considered the desired location by subtracting each of the relations at the current location from each of the corresponding relations at the desired location and demanding that the each of the subtraction for each of the relations does not exceed a certain threshold or that the sum of the subtractions does not exceed a certain threshold or alternatively any other formula.

The above example assumes that one cell (cell #4 in the above example) will always have the strongest signal at the desired location (while the signal of cell #4 will vary as a function of number of subscribers at neighboring cells the assumption is it will always be relatively the strongest). This assumption will not be true in the case the cell phone is located at equal distances to the base stations of 2 cells' base stations--cell #4 and cell #1.

The cell phone might be registered with cell #4 at 2 pm on Monday when the number of subscribers at cell #1 is very high and the number of subscribers at cell #4 is low but at 7 pm the same day when the number of subscribers at cell #1 will be low and the number of subscribers at cell #4 will be very high the cell phone will be registered with cell #1 at the same physical location. Accordingly, if the cell phone would have measured the signal strengths at 2 pm and 7 pm cell #4 signal would have come stronger only at 2 pm while at 7 pm the signal of cell #1 would have come stronger. We therefore need to accommodate this case in the location determination algorithm when used in a CDMA system or other systems with the same characteristics. When a cell phone is on the border of 2 cells, the signals as measured by the cell phone will be close to each other. In one possible implementation the algorithm can allow a higher threshold (which will make relations not as close when subtracted still less than the threshold that was made higher). In another possible implementation the cell phone can divide the signal strength of the chosen cells not by the signal of the strongest cell but by the sum of the signals of the 2 strongest cells if the two strongest cells are close enough in strength. For example, if at 2 pm the signal strength of cell #4 is only slightly stronger than the signal strength of cell #1, the cell phone will calculate the following relations: [0135]cell #6 signal/(cell #4 signal+cell #1 signal) [0136]cell #9 signal/(cell #4 signal+cell #1 signal)

Obviously, the above are just suggested implementations and other possible implementations using other formulas are possible.

It was mentioned that more measurements taken at the desired location at different points

in time could help improve the location determination. It was further mentioned that the user will ideally identify a location as a desired location to a cell phone only once. Since in many cases a desired location is a user's home or office and after the identification of a location as a desired location the user stays in that location for several hours, a cell phone can continue and measure signal strengths at a desired location hours after the location was identified to the cell phone as a desired location.

The cell phone will be able to determine that it is still at the desired location by measuring the rate the measured signal strengths change and the relations among them. When a user walks or drives the rate a signal strength of a specific cell changes will be faster than if the user stayed in one place. The relations between the signal strengths of surrounding cells will also change when the user walks or drives away from the desired location. The above therefore enable a cell phone to gather more measurements at the desired location at different points in time without requiring the user to identify a place as a desired location more than once.

The suggested method will also be able to recognize changes in the cellular network such as the addition of a new cell or the cancellation of a cell or a retune of the network since the changes will mainly be reflected in one or two measured cells' signal strengths or the relations of one or two measured signal strengths to the strongest measured signal etc.

It should be noted that depending on the desired accuracy, the range from the desired location that within the location pending service will still be activated and so forth,

different formulas and methods other than the described above might be devised to do the comparison between the measured signal strengths as measured by the cell phone from surrounding cells at the current location and desired location.

While the preferred embodiment refers to signal strengths that any cell phone can measure today, cellular networks might decide to use the described invention by using other parameters that they will make available to cell phones.

Such parameters could be for example as follows--a cellular network will broadcast from all base stations a signal which will be synchronized among the base stations (the base stations could be synchronized using GPS signals). A cell phone will measure the time the same signal will arrive from surrounding cells at a current location. The different arrival times of the same signal will reflect the distance of the cell phone to the surrounding cells. Those arrival times could be recorded by the cell phone as the coordinates of a desired location.

The same way, the cell phone recorded, measured and compared signal strengths from surrounding cells, the cell phone will record, measure and compare the arrival times from surrounding cells of the synchronized signal.

Alternatively, a cellular network may decide to send the same synchronized signal from all base stations and the cell phone will measure the phase the signals will arrive to the cell phone with from the surrounding cells and the combination of signal phases will be

used as coordinates of locations.

The same way, the cell phone recorded, measured and compared signal strengths from surrounding cells, the cell phone will record, measure and compare the phases of arriving signals from surrounding cells of the synchronized signal.

It should be noted that these are just examples, the cellular networks may decide to make another parameter or combination of parameters available to cell phones and the cell phones could use the combination of measured parameters from surrounding cells as coordinates of a location.

While the above embodiments describe the usage of the invention for cell phones, the invention can clearly be used in other embodiments where a wireless phone can choose between several networks to connect to, which means that the wireless phone can measure the signal strengths of several surrounding networks (or other parameters made available by the networks to the wireless phone).

An example of the above will be WiFi hot spots where a wireless phone can choose between connecting to any of several surrounding WiFi hot spots. The wireless phone could measure the signal strengths of the surrounding WiFi networks and use the recorded signal strengths as a unique fingerprint of its location.

Another example will be a phone that combines WiFi and cellular by routing a call over a

WiFi network or a cellular network. Such a phone can measure not only the signal strengths of the surrounding cells but also the signal strengths of surrounding WiFi networks where the combined measurements of surrounding WiFi networks and cells will possibly provide a more accurate location representation. Obviously, the formula used by the phone to combine the measurements of the WiFi networks signal strengths and the cells signal strengths could vary based on the desired accuracy, used cellular communication protocols (GSM or CDMA or other) etc, A further example, WiMax networks where a wireless phone can choose between connecting to any of several surrounding WiMax networks. The wireless phone could measure the signal strengths of the surrounding WiMax networks and use the recorded signal strengths as a unique fingerprint of its location.

The invention could also be implemented in a phone combining measurements of signal strengths (or other parameters made available by networks) from several different networks including cellular networks, WiFi networks and WiMax networks.

While the invention has been described with respect to specific examples including presently preferred modes of carrying out the invention, those skilled in the art will appreciate that there are numerous variations and permutations of the Signal-Comparison Based Location-Determining Method, described systems, and techniques that fall within the spirit and scope of the invention as set forth in the appended claims. By non-limiting example, we mention that for purposes of establishing a location fingerprint (coordinate reference) today's cellular telephone in juxtaposition to established local area base station

service antennas is substantially equivalent to a RF communications enabled ubiquitous computer in communications with fixed respective base stations antennas; or the likes. Hence, the references to a cellular telephone in the preferred embodiment may be easily extended to any device capable of receiving and measuring a plurality of EMF signals--and therewith to comply with the other aspects to the instant invention.

While privacy wise, it is preferable to measure signals, record, them, and compare them--all respectively on a portable device per se, there are many cultures that are less concerned with personal privacy issues. In such circumstances, any or all of the steps may be performed from the perspective of service area antenna(s) coordinated by server communications there between. The real distinction is that the instant invention embodiments determine that one is at a specific location from a comparison of signal strengths or like characteristics made at the same location.

In addition, the instant invention relates to embodiments (and Mutatis Mutandis to all of the aforementioned instant invention embodiment variations thereof) of A Signal-Comparison Based Location-Determining Method, operable by at least one portable RF communications device in conjunction with at least two fixed-location service-area antenna stations respectively capable of RF communication with the at least one device wherein the stations are substantially continuously operating, and the method is comprising the steps of:

(A) First-Causing a portable RF communications device at a selected location to receive

an RF communications signal from a plurality of local fixed-location GSM service-area antenna stations;

(B) First-Measuring reception signal strength respectively associated with the "First -Causing" received signal from at least two of the plurality of antenna stations;

(C) Second-Causing a portable RF communications device to receive an RF communications signal from a plurality of local fixed-location GSM service-area antenna stations;

(D) Second-Measuring reception signal strength respectively associated with the "Second -Causing" received signals; and

(E) Determining, if the portable RF communications device of the "Second-Causing" step is at the selected location of the "First-Causing" step, By electronically Comparing at least two of the respective reception signal measurements of the "First-Measuring" step with at least two of the respective reception signal measurements of the "Second-Measuring" step.

Furthermore, the instant invention also relates to embodiments (and Mutatis Mutandis to all of the aforementioned instant invention embodiment variations thereof) of A Signal-Comparison Based Location-Determining Method, operable by at least one portable RF communications device in conjunction with at least two fixed-location service-area

antenna stations respectively capable of RF communication with the at least one device wherein the stations are substantially continuously operating, and the method is comprising the steps of:

(A) First-Causing a portable RF communications device at a selected location to receive an RF communications signal from a plurality of local fixed-location CDMA service-area antenna stations;

(B) First-Measuring reception signal strength respectively associated with the "First-Causing" received signal from at least two of the plurality of antenna stations and therewith calculating respectively relative signal reception strengths;

(C) Second-Causing a portable RF communications device to receive an RF communications signal from a plurality of local fixed-location CDMA service-area antenna stations;

(D) Second-Measuring reception signal strength respectively associated with the "Second-Causing" received signals and therewith calculating respectively relative signal reception strengths; and

(E) Determining, if the portable RF communications device of the "Second-Causing" step is at the selected location of the "First-Causing" step, By electronically Comparing at least one of the calculated respective relative reception signal strengths of the "First-

Measuring" step with at least one of the calculated respective relative reception signal strengths of the "Second-Measuring" step.

Likewise, Mutatis Mutandis to all of the aforementioned instant invention embodiments and variations thereof, determinations that are based on derivatives, integrals, statistical metrics, mathematical normalizations, correlation functions, heuristic convolution functions, or the likes--are substantially consistent with the "pith and marrow" of the instant invention--because the embodiments of the instant invention are designated for the purpose of knowing a geographical location by comparing a previously known antenna space measurement (at location "1") with a current antenna space measurement (performed at location "2"), and deciding if the location of the current measurement ("2") is to be considered as being within a nominal distance from the known measurement (at "1"). Simply stated, the instant invention is verifying that a portable RF reception device is at a geographical location--if it reasonably corresponds to a known antenna space measurement for that location.

In describing the present invention, explanations are presented in light of currently accepted telecommunications theories and communications enabled ubiquitous computing models. Such theories and models are subject to changes, both adiabatic and radical. Often these changes occur because representations for fundamental component elements are innovated, because new transformations between these elements are conceived, or because new interpretations arise for these elements or for their transformations. Therefore, it is important to note that the present invention relates to

specific technological actualization in embodiments. Accordingly, theory or model dependent explanations herein, related to these embodiments, are presented for the purpose of teaching, the current man of the art how these embodiments may be substantially realized in practice. Alternative or equivalent explanations for these embodiments may neither deny nor alter their realization.

Furthermore, numbers, alphabetic characters, and roman symbols as designated herein are for convenience of explanations only, and should by no means be regarded as imposing particular order on any method steps.

INDUSTRIAL APPLICABILITY

Technical Issues: For mobile telephone devices, an ability to measure signal strength of signals received from local service area antennas and an ability to extract respective ID data from such signals is a self-evident feature. Furthermore, the mobile telephone device generally has a reasonable amount of spare computing power onboard. Thus, for the mobile telephone device and for many other RF enabled communication reception with computing capability devices, the method of the present invention is straightforward to configure using existing off-the-shelf technological components.

Ergonomic Issues: The present method allows for user privacy by choice; a feature that is not available at a comparable cost--since a cell phone with a GPS costs more than a cell phone without a GPS.

Economic Issues: The present method can be implemented on any cheap cell phone which does not include a GPS, thereby bringing location based services to the masses by reducing the price of the location determining method used by the phone. Furthermore, the present method facilitates emergency location reporting in many places where GPS fails; a feature that can not be expressed in finite monetary terms.

Claims

What is claimed is:

1. A signal-comparison based location-determining method, operable by a first portable RF communications device in conjunction with at least two fixed location service-area antenna stations capable of RF communication with the device wherein the stations are substantially continuously operating, the method comprising the steps of:

(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the communications signals;

(b) the first portable RF communication device determining if the monitored location is within proximity to a location chosen by a user of the first portable RF communication device, by electronically comparing a fingerprint of the monitored location with a fingerprint of the chosen location, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location.

2. The method of claim 1 wherein the characteristic of a signal at the location is the signal's strength, and the location fingerprint is based on at least one signal strength at the location.

3. The method of claim 2 wherein the chosen location fingerprint is based on signal strengths measured by the first portable RF communication device.

4. The method of claim 2 wherein the chosen location fingerprint is based on signal strengths measured by a second portable RF communication device, different from the first portable RF communication device.

5. The method of claim 2 wherein the chosen location fingerprint is based on signal strengths originating from a database of geographic locations and corresponding fingerprints.

6. The method of claim 5 wherein the database is stored remotely, and not on the first portable RF communication device.

7. The method of claim 5 wherein the database is built by a service provider.

8. The method of claim 5 wherein the database is built based on multiple locations, where for each location, GPS measurements and signal strength measurements are performed and the IDs of nearby cells are recognized.

9. The method of claim 8 wherein at least for some of the locations, signal strength measurements are taken at different times.

10. The method of claim 8 wherein the signal strength measurements are taken using a portable RF communication device.

11. The method of claim 10 wherein the signal strength measurements or calculation results made using the signal strength measurements, along with the cell IDs, are sent by the portable RF communication device to a server responsible for building the database of geographic locations and corresponding fingerprints.

12. The method of claim 5 wherein the chosen location fingerprint is taken from the database of geographic locations and corresponding fingerprints using a geographic location entered by the first portable RF communication device user as his chosen location.

13. The method of claim 5 wherein the chosen location fingerprint, which corresponds with a geographical location chosen by the first portable RF communication device user, is the result of extrapolating the fingerprints of locations in the database of geographic locations and corresponding fingerprints.

14. The method of claim 5 wherein the chosen location fingerprint, which corresponds with a geographical location chosen by the first portable RF communication device user, is taken from the database of geographic locations and corresponding fingerprints, said database being built using computational closure.

15. The method of claim 1 wherein the at least one ID is a cell ID.

16. The method of claim 1 wherein the first portable RF communication device is a mobile phone.

17. The method of claim 1 wherein the first portable RF communication device is a ubiquitous computer.

18. The method of claim 1 wherein the characteristic of a signal at the location is the signal's strength, and the location's fingerprint comprises at least one signal strength at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers.

19. The method of claim 1 wherein a location's fingerprint comprises at least one relation between signal characteristics at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers.

20. The method of claim 19 wherein the characteristic of a signal at the location is the signal's strength.

21. The method of claim 1 wherein the characteristic of a signal at the location is the signal's strength, and the location's fingerprint is the result of a calculation using signal strengths.

22. The method of claim 1 wherein the characteristic of a signal at the location is the signal's arrival time, and the location's fingerprint comprises at least one arrival time at the location of a signal broadcasted by nearby cell towers and the ID of at least one of the cell towers.

23. The method of claim 1 wherein the characteristic of a signal at the location is the signal's phase, and the location's fingerprint comprises at least one phase at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers.

24. The method of claim 1 wherein the monitoring step comprises 'low accuracy monitoring' and 'high accuracy monitoring'.

25. The method of claim 24 wherein 'low accuracy monitoring' includes comparing the cell IDs of the chosen location with the cell IDs of the current location.

26. The method of claim 25 wherein 'high accuracy monitoring' takes place only if cell IDs of the current location are determined to match cell IDs of the chosen location in the 'low accuracy monitoring' step.

27. The method of claim 26 wherein 'high accuracy monitoring' includes measuring a signal characteristic at the current location.

28. The method of claim 1 wherein the monitoring step is performed iteratively, with a predetermined time delay between successive iterations such that data from the monitoring step is used only if a substantial portion of the successive measurements are alike within a predetermined threshold.

29. The method of claim 2 wherein the monitored location of the first portable RF communication device is determined to be within proximity of the chosen location if the difference between measured signal strengths at the monitored location and signal strengths at the chosen location is less than a predetermined threshold.

30. A method of facilitating signal-comparison based location-determining by a portable RF communication device, comprising the steps of:

(a) building a database of geographic locations and corresponding fingerprints, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication

signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location;

(b) in response to a geographic location chosen by a portable RF communication device, providing the portable RF communication device with the corresponding fingerprint for the geographic location, which is used by the portable RF communication device in determining whether a location monitored by the portable RF communication device is within proximity to the chosen geographic location by comparing the fingerprint of the monitored location with the fingerprint of the chosen location;

wherein the monitoring of the location includes (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the communications signals;

31. The method of claim 30 wherein the characteristic of a signal at the location is the signal's strength, and the location's fingerprint comprises at least one signal strength at the location of signals broadcasted by nearby cell towers and an ID of at least one of the cell towers.

32. The method of claim 31 wherein the database is built based on multiple locations, where for each location, GPS measurements and signal strength measurements are performed and the IDs of nearby cells are recognized.

33. The method of claim 32 wherein at least for some of the locations, signal strength measurements are taken at different times.

34. The method of claim 32 wherein the signal strength measurements are taken using a portable RF communication device.

35. The method of claim 34 wherein the signal strength measurements or calculation results made using the signal strength measurements, along with the cell IDs, are sent by the portable RF communication device to a server responsible for building the database of geographic locations and corresponding fingerprints.

36. The method of claim 30 wherein the chosen location fingerprint is taken from the database of geographic locations and corresponding fingerprints using a geographic location entered by the portable RF communication device user as his chosen location.

37. The method of claim 31 wherein the chosen location fingerprint, which corresponds with a geographical location chosen by the portable RF communication device user,

is the result of extrapolating the fingerprints of locations in the database of geographic locations and corresponding fingerprints.

38. The method of claim 31 wherein the chosen location fingerprint, which corresponds with a geographical location chosen by the portable RF communication device user, is taken from the database of geographic locations and corresponding fingerprints, said database being built using computational closure.

39. The method of claim 30 wherein the at least one ID is a cell ID.

40. The method of claim 30 wherein a location's fingerprint comprises at least one relation between signal characteristics at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers.

41. The method of claim 40 wherein the characteristic of a signal at the location is the signal strength.

42. The method of claim 30 wherein the characteristic of a signal at the location is the signal's strength, and the location's fingerprint is the result of a calculation using signal strengths.

43. The method of claim 30 wherein the characteristic of a signal at the location is the signal's arrival time, and the location's fingerprint comprises at least one arrival time

at the location of a signal broadcasted by nearby cell towers and the ID of at least one of the cell towers.

44. The method of claim 30 wherein the characteristic of a signal at the location is the signal's phase, and the location's fingerprint comprises at least one phase at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers.

45. A signal-comparison based location-determining system, comprising:

(a) a first portable RF communications device communicating with at least two fixed location service-area antenna stations capable of RF communication with the device, wherein the antenna stations are substantially continuously operating;

(b) software residing on the portable RF communications device, said software causing the portable RF communications device to monitor its location by (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the communications signals;

(c) software residing on the portable RF communication device, said software causing the portable RF communication device to determine if the monitored location is within proximity to a location chosen by a user of the portable RF communication device, by electronically comparing a fingerprint of the monitored location with a fingerprint of the chosen location, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location.

46. A system for facilitating signal-comparison based location-determining by a portable RF communication device, comprising:

(a) a computer;

(b) a database residing on the computer and containing geographic locations and corresponding fingerprints, wherein the fingerprint of a given location is a group of figures identifying the location, which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location;

(c) wherein the computer, in response to a geographic location chosen by a portable RF communication device, provides the portable RF communication

device with the corresponding fingerprint for the geographic location, which is used by the portable RF communication device to determine whether a location monitored by the portable RF communication device is within proximity to the chosen geographic location by comparing the fingerprint of the monitored location with the fingerprint of the chosen location;

wherein the monitoring of the location includes (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the communications signals.

Abstract

At least one portable RF communications device in conjunction with at least two fixed-location service-area antenna stations respectively capable of RF communication with the at least one device performs the steps of: (I) using a portable device at a selected location to measure RF communications signals from the plurality of local fixed-location service-area antenna stations and electronically storing at least two of the respective reception signal strength measurements; and (II) monitoring a portable device location by causing the device to measure reception signal strength associated with local fixed-location service-area antenna stations signals, and to electronically compare these measurements with the stored at least two measurements.

Figure 1

100 → 110

Figure 2

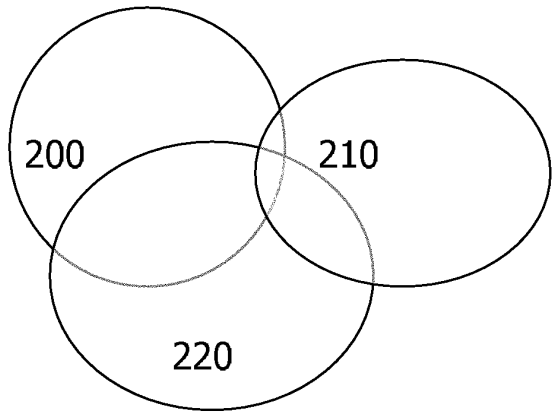

Figure 3

300 → 310 → 320 → 330

Figure 4

400

Figure 5

500 → 510 → 520 → 530

Figure 6

600 ←→ 610 ←→ 620 ←→ 630

Figure 7

700 → 710 → 720

PTO/SB/01 (08-03)
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DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

[X] Declaration Submitted With Initial Filing *OR* [ ] Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	
First Named Inventor	SHKEDI, Roy
COMPLETE IF KNOWN	
Application Number	
Filing Date	
Art Unit	
Examiner Name	

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Signal Comparison-Based Location Determining Method

(Title of the Invention)

the specification of which

[X] is attached hereto

OR

[ ] was filed on (MM/DD/YYYY) _____ as United States Application Number or PCT International Application Number _____ was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? Yes	No
			[ ]	[ ]	[ ]
			[ ]	[ ]	[ ]
			[ ]	[ ]	[ ]
			[ ]	[ ]	[ ]

[ ] Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

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DECLARATION — Utility or Design Patent Application

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Country	Telephone	Fax	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR:	[ ] A petition has been filed for this unsigned inventor		
Given Name (first and middle [if any]) Roy	Family Name or Surname SHKEDI		
Inventor's Signature Roy Shkedi	Date 02/25/2010		
Residence: City New York	State NY	Country US	Citizenship IL
Mailing Address 69-11 Yellowstone Blvd., Apt. A-35			
City New York	State NY	ZIP 11375	Country US
NAME OF SECOND INVENTOR:	[ ] A petition has been filed for this unsigned inventor		
Given Name (first and middle [if any])	Family Name or Surname		
Inventor's Signature	Date		
Residence: City	State	Country	Citizenship
Mailing Address			
City	State	ZIP	Country

[ ] Additional inventors or a legal representative are being named on the _____ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.

PTO/SB/96 (07-09)
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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: BROADPHONE, LLC

Application No./Patent No.: 12/720,362 Filed/Issue Date: 03/09/2010

Titled: Signal comparison-based location determining method

BROADPHONE, LLC, a Delaware limited liability company
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.

states that it is:

1. [X] the assignee of the entire right, title, and interest in;

2. [ ] an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is _____ %); or

3. [ ] the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)

the patent application/patent identified above, by virtue of either:

A. [X] An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 027119, Frame 0339, or for which a copy therefore is attached.

OR

B. [ ] A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
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3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[ ] Additional documents in the chain of title are listed on a supplemental sheet(s).

[X] As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (*i.e.*, a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Signature: [signature] Date: November 21, 2011

Printed or Typed Name: Aubrey Balkind Title: CEO

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 3

Complete if Known	
Application Number	CON of S.N. 12/270,362
Filing Date	04/16/2012
First Named Inventor	Shkedi, Roy
Art Unit	2617
Examiner Name	Phuong, Dai
Attorney Docket Number	24-CON2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 7640288	12-29-2009	Yao et al.	
		US- 7433694	10-07-2008	Morgan et al.	
		US- 7414988	08-19-2008	Jones et al.	
		US- 7305245	12-04-2007	Alizadeh-Shabdiz et al.	
		US- 7403762	07-22-2008	Morgan et al.	
		US- 7502620	03-10-2009	Morgan et al.	
		US- 7493127	02-17-2009	Morgan et al.	
		US- 7474897	01-06-2009	Morgan et al.	
		US- 7471954	12-30-2008	Brachet et al.	
		US- 7515578	04-07-2009	Alizadeh-Shabdiz et al.	
		US- 7551579	06-23-2009	Alizadeh-Shabdiz et al.	
		US- 7551929	06-23-2009	Alizadeh-Shabdiz et al.	
		US- 7768963	08-03-2010	Alizadeh-Shabdiz	
		US- 7769396	08-03-2010	Alizadeh-Shabdiz et al.	
		US- 7818017	10-19-2010	Alizadeh-Shabdiz et al.	
		US- 7835754	11-16-2010	Alizadeh-Shabdiz et al.	
		US-			
		US-			
		US-			

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]

Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 2 of 3

Complete if Known	
Application Number	CON of S.N. 12/270,362
Filing Date	04/16/2012
First Named Inventor	Shkedi, Roy
Art Unit	2617
Examiner Name	Phuong, Dai
Attorney Docket Number	24-CON2

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US- 7057556	06-06-2006	Hall et al.	
		US- 7050786	05-23-2006	Caci	
		US- 6972717	12-06-2005	Sollenberger et al.	
		US- 6674403	01-06-2004	Gray et al.	
		US- 8073565	12-06-2011	Johnson	
		US- 7593722	09-22-2009	Jagadeesan et al.	
		US- 20080039114	02-14-2008	Phatak et al.	
		US- 7096030	08-22-2006	Huomo	
		US- 7035647	04-25-2006	de Verteuil	
		US- 8131464	03-06-2012	Farmer et al.	
		US- 7102570	09-05-2006	Bar-On et al.	
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FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T[6]
		EP12419093	09-18-2002	L.M. Ericsson		

Examiner Signature		Date Considered	

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet	3	of	3

Complete if Known	
Application Number	N/A (Continuation of 12/720,362)
Filing Date	04/16/2012
First Named Inventor	Shkedi, Roy
Group Art Unit	
Examiner Name	
Attorney Docket Number	24-CON2

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
		Motorola, Inc., Overview of 2G LCS Technologies and Standards (3GPP TSG SA2 LCS Workshop LCS-010019 - London, UK, 11 - 12 January 2001).	
		Y. Zhao, "Mobile Phone Location Determination and Its Impact on Intelligent Transportation Systems," IEEE Transactions on Intelligent Transportation Systems, vol. 1, no. 1, pp. 55-64, Mar. 2000.	
		A Survey and Taxonomy of Location Systems for Ubiquitous Computing - by Jeffrey Hightower and Gaetano Borriello (Technical Report UW-CSE 01-08-03).	
		SpotON: An Indoor 3D Location Sensing Technology Based on RF Signal Strength - by Jeffrey Hightower and Gaetano Borriello - (UW CSE Technical Report #2000-02-02).	

Examiner Signature		Date Considered	

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[1] Unique citation designation number. [2] Applicant is to place a check mark here if English language Translation is attached.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Shkedi, Roy	Art Unit	:	2617 *
Serial No.	:	_____	Examiner	:	Phuong, Dai *
Filing Date	:	04/16/2012	** In parent application S.N. 12/720,362*		
Title	:	Signal Comparison-Based Location Determining Method			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – April 16, 2012

PRELIMINARY AMENDMENT

Dear Sir:

Assignee requests entry of the following amendments and consideration of the following remarks in this continuation application.

Amendments to the specification begin on page 2.

Amendments to the claims begin on page 3.

Remarks begin on page 4.

Amendments

IN THE SPECIFICATION:

Please amend the paragraph beginning at page 1, line 4, as follows:

This application is a continuation of application Serial No. 12/720,362, filed March 9, 2010, now U.S. Patent 8,170,583, which is a continuation of application ~~Ser.~~ Serial No. 11/533,238, filed ~~on~~ September 19, 2006, now U.S. Patent 7,706,811, and entitled "Signal Comparison-Based Location Determining Method". The disclosures of said applications and ~~its~~ their entire file wrappers (included all prior art references cited therewith) are hereby specifically incorporated herein by reference in their entirety as if set forth fully herein. Furthermore, a portion of the disclosure of this patent document contains material which is subject to copyright protection. The copyright owner has no objection to the facsimile reproduction by anyone of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent file or records, but otherwise reserves all copyright rights whatsoever.

IN THE CLAIMS:

Please amend the claims as follows:

1. (Original) A signal-comparison based location-determining method, operable by a first portable RF communications device in conjunction with at least two fixed location service-area antenna stations capable of RF communication with the device wherein the stations are substantially continuously operating, the method comprising the steps of:

(a) the first portable RF communications device monitoring its location by (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the communications signals;

(b) the first portable RF communication device determining if the monitored location is within proximity to a location chosen by a user of the first portable RF communication device, by electronically comparing a fingerprint of the monitored location with a fingerprint of the chosen location, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location.

2. (Original) The method of claim 1 wherein the characteristic of a signal at the location is the signal's strength, and the location fingerprint is based on at least one signal strength at the location.

3. (Original) The method of claim 2 wherein the chosen location fingerprint is based on signal strengths measured by the first portable RF communication device.

4. (Original) The method of claim 2 wherein the chosen location fingerprint is based on signal strengths measured by a second portable RF communication device, different from the first portable RF communication device.

5. (Original) The method of claim 2 wherein the chosen location fingerprint is based on signal strengths originating from a database of geographic locations and corresponding fingerprints.

6. (Original) The method of claim 5 wherein the database is stored remotely, and not on the first portable RF communication device.

7. (Original) The method of claim 5 wherein the database is built by a service provider.

8. (Canceled)

9. (Canceled)

10. (Canceled)

11. (Canceled)

12. (Original) The method of claim 5 wherein the chosen location fingerprint is taken from the database of geographic locations and corresponding fingerprints using a geographic location entered by the first portable RF communication device user as his chosen location.

13. (Canceled)

14. (Canceled)

15. (Original) The method of claim 1 wherein the at least one ID is a cell ID.

16. (Original) The method of claim 1 wherein the first portable RF communication device is a mobile phone.

17. (Canceled)

18. (Original) The method of claim 1 wherein the characteristic of a signal at the location is the signal's strength, and the location's fingerprint comprises at least one signal strength at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers.

19. (Original) The method of claim 1 wherein a location's fingerprint comprises at least one relation between signal characteristics at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers.

20. (Canceled)

21. (Original) The method of claim 1 wherein the characteristic of a signal at the location is the signal's strength, and the location's fingerprint is the result of a calculation using signal strengths.

22. (Original) The method of claim 1 wherein the characteristic of a signal at the location is the signal's arrival time, and the location's fingerprint comprises at least one arrival time at the location of a signal broadcasted by nearby cell towers and the ID of at least one of the cell towers.

23. (Original) The method of claim 1 wherein the characteristic of a signal at the location is the signal's phase, and the location's fingerprint comprises at least one phase at the location of signals broadcasted by nearby cell towers and the ID of at least one of the cell towers.

24. (Canceled)

25. (Canceled)

26. (Canceled)

27. (Canceled)

28. (Original) The method of claim 1 wherein the monitoring step is performed iteratively, with a predetermined time delay between successive iterations such that data from the monitoring step is used only if a substantial portion of the successive measurements are alike within a predetermined threshold.

29. (Canceled)

30. (Original) A method of facilitating signal-comparison based location-determining by a portable RF communication device, comprising the steps of:

(a) building a database of geographic locations and corresponding fingerprints, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location;

(b) in response to a geographic location chosen by a portable RF communication device, providing the portable RF communication device with the corresponding fingerprint for the geographic location, which is used by the

portable RF communication device in determining whether a location monitored by the portable RF communication device is within proximity to the chosen geographic location by comparing the fingerprint of the monitored location with the fingerprint of the chosen location;

wherein the monitoring of the location includes (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the communications signals.

31. (Original) The method of claim 30 wherein the characteristic of a signal at the location is the signal's strength, and the location's fingerprint comprises at least one signal strength at the location of signals broadcasted by nearby cell towers and an ID of at least one of the cell towers.

32. (Original) The method of claim 31 wherein the database is built based on multiple locations, where for each location, GPS measurements and signal strength measurements are performed and the IDs of nearby cells are recognized.

33. (Canceled)

34. (Canceled)

35. (Canceled)

36. (Canceled)

37. (Canceled)

38. (Canceled)

39. (Canceled)

40. (Canceled)

41. (Canceled)

42. (Canceled)

43. (Canceled)

44. (Canceled)

45. (Original) A signal-comparison based location-determining system, comprising:

(a) a first portable RF communications device communicating with at least two fixed location service-area antenna stations capable of RF communication with the device, wherein the antenna stations are substantially continuously operating;

(b) software residing on the portable RF communications device, said software causing the portable RF communications device to monitor its location by (i) receiving communications signals from a plurality of local fixed-location service-area antenna stations, (ii) identifying at least one ID within at least one of the received communications signals, and (iii) measuring a signal characteristic associated with the communications signals;

(c) software residing on the portable RF communication device, said software causing the portable RF communication device to determine if the monitored location is within proximity to a location chosen by a user of the portable RF communication device, by electronically comparing a fingerprint of the monitored location with a fingerprint of the chosen location, wherein the fingerprint of a given location is a group of figures identifying the location which include at least one figure which is an ID within a communication signal received at the given location and at least one figure which is based on a characteristic of a signal received at the location.

Remarks

Upon entry of this amendment, there will be twenty (20) total claims pending, of which, three (3) are independent claims. Therefore, pursuant to 37 CFR § 1.53(f)(3), no excess claims fees are due.

Assignee cancels all but twenty claims from the parent application, solely to avoid excess claims fees and plans to file a Supplemental Preliminary Amendment as soon as possible to present new claims for prosecution in this application.

Please feel free to telephone the undersigned if anything further is required to advance prosecution of this application.

Respectfully submitted,
BROADPHONE, LLC
by its attorney

Dated: April 16, 2012

/Louis J. Hoffman/
Louis J. Hoffman
Reg. No. 38,918

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Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Filer:	Louis J. Hoffman/Donald Hertz
Attorney Docket Number:	24-CON2

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	95	95
Utility Search Fee	2111	1	310	310
Utility Examination Fee	2311	1	125	125
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**530**

Electronic Acknowledgement Receipt

EFS ID:	12554829
Application Number:	13448309
International Application Number:	
Confirmation Number:	1020
Title of Invention:	Signal Comparison-Based Location Determining Method
First Named Inventor/Applicant Name:	Roy Shkedi
Customer Number:	26362
Filer:	Louis J. Hoffman/Donald Hertz
Filer Authorized By:	Louis J. Hoffman
Attorney Docket Number:	24-CON2
Receipt Date:	16-APR-2012
Filing Date:	
Time Stamp:	21:29:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$530
RAM confirmation Number	7002
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Transmittal of New Application	12-04-16-Broadphone-CON2-App_Trans.pdf	50649 fe1110e7c4a1ff64bed37518742e9250bda5a65e	no	1
Warnings:					
Information:					
2		Broadphone-SPEC_from_parent_SN12720362.pdf	2480250 6b0426fbb2d814473ea7057e6179186aab5054eb	yes	72
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	59	
	Claims		60	71	
	Abstract		72	72	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	Broadphone-Drawing_from_parent_SN12720362.pdf	14299 667165eabf60f979b2f5962464bfdd9000b353d1	no	1
Warnings:					
Information:					
4	Oath or Declaration filed	Broadphone-Shedi_Declaration_from_parent_SN12720362.pdf	115362 1fb510a79371c729c3ad9013f878cf8e49890a02	no	2
Warnings:					
Information:					
5	Assignee showing of ownership per 37 CFR 3.73(b).	Broadphone-CON2-Owner_Stmt-copy_from_parent.pdf	90858 b5eec54dd370b484e4a5c0b8770a73471ccb262d	no	1
Warnings:					
Information:					
6	Power of Attorney	Broadphone-CON2-POA-copy_from_parent.pdf	87038 6983c43291accec1c5647303201f3579bca4fe71	no	1
Warnings:					
Information:					
7	Transmittal Letter	12-04-16-Broadphone-CON2-IDS_Cover.pdf	19419 479c7a12633856fbee15d9cab920ea0fff3090ff	no	1
Warnings:					
Information:					

8	Information Disclosure Statement (IDS) Form (SB08)	12-04-16-Broadphone-CON2-IDS.pdf	112460 14f03794b9610585c935a56d7aa5049279889d00	no	3
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
9	Preliminary Amendment	12-04-16-Broadphone-CON2-Prelim_Amend.pdf	40629 6725de3888c5a598664454502a71aaf460fa1988	no	8
Warnings:					
Information:					
10	Fee Worksheet (SB06)	fee-info.pdf	32731 8f47ff9a6cbe6463f2287212fa1916f4e1a6298c	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	3043695	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

*** Copy from parent application for continuation filed 04/16/2012 ***

PTO/SB/81 (01-09)
Approved for use through 11/30/2011. OMB 0651-0035
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POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS		
	Application Number	12/720,362
	Filing Date	03/09/2010
	First Named Inventor	Shkedi, Roy
	Title	Signal comparison-based location...
	Art Unit	2617
	Examiner Name	Phuong, Dai
	Attorney Docket Number	24-CON

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith: 26362

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified application to:

☒ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

I am the:

☐ Applicant/Inventor.

OR

☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____.

SIGNATURE of Applicant or Assignee of Record			
Signature		Date	November 21, 2011
Name	Aubrey Balkind	Telephone	(212) 965-0099
Title and Company	Broadphone, LLC by its CEO		

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	Shkedi, Roy	Art Unit	:	2617 *
Serial No.	:	_____	Examiner	:	Phuong, Dai *
Filing Date	:	04/16/2012	** In parent application S.N. 12/720,362*		
Title	:	Signal Comparison-Based Location Determining Method			

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Filed via EFS – April 16, 2012

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

Assignee discloses the references listed on forms PTO/SB/08 attached to this document. All references listed were cited in parent application Serial No. 12/720,362, therefore, pursuant to Office Rules, copies of those references are not included.

If the Office has any questions, please feel free to contact applicant's undersigned attorney of record.

Respectfully submitted,
BROADPHONE, LLC
by its attorney

Dated: April 16, 2012

/Louis J. Hoffman/
Louis J. Hoffman
Reg. No. 38,918

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