

SEQUENCE LISTINGS AND TABLES RELATED THERETO IN INTERNATIONAL APPLICATIONS FILED IN THE U.S. RECEIVING OFFICE

The Administrative Instructions (AIs) under the Patent Cooperation Treaty (PCT), in force as of July 1, 2009, contain important changes relating to the manner of filing, and applicable fees for, sequence listings and/or tables related thereto (sequence-related tables) in international applications. The complete text may be accessed at <http://www.wipo.int/pct/en/texts/index.htm>.

Effective July 1, 2009, Part 8 and Annex C-bis will no longer form part of the AIs. Part 8 was introduced in 2001 as a temporary solution to problems arising from the filing of very large sequence listings on paper and provided for a *sequence listing forming part of the international application* to be filed in electronic form on physical medium (e.g., CD), together with the remainder of the application on paper. In 2002, Part 8 was expanded to include sequence-related tables and Annex C-bis was added to provide technical requirements. All applicants may now file complete international applications in electronic form, eliminating the need for these temporary provisions.

I. AIS PART 8 AND ANNEX C-BIS DELETED AS OF JULY 1, 2009

- A) Sequence-related tables cannot be filed as a separate part of the description or in text format. They must be provided as an integral part of the international application either:
- in PDF format as part of an international application filed in electronic form via EFS-Web; or
 - on paper as part of an international application filed on paper.
- B) A *sequence listing forming part of an international application* may be provided either:
- in electronic form, as part of an international application filed in electronic form via EFS-Web, in
 - Annex C/ST.25 text format (preferred), or
 - PDF format; or
 - on paper as part of an international application filed on paper.
- C) A *sequence listing not forming part of the international application* (for search under PCT Rule 13ter) in Annex C/ST.25 text format
- is not required where the *sequence listing forming part of the international application* was filed in Annex C/ST.25 text format as part of an international application filed in electronic form via EFS-Web
 - is required for search where the *sequence listing forming part of the international application* was filed in PDF
 - is required for search on physical medium (e.g., CD) where the *sequence listing forming part of the international application* was filed on paper as part of an international application filed on paper.

II. CALCULATION OF THE INTERNATIONAL FILING FEE AND FEE REDUCTION UNDER AI § 707

- A) A sequence-related table must form an integral part of the international application and will incur FULL page fees with no upper limit.
- B) A *sequence listing forming part of an international application* filed:
- via EFS-Web in Annex C/ST.25 text format will incur NO page fees;
 - on paper or in PDF format will incur FULL page fees with no upper limit.

III. AVAILABILITY OF SEQUENCE LISTINGS SUBMITTED FOR SEARCH UNDER PCT RULE 13TER

International Searching Authorities will be required to transmit to the International Bureau a copy of an Annex C/ST.25 text format sequence listing provided for search under PCT Rule 13ter. Any such sequence listing will be made available on PATENTSCOPE® (*sequence listings forming part of the international application* are already available).

IV. JULY 2009 REQUEST (PCT/RO/101)

The Request now has two options for the last sheet: one for paper filings; and one for EFS-Web filings. The July 2009 Request may be accessed at <http://www.wipo.int/pct/en/forms/index.htm>

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
WILLIAM H. BOLLMAN
MANELLI DENISON & SELTER PLLC
2000 M STREET, NW, 7TH FLOOR
WASHINGTON, DC 20036

PCT

NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing
(day/month/year)

14 JAN 2011

Applicant's or agent's file reference

20-317

IMPORTANT NOTIFICATION

International application No.

International filing date (day/month/year)

Priority date (day/month/year)

PCT/US09/05575

13 October 2009 (13.10.2009)

14 October 2008 (14.10.2008)

Applicant

TELECOMMUNICATION SYSTEMS, INC.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the IPEA/ US

Mail Stop PCT, Attn: IPEA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
Facsimile No. 572-273-3201

Authorized officer

KEN WIEDER

Telephone No. (571) 272.2986

Form PCT/IPEA/416 (January 2004)

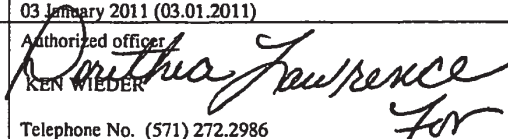
PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 20-317	FOR FURTHER ACTION		See Form PCT/IPEA/416																								
International application No. PCT/US09/05575	International filing date (day/month/year) 13 October 2009 (13.10.2009)	Priority date (day/month/year) 14 October 2008 (14.10.2008)																									
International Patent Classification (IPC) or national classification and IPC IPC: G08B 1/08(2006.01) USPC: 340/530.13																											
Applicant TELECOMMUNICATION SYSTEMS, INC.																											
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>2</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☐ (sent to the applicant and to the International Bureau) a total of ___ sheets, as follows: ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions). 4. This report contains indications relating to the following items: <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">☒</td> <td style="width: 20%;">Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td>☐</td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td>☐</td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td>☐</td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td>☒</td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td>☐</td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td>☐</td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td>☐</td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>				☒	Box No. I	Basis of the report	☐	Box No. II	Priority	☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	☐	Box No. IV	Lack of unity of invention	☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	☐	Box No. VI	Certain documents cited	☐	Box No. VII	Certain defects in the international application	☐	Box No. VIII	Certain observations on the international application
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☐	Box No. VI	Certain documents cited																									
☐	Box No. VII	Certain defects in the international application																									
☐	Box No. VIII	Certain observations on the international application																									
Date of submission of the demand 16 April 2010 (16.04.2010)		Date of completion of this report 03 January 2011 (03.01.2011)																									
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201		Authorized officer  KEN WIEDER Telephone No. (571) 272.2986																									

Form PCT/IPEA/409 (cover sheet)(April 2007)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US09/05575

Box No. I Basis of the report

1. With regard to the language, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3(a) and 23.1(b))
- ☐ publication of the international application (under Rule 12.4(a))
- ☐ international preliminary examination (under Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- ☒ the international application as originally filed/furnished
- ☒ the description:
- pages 1-11 as originally filed/furnished
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☒ the claims:
- pages 12-15 as originally filed/furnished
- pages* NONE as amended (together with any statement) under Article 19
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☒ the drawings:
- pages 1-3 as originally filed/furnished
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☒ the description, pages NONE
- ☒ the claims, Nos. NONE
- ☒ the drawings, sheets/figs NONE
- ☒ the sequence listing (*specify*): NONE
- ☒ any table(s) related to the sequence listing (*specify*): NONE

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to the sequence listing (*specify*): _____

5. ☐ This report has been established taking into account the rectification of an obvious mistake authorized by or notified to this Authority under Rule 91 (Rule 70.2(e)).

* If item 4 applies, some or all of those sheets may be marked "superseded."

Form PCT/IPEA/409 (Box No. I) (April 2007)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US09/05575

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>NONE</u>	<u>YES</u>
	Claims <u>1-13</u>	<u>NO</u>
Inventive Step (IS)	Claims <u>NONE</u>	<u>YES</u>
	Claims <u>1-13</u>	<u>NO</u>
Industrial Applicability (IA)	Claims <u>1-13</u>	<u>YES</u>
	Claims <u>NONE</u>	<u>NO</u>

2. Citations and Explanations (Rule 70.7)
Please See Continuation Sheet

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US09/05575

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

V. 2. Citations and Explanations:

Claims 1 - 13 lack novelty under PCT Article 33(2) as being anticipated by US 2006/0097866 A1 to Adamczyk et al. (hereinafter 'Adamczyk').

Regarding claims 1 and 8, Adamczyk teaches a method of providing location based proximity alert services and a location based proximity alert physical server, comprising: retrieving, at a location based proximity alert physical server, a current location of a wireless client device associated with a given restraining order target identifier (abstract, para. [0003], [0051], [0052], [0054]); accessing a law enforcement database comprising a plurality of restraining order target identifiers, each associated with a corresponding restraining order limit identifier, to obtain a relevant restraining order limit identifier associated with the given restraining order target identifier (para. [0003], [0051], [0052], [0054]); and generating a geo-proximity alert message when the current location is within a prohibited geographic area associated with the given restraining order target identifier (para. [0052], [0088]).

Regarding claims 2 and 9, Adamczyk teaches that the restraining order target identifier is a mobile identification number (MIN) (para. [0044]-[0046], [0054], [0082]).

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US09/05575

Supplemental Box

Regarding claim 3, Adamczyk teaches that the restraining order target identifier is a mobile telephone number (para. [0044]-[0046], [0054], [0082]).

Regarding claim 4, Adamczyk teaches determining a distance between the wireless client associated with the restraining order requester identifier (para. [0052]), and a wireless client requesting the geo-proximity alert message (para. [0068]).

Regarding claims 5 and 11, Adamczyk teaches that the prohibited geographic area associated with the given restraining order target identifier is a prohibited perimeter around a given school (para. [0072]).

Regarding claims 6 and 12, Adamczyk teaches that the prohibited geographic area associated with the given restraining order target identifier is a prohibited perimeter around a given park

Regarding claims 7 and 13, Adamczyk teaches that the geo-proximity alert message is an email message (para. [0082]).

Regarding claim 10, Adamczyk teaches that the restraining order violation module generates the geoproximity alert message if a distance between the wireless client associated with the restraining order requester identifier is less than a preconfigured minimum distance to a wireless client requesting the geoproximity alert message (para. [0052], [0068]).

Claims 1 - 13 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry. (para. [0072]).

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

To:
WILLIAM H. BOLLMAN
MANELLI DENISON & SELTER PLLC
2000 M STREET, NW
7TH FLOOR
WASHINGTON, DC 20036

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing (day/month/year) 03 DEC 2009	
Applicant's or agent's file reference 20-317	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US 09/05575	International filing date (day/month/year) 13 October 2009 (13.10.2009)
Applicant TELECOMMUNICATION SYSTEMS, INC.	

- ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):
When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 8270
For more detailed instructions, see the notes on the accompanying sheet.
- ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.
- ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.
- Reminders**
Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.
The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.
Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 20 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.
See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
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Electronic Patent Application Fee Transmittal				
Application Number:		14176691		
Filing Date:		10-Feb-2014		
Title of Invention:		Aggregate Location Dynamometer (ALD)		
First Named Inventor/Applicant Name:		Michael A. Cuff		
Filer:		William H Bollman		
Attorney Docket Number:		40181		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Request for Continued Examination	1801	1	1200	1200
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				1380

Electronic Acknowledgement Receipt	
EFS ID:	23395573
Application Number:	14176691
International Application Number:	
Confirmation Number:	6086
Title of Invention:	Aggregate Location Dynamometer (ALD)
First Named Inventor/Applicant Name:	Michael A. Cuff
Customer Number:	117657
Filer:	William H Bollman
Filer Authorized By:	
Attorney Docket Number:	40181
Receipt Date:	03-SEP-2015
Filing Date:	10-FEB-2014
Time Stamp:	13:56:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1380
RAM confirmation Number	222
Deposit Account	506250
Authorized User	BOLLMAN, WILLIAM H
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	2015-9-3-Transmittal-40181.pdf	18856 7527e3fae5d6506735c38900b07d5f2e225a3e60	no	1
Warnings:					
Information:					
2	Request for Continued Examination (RCE)	2015-9-3-RCE-40181.pdf	1542956 a6cb0191609d5ac8feb042e86e1c4aced1c4095	no	3
Warnings:					
Information:					
3	Transmittal Letter	2015-9-3-IDS-Trans-40181.pdf	19181 0fe9977dc97ee9c6f834b2b8ebc27eafe517cf81	no	2
Warnings:					
Information:					
4	Information Disclosure Statement (IDS) Form (SB08)	2015-9-3-IDS-40181.pdf	387333 33e6e163bb3d102ea99502efa42d2d1114c433e6	no	28
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
5	Other Reference-Patent/App/Search documents	2015-9-3-NPO1.pdf	439121 6b689eaac9e5fee5618906d55e9b5bedd70add40	no	7
Warnings:					
Information:					
6	Other Reference-Patent/App/Search documents	2015-9-3-NPO2.pdf	894997 1c20c3a3ca46852b883272b54be820974cea9e39	no	11
Warnings:					
Information:					
7	Other Reference-Patent/App/Search documents	2015-9-3-NPO3.pdf	558969 49b5d0f1c5b667cd206625ae880640bae4d520ab	no	13
Warnings:					
Information:					

8	Other Reference-Patent/App/Search documents	2015-9-3-NPO4.pdf	404133 9d1b1620ad9133cbe94b1be701bdc0c51041ba1f	no	9
Warnings:					
Information:					
9	Other Reference-Patent/App/Search documents	2015-9-3-NPO5.pdf	328668 76d7c5a33255f69633b5efdda4173e5995373120	no	6
Warnings:					
Information:					
10	Other Reference-Patent/App/Search documents	2015-9-3-NPO6.pdf	336372 2128585e906e4718be9236a97e045615dbdabce4	no	6
Warnings:					
Information:					
11	Other Reference-Patent/App/Search documents	2015-9-3-NPO7.pdf	347373 2924c4fb532fbd475c83cd85921ee5963830b661	no	7
Warnings:					
Information:					
12	Other Reference-Patent/App/Search documents	2015-9-3-NPO8.pdf	301617 fb3babfe6b10cc5c1a0a29f6b95a57fb27c4225e	no	7
Warnings:					
Information:					
13	Fee Worksheet (SB06)	fee-info.pdf	31851 5ed1657cf9335c095a8005c145821e7e81de47b	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			5611427		

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

TRANSMITTAL LETTER (Large Entity)

Application Number: **14/176,691**

Filed: **February 10, 2014**

Applicant: **CUFF**

Group Art Unit: **2641**

Examiner Name: **AJIBADE ALONAI,
Olumide**

Attorney Docket Number: **40181**

TITLE: **Aggregate Location Dynamometer (ALD)**

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

SIR:

Transmitted herewith are:

1. PTO1449 – 28 pages;
2. Information Disclosure Statement – 2 pages;
3. Request for Continued Examination – 2 pages.

In the event of non-payment or improper payment of a required fee, the Director is authorized to charge or to credit **Deposit Account No. 506250 under Order No. 40181** as required to correct the error.

Respectfully submitted,

/William H. Bollman/

William H. Bollman
Reg. No.: 36,457
Attorney for Applicant(s)

Date: September 3, 2015
**Manelli Selter PLLC
2000 M Street, NW 7th Floor
Washington, DC 20036-3307
(202) 261-1020**



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

NOTICE OF ALLOWANCE AND FEE(S) DUE

117657 7590 06/04/2015
TeleCommunication Systems, Inc.
275 West Street
Annapolis, MD 21401

EXAMINER

AJIBADE AKONAI, OLUMIDE

ART UNIT

PAPER NUMBER

2641

DATE MAILED: 06/04/2015

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/176,691	02/10/2014	Michael A. Cuff	40181	6086

TITLE OF INVENTION: Aggregate Location Dynamometer (ALD)

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	09/04/2015

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

**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
or Fax (571)-273-2885**

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)

117657 7590 06/04/2015
TeleCommunication Systems, Inc.
275 West Street
Annapolis, MD 21401

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 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.
14/176,691	02/10/2014	Michael A. Cuff	40181	6086

TITLE OF INVENTION: Aggregate Location Dynamometer (ALD)

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$960	\$0	\$0	\$960	09/04/2015

EXAMINER	ART UNIT	CLASS-SUBCLASS
AJIBADE AKONAI, OLUMIDE	2641	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, 1 _____ (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. 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 credits 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
☐ Applicant asserting small entity status. See 37 CFR 1.27
☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

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.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____
Typed or printed name _____ Registration No. _____



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.
14/176,691	02/10/2014	Michael A. Cuff	40181	6086
117657	7590	06/04/2015	EXAMINER	
TeleCommunication Systems, Inc.			AJIBADE AKONAI, OLUMIDE	
275 West Street			ART UNIT	PAPER NUMBER
Annapolis, MD 21401			2641	

DATE MAILED: 06/04/2015

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B 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. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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. 14/176,691 Examiner OLUMIDE T. AJIBADE AKONAI	Applicant(s) CUFF ET AL. Art Unit 2641	AIA (First Inventor to File) Status No
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-- 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 RCE submitted 05/04/2015.
☐ 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 13-26. 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 _____.
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/OLUMIDE T AJIBADE AKONAI/ Primary Examiner, Art Unit 2641	
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The present application is being examined under the pre-AIA first to invent provisions.

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 May 4, 2015 has been entered.

Allowable Subject Matter

2. Claims 13-26 are allowed.

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 submissions 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.

Peterson et al 20100197318.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLUMIDE T. AJIBADE AKONAI whose telephone number is (571)272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. 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.

/OLUMIDE T AJIBADE AKONAI/
Primary Examiner, Art Unit 2641

Notice of References Cited	Application/Control No. 14/176,691	Applicant(s)/Patent Under Reexamination CUFF ET AL.	
	Examiner OLUMIDE T. AJIBADE AKONAI	Art Unit 2641	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2010/0197318	08-2010	Petersen et al.	455/456.1
	B	US-			
	C	US-			
	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.

Search Notes 	Application/Control No. 14176691	Applicant(s)/Patent Under Reexamination CUFF ET AL.
	Examiner OLUMIDE T AJIBADE AKONAI	Art Unit 2641

CPC- SEARCHED		
Symbol	Date	Examiner
H04W 64/006	5/1/2014	OA
H04W4/22 4/02 4/028 76/007 4/023 24/00 64/006 4/025 24/08 64/00	6/1/2015	OA
H04L 67/22	6/1/2015	OA

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
455	404.1,404.2,456.1-457	5/1/2014	OA
455	404.1,404.2,456.1-457	11/4/2014	OA
455	404.1,404.2,405,456.6,456.2,456.3,456.5,456.6,457,435.1,435.2	6/1/2015	OA

SEARCH NOTES		
Search Notes	Date	Examiner
EAST search	5/1/2014	OA
east search	11/3/2014	OA
EAST search	6/1/2015	OA

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
455	404.1,404.2,405,456.6,456.2,456.3,456.5,456.6,457,435.1,435.2	6/1/2015	OA
H04L	67/22	6/1/2015	OA
H04W	4/22 4/02 4/028 4/023 24/00 64/00 64/006 4/025 24/08	6/1/2015	OA

	/OLUMIDE T AJIBADE AKONAI/ Primary Examiner.Art Unit 2641
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	168	((track\$3 monitor\$3 analy\$3) near3 (group set crowd multitude plurality)) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device" labtop tablet) with (emergency mob riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/01 08:51
L2	63	1 AND ((H04W4/22 OR H04W4/02 OR H04W4/028 OR H04W76/007 OR H04W4/023 OR H04W64/006 OR H04W4/025 OR H04M11/04 OR H04M2242/04 OR G06Q30/0201).CPC.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/01 08:54
L3	4	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) same (alarm alert "911") and 455/404.1,404.2,405,456.6,456.2,456.3,456.5,456.6,457.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/01 08:57
L4	3	(network and monitor and viral and alert and risk).clm. and 455/404.1,404.2,405,456.6,456.2,456.3,456.5,456.6,457,435.1,435.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/01 08:59
L5	28	((track\$3 monitor\$3 analy\$3) near3 (group set crowd multitude plurality)) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device" labtop tablet) with (emergency mob riot crowd stampede) and 455/404.1,404.2,405,456.6,456.2,456.3,456.5,456.6,457,435.1,435.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/01 09:00
L6	4	(monitor\$3 track\$3) near4 (group event crowd\$1) with viral same (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device" labtop tablet) same (emergency mob riot risk accident stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/01 09:02
L7	58	2 AND ((H04W4/22 OR H04W4/02 OR H04W4/028 OR H04W76/007 OR H04W4/023 OR H04W24/00 OR H04W64/006 OR H04W4/025 OR H04W24/08 OR H04W64/00 OR H04L67/22).CPC.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2015/06/01 09:12

			IBM_TDB			
L8	3	(network and monitor and viral and alert and risk).dm. AND ((H04W4/22 OR H04W4/02 OR H04W4/028 OR H04W76/007 OR H04W4/023 OR H04W24/00 OR H04W64/006 OR H04W4/025 OR H04W24/08 OR H04W64/00 OR H04L67/22).OPC.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/01 09:13
L9	9	("20080318591" "20090140851" "20090222388" "20100205542" "20100285814" "20100308993" "6998985" "8314683" "8442807").PN. OR ("8649806").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2015/06/01 09:13
L10	153	("20030197612" "20040077367" "20050029346" "3506791" "4611198" "4885571" "4918432" "5062151" "5218344" "5396227" "5461390" "5512879" "5640157" "5659303" "5731757" "5745037" "5796827" "5867103" "5870029" "5889474" "5892441" "5959533" "6072396" "6208247" "6208855" "6344794" "6373389" "6639516" "6774797").PN. OR ("6998985").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2015/06/01 09:13
S1	1	"13317996"	US-PGPUB; USPAT	OR	OFF	2013/09/30 11:24
S2	4	("20080318591" "20090222388" "20100308993" "6998985").PN.	US-PGPUB; USPAT	OR	OFF	2013/09/30 13:28
S3	3	(track\$3 monitor\$3) near4 (multiple plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") same (location position) same (emergency mob riot crowd stampede)	US-PGPUB; USPAT	OR	OFF	2013/09/30 13:40
S4	3	(track\$3 monitor\$3) near4 (multiple plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") same (location position) same (emergency mob riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 13:40
S5	9	((track\$3 monitor\$3) near3 crowd) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and (emergency mob riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 13:52
S6	2	("20100041391" "6400813").PN. OR ("8442807").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/09/30 13:58
S7	46	((analysis behavior monitor\$3 track\$3) near3 (group crowd)) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") same (alert\$3 emergency PSAP)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 14:01
S8	6	("20040203380" "20050192026" "20060166681" "20060250305" "20090140841" "4494119").PN. OR ("8315598").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/09/30 14:33
S9	9	((track\$3 monitor\$3) near3 crowd) with (((wireless mobile portable	US-PGPUB;	OR	OFF	2013/09/30

		cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB				14:35
S10	0	((track\$3 monitor\$3) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")) with (crowd near4 behavior)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF		2013/09/30 14:37
S11	0	((((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") with (crowd near4 behavior) and 455/456.1,456.5,404.1,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF		2013/09/30 14:38
S12	1	((((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") with (crowd near4 behavior)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF		2013/09/30 14:39
S13	1	(wireless network) with ((traffic crowd) near3 (direction movement pattern)) same (notif\$7 alert\$3) with (event accident riot mob risk danger stampede hooligan) and 455/404.1,404.2,456.1,456.5,456.6.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF		2013/09/30 14:48
S14	2	(wireless network) with ((traffic crowd) near3 (direction movement pattern)) same (notif\$7 alert\$3) and 455/404.1,404.2,456.1,456.5,456.6.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF		2013/09/30 14:49
S15	132	((cluster group aggregation traffic crowd) near3 (behavior pattern)) with (alert notif\$7) and (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	US-PGPUB; USPAT	OR	OFF		2013/09/30 14:59
S16	0	(monitor\$3 track\$3) near3 ((cluster group multiple plurality) near3 (behavior pattern)) with (alert notif\$7) and (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") with ((network wireless) near3 (traffic flow pattern)) same (predict\$3 determin\$5 detect\$3) near5 (risk accident	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF		2013/09/30 15:22

		situation incident fight riot crowd mob stampede)				
S17	2	(monitor\$3 track\$3) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") with ((network wireless) near3 (traffic flow pattern)) same (predict\$3 determin\$5 detect\$3) near5 (risk accident situation incident behavior fight riot crowd mob stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 15:25
S18	10	(monitor\$3 track\$3) near3 crowd\$1 with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 22:46
S19	16	("20050264412" "20070030144" "20070041514" "20070083409" "20070103292" "20070103294" "20070126573" "20070275690" "20070280462" "20090140851" "5960337" "6281834" "7091852" "7177623" "7233781" "7245216").PN. OR ("8314683").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/09/30 22:54
S20	0	(monitor\$3 track\$3) near3 ((network system) near2 (load traffic)) with (crowd\$1 population) near2 (activit\$3 movement moving move\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 22:58
S21	5	(monitor\$3 track\$3) near3 ((network system) near2 (load activity traffic)) with (crowd\$1 population)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:00
S22	145	dynamometer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:04
S23	2	S22 and "455"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:04
S24	26	(monitor\$3 track\$3) near3 (network system) with (viral crowd) and (455/414.1,456.1-456.6,457,404.1,404.2.ccls. or "340"/\$.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:06
S25	1	(location and dynamometer and crowd).clm. and (455/414.1,456.1-456.6,457,404.1,404.2.ccls. or "340"/\$.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:09
S26	1	(location and traffic and wireless and crowd).clm. and (455/414.1,456.1-	US-PGPUB;	OR	OFF	2013/09/30

		456.6,457,404.1,404.2.ccls. or "340"/\$.ccls.)	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			23:09
S27	1	(monitor\$3 track\$3) near3 crowd\$1 with (network near3 (traffic movement flow))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:26
S28	0	management near3 crowd\$1 with (network near3 (monitor\$3 track\$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:34
S29	6	management near3 crowd\$1 and "455"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:34
S30	3	(monitor\$3 track\$3) near3 crowd\$1 and "434"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:36
S31	2	"8649806".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 14:32
S32	153	dynamometer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:02
S33	3	S32 and "455"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:02
S34	1281	((track\$3 monitor\$3) near3 (group set plurality multiple crowd)) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and (emergency mob riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:04
S35	3	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) same (alarm alert "911") same (wireless cellular PLMN mobile) and 455/404.1,404.2,456.6,456.2,456.3,456.5,456.6,457.ccls.	US-PGPUB; USPAT; USOCR; FPRS;	OR	OFF	2014/05/01 15:07

			EPO; JPO; DERWENT; IBM_TDB			
S37	3	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) and 455/404.1,404.2,456.6,456.2,456.3,456.5,456.6,457.cds.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:08
S38	768	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:09
S39	69	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) and (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:09
S40	3	S39 AND ((H04W64/006).CPC.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:12
S41	0	((cluster group aggregation traffic crowd) near3 (behavior pattern)) with (alert notif\$7) and ((H04W64/006).CPC.)	US-PGPUB; USPAT	OR	OFF	2014/05/01 15:12
S42	32	("20020006117" "20020136242" "20020145045" "5142539" "20080132254" "7725119" "20020009101" "20020077121" "20030210280" "20050143102" "20090313099" "5317671" "6445396" "20030201931" "20050215271" "20070101005" "20050107099" "20030021398" "5581547" "6518919" "20050186968" "20070294725" "20030003936" "20030071126" "6044248" "20020147660" "20040248599" "6657660" "7053753" "20060085731" "20060107238" "4829519").PN.	US-PGPUB; USPAT	OR	OFF	2014/05/01 15:13
S43	1	"20050064889"	US-PGPUB; USPAT	OR	OFF	2014/05/01 15:29
S44	2	"8649806".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/10/20 13:15
S45	72	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) and (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:48
S46	0	(detect\$3 determin\$5 track\$3 monitor\$3) near5 (location position) near3 each near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO;	OR	OFF	2014/11/03 10:50

		hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1.ccls.	DERWENT; IBM_TDB				
S47	870	(detect\$3 determin\$5 track\$3 monitor\$3) near5 (location position) with (all each plurality) near5 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:52	
S48	620	(detect\$3 determin\$5 track\$3 monitor\$3) near5 (location position) with (all each plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:54	
S49	563	(detect\$3 determin\$5 track\$3 monitor\$3) near3 (location position) with (all each plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:56	
S50	426	(detect\$3 determin\$5 track\$3 monitor\$3) near3 (location position) near5 (all each plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:58	
S51	387	S50 and (@ad<="20110902" or @rlad<="20110902")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 11:01	
S52	0	(detect\$3 determin\$5 track\$3 monitor\$3) near3 (location position) near5 (all each) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 11:02	
S53	4	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) same (alarm alert "911") and 455/404.1,404.2,456.6,456.2,456.3,456.5,456.6,457.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 11:05	

S54	9	("20080318591" "20090140851" "20090222388" "20100205542" "20100285814" "20100308993" "6998985" "8314683" "8442807").PN. OR ("8649806").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/11/03 11:06
S55	23	(detect\$3 determin\$5 track\$3 monitor\$3) near3 (location position) near5 every near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 11:12
S56	2	"8649806".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 11:23
S57	38	(COMP "Coordinated Multipoint Transmission" "Coordinated Multipoint" "Coordinated Multi-point") with "reference signal" same (chang\$3 addition add new) with (cell "transmission point")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 11:14
S58	3	(COMP "Coordinated Multipoint Transmission" "Coordinated Multipoint" "Coordinated Multi-point") same "configuration information" same (chang\$3 addition add new switch\$3) near5 (cell\$1 "transmission point") same (((channel signal) near2 (quality strength)) RSSI CQI RSRP RSRQ SINR SINR RSS)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 11:27
S59	15	(COMP "Coordinated Multipoint Transmission" "Coordinated Multipoint" "Coordinated Multi-point") same "configuration information" same (chang\$3 addition add new switch\$3) near5 (cell\$1 "transmission point")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 11:39
S60	73	(COMP "Coordinated Multipoint Transmission" "Coordinated Multipoint" "Coordinated Multi-point") same (((channel signal) near2 (strength quality)) RSSI RSRQ RSRP SINR CINR) same (chang\$3 addition add new switch\$3) near5 (cell\$1 "transmission point")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 12:39
S61	0	(COMP "Coordinated Multipoint Transmission" "Coordinated Multipoint" "Coordinated Multi-point") with "configuration information" same (handover handoff) same (cell "transmission point")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 12:55
S62	0	("Coordinated Multipoint Transmission" "Coordinated Multipoint" "Coordinated Multi-point") with "configuration information" same (hand\$4over hand\$4off)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 13:11
S63	0	("Coordinated Multipoint Transmission" "Coordinated Multipoint" "Coordinated Multi-point") with "referene signal" same (hand\$4over hand\$4off)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 13:13

S64	115	("Coordinated Multipoint Transmission" "Coordinated Multipoint" "Coordinated Multi-point") same (hand\$4over hand\$4off)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 13:14
S65	49	S64 and ("transmission point" "reference signal" "configuration information")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 13:15
S66	4	("20020058481" "20080031368" "20110183669" "20110194632").PN. OR ("8792881").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/11/04 13:36
S67	1	"7747300".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/11/04 13:43
S68	2	"7747300".pn.",20050188089".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/11/04 13:45
S69	91	("Coordinated Multipoint Transmission" "Coordinated Multipoint" "Coordinated Multi-point") same (hand\$4over hand\$4off chang\$3 switch\$3) near3 (cell\$1 "transmission point" (access near point) (base adj station))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/04 14:28
S70	4	"20080293419".pn.",6529491".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/05 09:19
S71	5	((((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") near4 ((registration near (message request)) RREQ) with (subscription near information)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/05 09:31
S72	14	((registration near (message request)) RREQ) with (subscription near (INFO information)) and 455/435.1,435.2.cds.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/05 09:33
S73	12	S72 not S71	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/05 09:34
S74	3	"20130072165".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/05 09:45
S75	16	"8457686".pn.",8606335".pn.	US-PGPUB;	OR	OFF	2014/11/05

			USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			09:55
S76	2	"8457686".pn.",8606335".pn.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/11/05 09:55
S77	272	((track\$3 monitor\$3 analy\$3) near3 (group set crowd multitude plurality)) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device" labtop tablet) same (emergency mob riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2015/06/01 06:36

6/ 1/ 2015 9:29:31 AM

C:\Users\oajibadeakonai\Documents\EAST Workspaces\14176691.wsp

Issue Classification 	Application/Control No. 14176691	Applicant(s)/Patent Under Reexamination CUFF ET AL.	
	Examiner OLUMIDE T AJIBADE AKONAI	Art Unit 2641	

CPC					
Symbol				Type	Version
H04W	24	/	00	F	2013-01-01
H04L	67	/	22	A	2013-01-01
H04W	24	/	08	I	2013-01-01
H04W	4	/	22	A	2013-01-01
H04W	64	/	006	I	2013-01-01
H04W	4	/	023	I	2013-01-01
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CPC Combination Sets				
Symbol	Type	Set	Ranking	Version

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	14	
/OLUMIDE T AJIBADE AKONAI/ Primary Examiner.Art Unit 2641	06/01/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 14176691	Applicant(s)/Patent Under Reexamination CUFF ET AL.
	Examiner OLUMIDE T AJIBADE AKONAI	Art Unit 2641

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	456.2	456.3	456.5	456.6	457											
455	404.1	404.2	405	435.1	435.2											

NONE		Total Claims Allowed:	
		14	
(Assistant Examiner)	(Date)		
/OLUMIDE T AJIBADE AKONAI/ Primary Examiner.Art Unit 2641	06/01/2015	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 14176691	Applicant(s)/Patent Under Reexamination CUFF ET AL.
	Examiner OLUMIDE T AJIBADE AKONAI	Art Unit 2641

☐ 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	5	17												
-	2	6	18												
-	3	7	19												
-	4	8	20												
-	5	9	21												
-	6	10	22												
-	7	11	23												
-	8	12	24												
-	9	13	25												
-	10	14	26												
-	11														
-	12														
1	13														
2	14														
3	15														
4	16														

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 14	
/OLUMIDE T AJIBADE AKONAI/ Primary Examiner.Art Unit 2641 (Primary Examiner) _____ (Date) _____		O.G. Print Claim(s) 1	O.G. Print Figure 1

Application Number 	Application/Control No. 14/176,691	Applicant(s)/Patent under Reexamination CUFF ET AL.	
Document Code - DISQ		Internal Document – DO NOT MAIL	

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 05/04/2015	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:

Dorethea Lawrence

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL (Submitted Only via EFS-Web)

Application Number	14176691	Filing Date	2014-02-10	Docket Number (if applicable)	40181	Art Unit	3662
First Named Inventor	CUFF			Examiner Name	AJIBADE AKONAI, Olumide		

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 Terminal Disclaimer

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 506250

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

☒ Patent Practitioner Signature

☐ Applicant Signature

Doc code: RCEX

Doc description: Request for Continued Examination (RCE)

PTO/SB/30EFS (07-09)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Signature of Registered U.S. Patent Practitioner			
Signature	/William H. Bollman/	Date (YYYY-MM-DD)	2015-05-04
Name	William H. Bollman	Registration Number	36457

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.

Electronic Patent Application Fee Transmittal				
Application Number:		14176691		
Filing Date:		10-Feb-2014		
Title of Invention:		Aggregate Location Dynamometer (ALD)		
First Named Inventor/Applicant Name:		Michael A. Cuff		
Filer:		William H Bollman		
Attorney Docket Number:		40181		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
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:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 3 months with \$0 paid	1253	1	1400	1400
Miscellaneous:				
Request for Continued Examination	1801	1	1200	1200
Statutory or Terminal Disclaimer	1814	1	160	160
Total in USD (\$)				2760

Electronic Acknowledgement Receipt	
EFS ID:	22240267
Application Number:	14176691
International Application Number:	
Confirmation Number:	6086
Title of Invention:	Aggregate Location Dynamometer (ALD)
First Named Inventor/Applicant Name:	Michael A. Cuff
Customer Number:	117657
Filer:	William H Bollman
Filer Authorized By:	
Attorney Docket Number:	40181
Receipt Date:	04-MAY-2015
Filing Date:	10-FEB-2014
Time Stamp:	11:30:46
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 2760
RAM confirmation Number	9476
Deposit Account	506250
Authorized User	BOLLMAN, WILLIAM H
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	2015-5-4-Transmittal-40181.pdf	18895 0e97f034d45a150d11b37ff334e065de70313f2e	no	1
Warnings:					
Information:					
2		2015-5-4-Amendment-40181.pdf	58928 8937d1c0f6f91a645ad43cc616a0da5a528413bf	yes	6
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Response After Final Action		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	6	
Warnings:					
Information:					
3	Terminal Disclaimer Filed	2015-5-4-Terminal-Disclaimer1-40181.pdf	189619 3d43c03baa8cfd8c59ff62b7e34404d257c269db	no	2
Warnings:					
Information:					
4	Request for Continued Examination (RCE)	2015-5-4-RCE-40181.pdf	942651 19f93e6f7a6642cad1c3777649d7c9c2470fe405	no	3
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	34007 a1fb3221472895ff79d289d8978876e9e84643a6	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			1244100		

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

TRANSMITTAL LETTER (Large Entity)

Application Number: **14/176,691**

Group Art Unit: **2641**

Filed: **February 10, 2014**

Examiner Name: **AJIBADE**

Applicant: **CUFF et al.**

Attorney Docket Number: **40181**

TITLE: Aggregate Location Dynamometer (ALD)

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

SIR:

Transmitted herewith are:

1. Amendment – 6 pages;
2. Terminal Disclaimer – 2 pages;
3. Request for Continued Examination – 2 pages.

In the event of non-payment or improper payment of a required fee, the Director is authorized to charge or to credit **Deposit Account No. 506250 under Order No. 40181** as required to correct the error.

Respectfully submitted,

/William H. Bollman/

William H. Bollman
Reg. No.: 36,457
Attorney for Applicant(s)

Date: May 4, 2015
**Manelli Selter PLLC
2000 M Street, NW 7th Floor
Washington, DC 20036-3307
(202) 261-1020**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 14/176,691
Filed: February 10, 2014
Group Art Unit: 2641
Examiner: AJIBADE

Attorney Docket No.: 40181

IN RE PATENT APPLICATION OF:
CUFF ET AL.

TITLE: **AGGREGATE LOCATION DYNOMETER (ALD)**

May 4, 2015

AMENDMENT UNDER RULE 116

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

Responsive to the Office Action dated November 5, 2014, please
enter the following amendments and remarks in the subject application:

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-12. (canceled)

13. (previously presented) An aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer comprising:

a network monitor to monitor a wireless network for an indication of a viral event;

a location aggregator to obtain a location of each of a plurality of wireless devices associated with said viral event;

a crowd risk determinant, triggered by said network monitor, to determine a crowd risk based on an aggregation of said location of each of said plurality of wireless devices associated with said viral event; and

an alert module to initiate an alert message relating to a public safety risk determined from an analysis of said viral event.

14. (previously presented) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 13, further comprising:

a historical database maintaining a geographic region associated with said viral event.

15. (previously presented) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 14, wherein said historical databases comprises:

a plurality of acceptable crowd shapes, a crowd shape being defined by said aggregation of said location of each of said plurality of wireless devices associated with said viral event.

16. (previously presented) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 14, wherein said historical databases comprises:

a plurality of non-acceptable crowd shapes, a crowd shape being defined by said aggregation of said location of each of said plurality of wireless devices associated with said viral event.

17. (previously presented) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 14, wherein said historical databases comprises:

a configurable parameter defining a threshold of a crowd shape becoming unacceptable and thus said crowd risk.

18. (previously presented) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 14, wherein said historical databases comprises:

a plurality of crowd shape trends based on historical wireless device locations during previous viral events.

19. (previously presented) A method of alerting to a problematic crowd risk based on location based services (LBS), comprising:

monitoring wireless traffic for a forming viral event associated with a plurality of physical wireless devices within a given region;

initiating location requests to a physical location server to obtain a current location of each of said plurality of physical wireless devices;

forming a crowd shape based on an aggregation of said current location of each of said plurality of physical wireless devices;

determining a crowd risk of said crowd based on said crowd shape of said current location of each of said plurality of physical wireless devices; and

triggering a crowd alert message when said determined crowd risk is above a given threshold.

20. (previously presented) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 19, wherein:

said crowd risk of said crowd is further determined based on a movement of said crowd shape.

21. (previously presented) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 19, wherein said monitoring wireless traffic comprises:

monitoring wireless traffic at a given point in a wireless network;
and

comparing a given traffic parameter associated with said obtained current location of each of said plurality of physical wireless devices, with a historical traffic parameter associated with a previous problematic crowd formation.

22. (previously presented) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 21, wherein:

said given point is at a given base station in said wireless network.

23. (previously presented) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 21, further comprising:

logging a snapshot formation created by said current location of each of said plurality of physical wireless devices.

24. (previously presented) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 19, wherein said initiating location requests comprises:

initiating a location request for each of said plurality of physical wireless devices.

25. (previously presented) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 19, further comprising:

comparing a viral pattern of respective locations of said plurality of wireless devices to predetermined risk rules.

26. (previously presented) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 25, further comprising:

logging said viral pattern.

REMARKS

Claims 13-26 are pending in the application, original claims 1-12 having been canceled.

Double Patenting

In the Office Action, claims 13-18 were rejected on the ground of nonstatutory double patenting as allegedly being obvious over claims 1-6 of U.S. Pat. No. 8,649,806, in view of U.S. Pat. No. 7,020,440 to Watanabe; and claims 19-26 were rejected on the ground of nonstatutory double patenting as allegedly being obvious over claims 7-12 of U.S. Pat. No. 8,649,806.

Filed herewith is an appropriate Terminal Disclaimer to U.S. Pat. No. 8,649,806. It is respectfully requested that the rejection now be withdrawn.

Conclusion

It is respectfully submitted that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

/William H. Bollman/

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Washington D.C. 20036-3307

TERMINAL DISCLAIMER TO OBTAIN A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT	Docket Number (Optional) 40181
In re Application of: CUFF Application No.: 14176691 Filed: February 10, 2014 For: AGGREGATE LOCATION DYNOMETER (ALD) The applicant, <u>TeleCommunication Systems, Inc.</u>, owner of <u>100</u> percent interest 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 No. <u>8649806</u> as the term of said prior patent is presently shortened by any terminal disclaimer. The applicant 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 applicant 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. Check either box 1 or 2 below, if appropriate. 1. ☐ The undersigned is the applicant. If the applicant is an assignee, the undersigned is authorized to act on behalf of the assignee. I hereby acknowledge that any willful false statements made are punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. 2. ☒ The undersigned is an attorney or agent of record. Reg. No. <u>36457</u> <u>/William H. Bollman/</u> Signature <u>May 4, 2015</u> Date <u>William H. Bollman</u> Typed or printed name <u>Attorney of Record</u> Title <u>202-261-1000</u> Telephone Number ☒ Terminal disclaimer fee under 37 CFR 1.20(d) included. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.	

This collection of information is required by 37 CFR 1.321. 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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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.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 14/176,691	Filing Date 02/10/2014	☐ To be Mailed
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO							
APPLICATION AS FILED – PART I							
(Column 1)		(Column 2)					
FOR	NUMBER FILED	NUMBER EXTRA			RATE (\$)	FEE (\$)	
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A			N/A		
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A			N/A		
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A			N/A		
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*			X \$ =		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*			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 \$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).						
☐ 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		
APPLICATION AS AMENDED – PART II							
(Column 1)		(Column 2)		(Column 3)			
AMENDMENT	05/04/2015	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 14	Minus	** 20	= 0	X \$80 =	0
	Independent (37 CFR 1.16(h))	* 2	Minus	***3	= 0	X \$420 =	0
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						TOTAL ADD'L FEE	0
(Column 1)		(Column 2)		(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))						
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
						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.							

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.
14/176,691	02/10/2014	Michael A. Cuff	40181	6086
117657 7590 11/05/2014 TeleCommunication Systems, Inc. 275 West Street Annapolis, MD 21401			EXAMINER AJIBADE AKONAI, OLUMIDE	
			ART UNIT 2641	PAPER NUMBER
			MAIL DATE 11/05/2014	DELIVERY MODE PAPER

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.

Office Action Summary	Application No. 14/176,691	Applicant(s) CUFF ET AL.	
	Examiner OLUMIDE T. AJIBADE AKONAI	Art Unit 2641	AIA (First Inventor to File) Status No

-- 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 MONTHS 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 10/02/2014.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

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

3) ☐ 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.

4) ☐ 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*

5) ☒ Claim(s) 13-26 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☐ Claim(s) ____ is/are allowed.

7) ☒ Claim(s) 13-26 is/are rejected.

8) ☐ Claim(s) ____ is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, 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.

Application Papers

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

11) ☐ 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).

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).

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)).

** 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) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.

4) ☐ Other: ____.

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Double Patenting

1. 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 double patenting rejection is appropriate where the claims at issue 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 reference 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. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO internet Web site contains terminal disclaimer forms which may be used. Please visit <http://www.uspto.gov/forms/>. The filing date of the application will determine what form should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to <http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp>.

2. Claims 13-18 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-6 of U.S. Patent No. 8,649,806 in view of Watanabe et al 7,020,440.

3. Claims 19-26 rejected on the ground of nonstatutory double patenting as being unpatentable over claims 7-12 of U.S. Patent No. 8,649,806.

U.S. Patent No. 8,649,806	U.S. Application No. 14/176691
Claim 1. An aggregate location dynameter in a physical wireless network server, said aggregate location dynameter comprising: a network monitor to monitor a wireless network for an indication of a possible viral event; a crowd risk determinant to assess location information pertaining to a possible viral event triggered by said network monitor; and	Claim 13. (new) An aggregate location dynameter in a physical wireless network server, said aggregate location dynameter comprising: a network monitor to monitor a wireless network for an indication of a viral event; <u>a location aggregator to obtain a location of each of a plurality of wireless devices associated with said viral event;</u> a crowd risk determinant, triggered by said network monitor, to determine a crowd risk based on an aggregation of said location of each of said plurality of wireless devices

an alert module to alert in an event of a public safety risk determined from an analysis of said possible viral event.	associated with said viral event; and an alert module to initiate an alert message relating to a public safety risk determined from an analysis of said viral event.
Claim 7. A method of alerting to a problematic crowd risk with location based services (LBS), comprising: monitoring wireless traffic for a possible impending viral event <u>associated with a formation of a plurality of wireless devices</u>; requesting location information associated with said plurality of wireless devices; determining a crowd risk of said crowd based on a shape and movement of said plurality of wireless devices; and triggering alert <u>of an impending crowd problem</u> when said determined crowd risk is above a given threshold.	19. (new) A method of alerting to a problematic crowd risk based on location based services (LBS), comprising: monitoring wireless traffic for a forming viral event associated with a plurality of physical wireless devices within a given region; initiating location requests to a physical location server to obtain a current location of each of said plurality of physical wireless devices; forming a crowd shape based on an aggregation of said current location of each of said plurality of physical wireless devices; determining a crowd risk of said crowd based on said crowd shape of said current location of each of said plurality of physical wireless devices; and triggering a crowd alert message when said determined crowd risk is above a given threshold.
Claim 2	Claim 14
Claim 3	Claim 15
Claim 3	Claim 16

Claim 4	Claim 17
Claim 5	Claim 18
Claim 7	Claim 20
Claim 8	Claim 21
Claim 9	Claim 22
Claim 10	Claim 23
Claim 11	Claim 24
Claim 11	Claim 25
Claim 12	Claim 26

Claim 1 of U.S. Patent No. 8,649,806 discloses the same limitations as claim 13 of the instant application except a location aggregator to obtain a location of each of a plurality of wireless devices associated with said viral event. However, it is well known, as disclosed by Watanabe, to obtain the location of each of a plurality of wireless devices in a specific area/zone (see col. 1, lines 53-57). Therefore, it will have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Watanabe with the system of claim 1 of U.S. Patent No. 8,649,806 by using the method disclosed in Watanabe to determine the location of the wireless devices in a wireless network area/zone for the predictable result of using the location information at an area/zone to determine a crowd risk.

Conflicting claims 7 of U.S. Patent No. 8,649,806 and claim 19 of the instant application, though not identical, are not patentably distinct from each other because the patent claims include all the limitations of the instant application claims, respectively. The patent claims also include additional limitations (see underlined limitations in claim 7 of the patent in the table above). Hence, the instant application claims are generic to the species of invention covered by the respective patent claims. As such, the instant application claims are anticipated by the patent claims and are therefore not patentably distinct therefrom (See *Eli Lilly and Co. v. Barr Laboratories Inc.*, 58 USPQ2D 1869, "a later genus claim limitation is anticipated by, and therefore not patentably distinct from, an earlier species claim", *In re Goodman*, 29 USPQ2d 2010, "Thus, the generic invention is 'anticipated' by the species of the patented invention" and the instant "application claims are generic to species of invention covered by the patent claim, and since without terminal disclaimer, extant species claim preclude issuance of generic application claims").

Conclusion

4. 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 OLUMIDE T. AJIBADE AKONAI whose telephone number is (571)272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. 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.

/OLUMIDE T AJIBADE AKONAI/
Primary Examiner, Art Unit 2641

Application/Control Number: 14/176,691
Art Unit: 2641

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Notice of References Cited	Application/Control No. 14/176,691	Applicant(s)/Patent Under Reexamination CUFF ET AL.	
	Examiner OLUMIDE T. AJIBADE AKONAI	Art Unit 2641	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-7,020,440	03-2006	Watanabe et al.	455/67.11
	B	US-			
	C	US-			
	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.

Search Notes 	Application/Control No. 14176691	Applicant(s)/Patent Under Reexamination CUFF ET AL.
	Examiner OLUMIDE T AJIBADE AKONAI	Art Unit 2641

CPC- SEARCHED		
Symbol	Date	Examiner
H04W 64/006	5/1/2014	OA

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
455	404.1,404.2,456.1-457	5/1/2014	OA
455	404.1,404.2,456.1-457	11/4/2014	OA

SEARCH NOTES		
Search Notes	Date	Examiner
EAST search	5/1/2014	OA
east search	11/3/2014	OA

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/OLUMIDE T AJIBADE AKONAI/ Primary Examiner.Art Unit 2641
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<i>Index of Claims</i> 	Application/Control No. 14176691	Applicant(s)/Patent Under Reexamination CUFF ET AL.
	Examiner OLUMIDE T AJIBADE AKONAI	Art Unit 2641

✓	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	05/01/2014	11/03/2014						
	1	✓	-						
	2		-						
	3		-						
	4		-						
	5		-						
	6		-						
	7		-						
	8		-						
	9		-						
	10		-						
	11		-						
	12		-						
	13		✓						
	14		✓						
	15		✓						
	16		✓						
	17		✓						
	18		✓						
	19		✓						
	20		✓						
	21		✓						
	22		✓						
	23		✓						
	24		✓						
	25		✓						
	26		✓						

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	72	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) and (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:48
L6	0	(detect\$3 determin\$5 track\$3 monitor\$3) near5 (location position) near3 each near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:50
L7	870	(detect\$3 determin\$5 track\$3 monitor\$3) near5 (location position) with (all each plurality) near5 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:52
L8	620	(detect\$3 determin\$5 track\$3 monitor\$3) near5 (location position) with (all each plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:54
L9	563	(detect\$3 determin\$5 track\$3 monitor\$3) near3 (location	US-PGPUB;	OR	OFF	2014/11/03

		position) with (all each plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			10:56
L10	426	(detect\$3 determin\$5 track\$3 monitor\$3) near3 (location position) near5 (all each plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 10:58
L11	387	10 and (@ad<="20110902" or @rlad<="20110902")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 11:01
L12	0	(detect\$3 determin\$5 track\$3 monitor\$3) near3 (location position) near5 (all each) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 11:02
L14	4	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) same (alarm alert "911") and 455/404.1,404.2,456.6,456.2,456.3,456.5,456.6,457.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 11:05
L15	9	("20080318591" "20090140851" "20090222388" "20100205542" "20100285814" "20100308993" "6998985" "8314683" "8442807").PN. OR ("8649806").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2014/11/03 11:06
L17	23	(detect\$3 determin\$5 track\$3 monitor\$3) near3 (location position) near5 every near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	2014/11/03 11:12

EAST Search History

		equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and 455/456.1-456.6,404.2.ccls.	IBM_TDB			
L18	2	"8649806".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/11/03 11:23
S44	2	"8649806".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/10/20 13:15

11/ 3/ 2014 12:02:39 PM

C:\ Users\ oajibadeakonai\ Documents\ EAST\ Workspaces\ 14176691.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 14/176,691
Filed: February 10, 2014
Group Art Unit: 2641
Examiner: AJIBADE

Attorney Docket No.: 40181

IN RE PATENT APPLICATION OF:

CUFF ET AL.

TITLE: **AGGREGATE LOCATION DYNOMETER (ALD)**

October 2, 2014

AMENDMENT

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

Responsive to the Office Action dated May 2, 2014, please enter
the following amendments and remarks in the subject application:

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-12. (canceled)

13. (new) An aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer comprising:

a network monitor to monitor a wireless network for an indication of a viral event;

a location aggregator to obtain a location of each of a plurality of wireless devices associated with said viral event;

a crowd risk determinant, triggered by said network monitor, to determine a crowd risk based on an aggregation of said location of each of said plurality of wireless devices associated with said viral event; and

an alert module to initiate an alert message relating to a public safety risk determined from an analysis of said viral event.

14. (new) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 13, further comprising:

a historical database maintaining a geographic region associated with said viral event.

15. (new) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 14, wherein said historical databases comprises:

a plurality of acceptable crowd shapes, a crowd shape being defined by said aggregation of said location of each of said plurality of wireless devices associated with said viral event.

16. (new) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 14, wherein said historical databases comprises:

a plurality of non-acceptable crowd shapes, a crowd shape being defined by said aggregation of said location of each of said plurality of wireless devices associated with said viral event.

17. (new) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 14, wherein said historical databases comprises:

a configurable parameter defining a threshold of a crowd shape becoming unacceptable and thus said crowd risk.

18. (new) The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 14, wherein said historical databases comprises:

a plurality of crowd shape trends based on historical wireless device locations during previous viral events.

19. (new) A method of alerting to a problematic crowd risk based on location based services (LBS), comprising:

monitoring wireless traffic for a forming viral event associated with a plurality of physical wireless devices within a given region;

initiating location requests to a physical location server to obtain a current location of each of said plurality of physical wireless devices;

forming a crowd shape based on an aggregation of said current location of each of said plurality of physical wireless devices;

determining a crowd risk of said crowd based on said crowd shape of said current location of each of said plurality of physical wireless devices; and

triggering a crowd alert message when said determined crowd risk is above a given threshold.

20. (new) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 19, wherein:

said crowd risk of said crowd is further determined based on a movement of said crowd shape.

21. (new) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 19, wherein said monitoring wireless traffic comprises:

monitoring wireless traffic at a given point in a wireless network;
and

comparing a given traffic parameter associated with said obtained current location of each of said plurality of physical wireless devices, with a historical traffic parameter associated with a previous problematic crowd formation.

22. (new) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 21, wherein:

said given point is at a given base station in said wireless network.

23. (new) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 21, further comprising:

logging a snapshot formation created by said current location of each of said plurality of physical wireless devices.

24. (new) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 19, wherein said initiating location requests comprises:

initiating a location request for each of said plurality of physical wireless devices.

25. (new) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 19, further comprising:

comparing a viral pattern of respective locations of said plurality of wireless devices to predetermined risk rules.

26. (new) The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 25, further comprising:

logging said viral pattern.

REMARKS

Claims 13-26 are pending in the application, original claims 1-12 having been canceled.

Double Patenting

In the Office Action, claim 1 was rejected under 35 USC 101 as claiming the same invention as that of claim 1 of parent U.S. Pat. No. 8,649,806.

Claim 1 is canceled herein, thereby mooting the rejection.

Conclusion

It is respectfully submitted that the subject application is in condition for allowance and a Notice to that effect is earnestly solicited.

Respectfully submitted,

/William H. Bollman/

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Tel. (202) 261-1020
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MANELLI SELTER PLLC
2000 M Street, N.W. 7th Floor
Washington D.C. 20036-3307

Electronic Patent Application Fee Transmittal				
Application Number:		14176691		
Filing Date:		10-Feb-2014		
Title of Invention:		Aggregate Location Dynamometer (ALD)		
First Named Inventor/Applicant Name:		Michael A. Cuff		
Filer:		William H Bollman		
Attorney Docket Number:		40181		
Filed as Large 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 \$0 paid	1252	1	600	600

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				600

Electronic Acknowledgement Receipt	
EFS ID:	20311954
Application Number:	14176691
International Application Number:	
Confirmation Number:	6086
Title of Invention:	Aggregate Location Dynamometer (ALD)
First Named Inventor/Applicant Name:	Michael A. Cuff
Customer Number:	117657
Filer:	William H Bollman
Filer Authorized By:	
Attorney Docket Number:	40181
Receipt Date:	02-OCT-2014
Filing Date:	10-FEB-2014
Time Stamp:	14:35:12
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 600
RAM confirmation Number	807
Deposit Account	506250
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	2014-10-2-Transmittal-40181.pdf	18659	no	1
			c603d7c1fc2d65c7e79d98935661b8ff0ba4b8e		
Warnings:					
Information:					
2		2014-10-2-Amendment-40181.pdf	57691	yes	6
			d87a6b3c91b1bc982a5a2c57782138aec880752d		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	5	
	Applicant Arguments/Remarks Made in an Amendment		6	6	
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30180	no	2
			30f5f4691c9379d184cf32e5d6d7e026310cc3d2		
Warnings:					
Information:					
Total Files Size (in bytes):			106530		

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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

TRANSMITTAL LETTER (Large Entity)

Application Number: **14/176,691**

Group Art Unit: **2641**

Filed: **February 10, 2014**

Examiner Name: **AJIBADE**

Applicant: **CUFF et al.**

Attorney Docket Number: **40181**

TITLE: Aggregate Location Dynamometer (ALD)

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

SIR:

Transmitted herewith are:
1. Amendment – 6 pages.

In the event of non-payment or improper payment of a required fee, the Director is authorized to charge or to credit **Deposit Account No. 506250 under Order No. 40181** as required to correct the error.

Respectfully submitted,

/William H. Bollman/

William H. Bollman
Reg. No.: 36,457
Attorney for Applicant(s)

Date: October 2, 2014
**Manelli Selter PLLC
2000 M Street, NW 7th Floor
Washington, DC 20036-3307
(202) 261-1020**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD					Application or Docket Number		Filing Date		☐ To be Mailed	
Substitute for Form PTO-875					14/176,691		02/10/2014			
ENTITY: ☒ LARGE ☐ SMALL ☐ MICRO										
APPLICATION AS FILED – PART I										
(Column 1)		(Column 2)								
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A		N/A		N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A				
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		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 \$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).								
☐ 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				
APPLICATION AS AMENDED – PART II										
(Column 1)		(Column 2)		(Column 3)						
AMENDMENT	10/02/2014	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 14	Minus	** 20	= 0	X \$80 =		0		
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$420 =		0		
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE		0		
(Column 1)		(Column 2)		(Column 3)						
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =				
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =				
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						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.										

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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/176,691	02/10/2014	Michael A. Cuff	40181

CONFIRMATION NO. 6086

117657
TeleCommunication Systems, Inc.
275 West Street
Annapolis, MD 21401

PUBLICATION NOTICE



OC000000068842039

Title:Aggregate Location Dynamometer (ALD)

Publication No.US-2014-0155105-A1

Publication Date:06/05/2014

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.

The publication may be accessed through the USPTO's publicly available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

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.

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



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Address: COMMISSIONER FOR PATENTS
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/176,691	02/10/2014	Michael A. Cuff	40181	6086
117657 7590 05/02/2014 TeleCommunication Systems, Inc. 275 West Street Annapolis, MD 21401			EXAMINER AJIBADE AKONAI, OLUMIDE	
			ART UNIT 2641	PAPER NUMBER
			MAIL DATE 05/02/2014	DELIVERY MODE PAPER

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.

Office Action Summary	Application No. 14/176,691	Applicant(s) CUFF ET AL.	
	Examiner OLUMIDE T. AJIBADE AKONAI	Art Unit 2641	AIA (First Inventor to File) Status No

-- 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 MONTHS 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 02/10/2014.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3) ☐ 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.

4) ☐ 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*

5) ☒ Claim(s) 1 is/are pending in the application.
5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☒ Claim(s) 1 is/are rejected.

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

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

* If any claims have been determined allowable, 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.

Application Papers

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

11) ☒ The drawing(s) filed on 02/10/2014 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).

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).

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)).

** 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) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date 02/10/2014.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

4) ☐ Other: _____.

The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the “same invention” type finds its support in the language of 35 U.S.C. 101 which states that “whoever invents or discovers any new and useful process... may obtain a patent therefor...” (Emphasis added). Thus, the term “same invention,” in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the claims that are directed to the same invention so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claim 1 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of prior U.S. Patent No. 8,649,806. This is a statutory double patenting rejection.

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLUMIDE T. AJIBADE AKONAI whose telephone number is (571)272-6496. The examiner can normally be reached on M-F, 8.30p-5p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Appiah can be reached on 571-272-7904. 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.

/OLUMIDE T AJIBADE AKONAI/
Primary Examiner, Art Unit 2641

Atty.	M#	Client Ref.
Bollman	40181	40181
Applicant: CUFF		
Appln. No.: Unknown (Cont. of 13/317,996)		
Filing Date: February 10, 2014		
Examiner: AJIBADE		Group Art Unit: 2641

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date: February 10, 2014

Page 1 of 1

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	SubClass	Filing Date (if appropriate)
/O.A./	AR	US2009/0222388	9/2009	Hua			
/O.A./	BR	US2008/0318591	12/2008	Oliver			
/O.A./	CR	US2010/0308993	12/2010	Ma			
/O.A./	DR	6998985	2/2006	Reisman			
/O.A./	ER	8442807	5/2013	Ramachandran			
/O.A./	FR	8314683	11/2012	Pfeffer			
/O.A./	GR	US2010/0285814	11/2010	Price			
/O.A./	HR	US2010/0205542	8/2010	Walman			
/O.A./	IR	US2009/0140851	6/2009	Graves			
/O.A./	JR						
/O.A./	KR						
/O.A./	LR						
/O.A./	MR						
/O.A./	NR						

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClasses	English		Translation	
								Enclosed	No	Enclosed	No
	OR										
	PR										
	QR										
	RR										
	SR										
	TR										
	UR										
	VR										

OTHER (Including in **this order** Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

/O.A./	WR	International Search Report received in PCT/US2012/000374 dated November 20, 2012.				
/O.A./	XR	International Preliminary Report on Patentability received in PCT/US2012/00374 dated September 5, 2013.				
	YR					
	ZR					
	AAR					
	BBR					

Examiner /Olumide Ajibade Akonai/

Date Considered: 05/01/2014

*EXAMINER: Initial if citation 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.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	"8649806".pn.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 14:32
L2	153	dynamometer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:02
L3	3	2 and "455"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:02
L4	1281	((track\$3 monitor\$3) near3 (group set plurality multiple crowd)) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and (emergency mob riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:04
L5	3	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) same (alarm alert "911") same (wireless cellular PLMN mobile) and 455/404.1,404.2,456.6,456.2,456.3,456.5,456.6,457.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:07
L6	3	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) same (alarm alert "911") and 455/404.1,404.2,456.6,456.2,456.3,456.5,456.6,457.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:08
L7	3	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) and	US-PGPUB; USPAT; USOCR;	OR	OFF	2014/05/01 15:08

		455/404.1,404.2,456.6,456.2,456.3,456.5,456.6,457.ccls.	FPRS; EPO; JPO; DERWENT; IBM_TDB			
L8	768	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:09
L9	69	(detect\$3 determin\$5 track\$3 monitor\$3) near5 viral same (emergency mob risk emergency riot crowd stampede) and (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:09
L10	3	9 AND ((H04W64/006).CPC.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2014/05/01 15:12
L11	0	((cluster group aggregation traffic crowd) near3 (behavior pattern)) with (alert notif\$7) and ((H04W64/006).CPC.)	US-PGPUB; USPAT	OR	OFF	2014/05/01 15:12
L12	32	("20020006117" "20020136242" "20020145045" "5142539" "20080132254" "7725119" "20020009101" "20020077121" "20030210280" "20050143102" "20090313099" "5317671" "6445396" "20030201931" "20050215271" "20070101005" "20050107099" "20030021398" "5581547" "6518919" "20050186968" "20070294725" "20030003936" "20030071126" "6044248" "20020147660" "20040248599" "6657660" "7053753" "20060085731" "20060107238" "4829519").PN.	US-PGPUB; USPAT	OR	OFF	2014/05/01 15:13
S1	1	"13317996"	US-PGPUB; USPAT	OR	OFF	2013/09/30 11:24
S2	4	("20080318591" "20090222388" "20100308993" "6998985").PN.	US-PGPUB; USPAT	OR	OFF	2013/09/30 13:28
S3	3	(track\$3 monitor\$3) near4 (multiple plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") same (location position) same (emergency mob	US-PGPUB; USPAT	OR	OFF	2013/09/30 13:40

		riot crowd stampede)				
S4	3	((track\$3 monitor\$3) near4 (multiple plurality) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") same (location position) same (emergency mob riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 13:40
S5	9	((track\$3 monitor\$3) near3 crowd) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") and (emergency mob riot crowd stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 13:52
S6	2	("20100041391" "6400813").PN. OR ("8442807").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/09/30 13:58
S7	46	((analysis behavior monitor\$3 track\$3) near3 (group crowd)) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") same (alert\$3 emergency PSAP)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 14:01
S8	6	("20040203380" "20050192026" "20060166681" "20060250305" "20090140841" "4494119").PN. OR ("8315598").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/09/30 14:33
S9	9	((track\$3 monitor\$3) near3 crowd) with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 14:35
S10	0	((track\$3 monitor\$3) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 14:37

		equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")) with (crowd near4 behavior)				
S11	0	(((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") with (crowd near4 behavior) and 455/456.1,456.5,404.1,404.2.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 14:38
S12	1	(((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") with (crowd near4 behavior)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 14:39
S13	1	(wireless network) with ((traffic crowd) near3 (direction movement pattern)) same (notif\$7 alert\$3) with (event accident riot mob risk danger stampede hooligan) and 455/404.1,404.2,456.1,456.5,456.6.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 14:48
S14	2	(wireless network) with ((traffic crowd) near3 (direction movement pattern)) same (notif\$7 alert\$3) and 455/404.1,404.2,456.1,456.5,456.6.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 14:49
S15	132	((cluster group aggregation traffic crowd) near3 (behavior pattern)) with (alert notif\$7) and ((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	US-PGPUB; USPAT	OR	OFF	2013/09/30 14:59
S16	0	(monitor\$3 track\$3) near3 ((cluster group multiple plurality) near3 (behavior pattern)) with (alert notif\$7) and ((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 15:22

		terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") with ((network wireless) near3 (traffic flow pattern)) same (predict\$3 determin\$5 detect\$3) near5 (risk accident situation incident fight riot crowd mob stampede)				
S17	2	(monitor\$3 track\$3) near3 (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device") with ((network wireless) near3 (traffic flow pattern)) same (predict\$3 determin\$5 detect\$3) near5 (risk accident situation incident behavior fight riot crowd mob stampede)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 15:25
S18	10	(monitor\$3 track\$3) near3 crowd\$1 with (((wireless mobile portable cellular RF hand\$1held hand) adj (phone node\$1 telephone device equipment apparatus user unit subscriber radio terminal station)) or radio\$1phone or radio\$1telephone or cell\$1phone or (terminal adj (unit equipment)) or telephone or hand\$2phone or hand\$1set or (subscriber adj (unit\$1 terminal\$1)) or (user adj equipment) PDA "personal digital assistant" WTRU (subscriber near station\$1) smart\$1phone\$1 "portable communication device" "portable communication unit" "wireless communication device")	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 22:46
S19	16	("20050264412" "20070030144" "20070041514" "20070083409" "20070103292" "20070103294" "20070126573" "20070275690" "20070280462" "20090140851" "5960337" "6281834" "7091852" "7177623" "7233781" "7245216").PN. OR ("8314683").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/09/30 22:54
S20	0	(monitor\$3 track\$3) near3 ((network system) near2 (load traffic)) with (crowd\$1 population) near2 (activit\$3 movement moving move\$1)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 22:58
S21	5	(monitor\$3 track\$3) near3 ((network system) near2 (load activity traffic)) with (crowd\$1 population)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:00
S22	145	dynamometer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:04
S23	2	S22 and "455"/\$.ccls.	US-PGPUB; USPAT;	OR	OFF	2013/09/30 23:04

			USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB			
S24	26	(monitor\$3 track\$3) near3 (network system) with (viral crowd) and (455/414.1,456.1-456.6,457,404.1,404.2.ccls. or "340"/\$.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:06
S25	1	(location and dynamometer and crowd).clm. and (455/414.1,456.1-456.6,457,404.1,404.2.ccls. or "340"/\$.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:09
S26	1	(location and traffic and wireless and crowd).clm. and (455/414.1,456.1-456.6,457,404.1,404.2.ccls. or "340"/\$.ccls.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:09
S27	1	(monitor\$3 track\$3) near3 crowd\$1 with (network near3 (traffic movement flow))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:26
S28	0	management near3 crowd\$1 with (network near3 (monitor\$3 track\$3))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:34
S29	6	management near3 crowd\$1 and "455"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:34
S30	3	(monitor\$3 track\$3) near3 crowd\$1 and "434"/\$.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2013/09/30 23:36

5/ 1/ 2014 3:17:04 PM

C:\Users\oajibadeakonai\Documents\EAST\Workspaces\14176691.wsp

<i>Index of Claims</i> 	Application/Control No. 14176691	Applicant(s)/Patent Under Reexamination CUFF ET AL.
	Examiner OLUMIDE T AJIBADE AKONAI	Art Unit 2641

✓	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	05/01/2014													
	1	✓													

Search Notes 	Application/Control No. 14176691	Applicant(s)/Patent Under Reexamination CUFF ET AL.
	Examiner OLUMIDE T AJIBADE AKONAI	Art Unit 2641

CPC- SEARCHED		
Symbol	Date	Examiner
H04W 64/006	5/1/2014	OA

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
455	404.1,404.2,456.1-457	5/1/2014	OA

SEARCH NOTES		
Search Notes	Date	Examiner
EAST search	5/1/2014	OA

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/OLUMIDE T AJIBADE AKONAI/ Primary Examiner.Art Unit 2641
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BIB DATA SHEET

CONFIRMATION NO. 6086

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
14/176,691	02/10/2014	455	2641	40181		
APPLICANTS TeleCommunication Systems, Inc., Annapolis, MD, Assignee (with 37 CFR 1.172 Interest); INVENTORS Michael A. Cuff, Clyde Hill, WA; Todd Gehrke, Seattle, WA; Farhad Kasad, Bothell, WA; ** CONTINUING DATA ***** This application is a CON of 13/317,996 11/02/2011 PAT 8649806 which claims benefit of 61/573,112 09/02/2011 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 02/25/2014						
Foreign Priority claimed ☐ Yes ☒ No	35 USC 119(a-d) conditions met ☐ Yes ☒ No	☐ Met after Allowance	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
Verified and /OLUMIDE AJIBADE AKONAI/ Acknowledged Examiner's Signature		Initials	WA	7	1	1
ADDRESS TeleCommunication Systems, Inc. 275 West Street Annapolis, MD 21401 UNITED STATES						
TITLE Aggregate Location Dynamometer (ALD)						
FILING FEE RECEIVED 1600	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		



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/176,691	02/10/2014	Michael A. Cuff	40181

117657
TeleCommunication Systems, Inc.
275 West Street
Annapolis, MD 21401

CONFIRMATION NO. 6086
POA ACCEPTANCE LETTER



Date Mailed: 03/24/2014

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/13/2014.

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.

/hchristian/

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

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:

☐ Practitioners associated with the Customer Number:

OR

☒ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number	Name	Registration Number
William H. Bollman	36,457		
Edward J. Sternberger	36,017		
Jeffrey S. Melcher	35,950		
Leon R. Turkevich	34,035		
Paul E. White	32,011		

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:



The address associated with Customer Number:

117657

OR

☐ Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone			Email

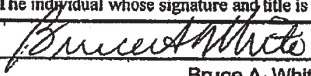
Assignee Name and Address:

TeleCommunication Systems, Inc.
275 West Street, Suite 400
Annapolis, MD 21401

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	October 7, 2011
Name	Bruce A. White	Telephone	410-280-1224
Title	Secretary		

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.

Electronic Acknowledgement Receipt	
EFS ID:	18464224
Application Number:	14176691
International Application Number:	
Confirmation Number:	6086
Title of Invention:	Aggregate Location Dynamometer (ALD)
First Named Inventor/Applicant Name:	Michael A. Cuff
Customer Number:	117657
Filer:	William H Bollman
Filer Authorized By:	
Attorney Docket Number:	40181
Receipt Date:	13-MAR-2014
Filing Date:	10-FEB-2014
Time Stamp:	16:37:08
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	Assignee showing of ownership per 37 CFR 3.73.	2014-3-13-Statement-37-CFR-40181.pdf	121775 1a3cae801fe70fd02a1506e597b6a4e6cae8273	no	3

Warnings:

Information:

2	Power of Attorney	2014-3-13-POA-40181.pdf	81242 d2eec75a2f8cd093c230e624fb1096fb1ac799db	no	1
Warnings:					
Information:					
Total Files Size (in bytes):				203017	
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.					

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: TeleCommunication Systems, Inc.
Application No./Patent No.: 14176691 Filed/Issue Date: February 10, 2014
Titled: Aggregate Location Dynamometer (ALD)
TeleCommunication Systems, Inc., a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☒ 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 032184, Frame 0869, or for which a copy thereof is attached.
- 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
Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

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**

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

STATEMENT UNDER 37 CFR 3.73(c)

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.

4. 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.

5. 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.

6. 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).

☒ As required by 37 CFR 3.73(c)(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.

/William H. Bollman/

March 13, 2014

Signature

Date

William H. Bollman

36457

Printed or Typed Name

Title or Registration Number

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.



UNITED STATES PATENT AND TRADEMARK OFFICE

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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
14/176,691	02/10/2014	2642	1600	40181	1	1

CONFIRMATION NO. 6086

117657
TeleCommunication Systems, Inc.
275 West Street
Annapolis, MD 21401

FILING RECEIPT



OC000000066806774

Date Mailed: 02/27/2014

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**

Inventor(s)

Michael A. Cuff, Clyde Hill, WA;
Todd Gehrke, Seattle, WA;
Farhad Kasad, Bothell, WA;

Applicant(s)

TeleCommunication Systems, Inc., Annapolis, MD

Assignment For Published Patent Application

TeleCommunication Systems, Inc., Annapolis, MD

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 13/317,996 11/02/2011 PAT 8649806
which claims benefit of 61/573,112 09/02/2011

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access - A proper **Authorization to Permit Access to Application by Participating Offices** (PTO/SB/39 or its equivalent) has been received by the USPTO.

If Required, Foreign Filing License Granted: 02/25/2014

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/176,691**

Projected Publication Date: 06/05/2014

Non-Publication Request: No

Early Publication Request: No
Title

Aggregate Location Dynamometer (ALD)

Preliminary Class

455

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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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 U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.



UNITED STATES PATENT AND TRADEMARK OFFICE

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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/176,691	02/10/2014	Michael A. Cuff	40181

CONFIRMATION NO. 6086

117657

TeleCommunication Systems, Inc.
275 West Street
Annapolis, MD 21401

NOTICE



Date Mailed: 02/27/2014

INFORMATIONAL NOTICE TO APPLICANT

Applicant is notified that the above-identified application contains the deficiencies noted below. No period for reply is set forth in this notice for correction of these deficiencies. However, if a deficiency relates to the inventor's oath or declaration, the applicant must file an oath or declaration in compliance with 37 CFR 1.63, or a substitute statement in compliance with 37 CFR 1.64, executed by or with respect to each actual inventor no later than the expiration of the time period set in the "Notice of Allowability" to avoid abandonment. See 37 CFR 1.53(f).

The item(s) indicated below are also required and should be submitted with any reply to this notice to avoid further processing delays.

A new inventor's oath or declaration that identifies this application (e.g., by Application Number and filing date) is required. The inventor's oath or declaration does not comply with 37 CFR 1.63 in that it:

- does not state that the above-identified application was made or authorized to be made by the person executing the oath or declaration.

Michael A. Cuff
Todd Gehrke
Farhad Kasad

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 14/176,691				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	280			
SEARCH FEE (37 CFR 1.16(k), (j), or (m))	N/A	N/A	N/A			N/A	600			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	720			
TOTAL CLAIMS (37 CFR 1.16(i))	1	minus 20 = *			OR	x 80 =	0.00			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1	minus 3 = *				x 420 =	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			TOTAL	1600			
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	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))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
TOTAL ADD'L FEE								OR	TOTAL ADD'L FEE	
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	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))							OR		
	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.										



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/176,691	02/10/2014	Michael A. Cuff	40181

117657
TeleCommunication Systems, Inc.
275 West Street
Annapolis, MD 21401

CONFIRMATION NO. 6086
IMPROPER CPOA LETTER



Date Mailed: 02/27/2014

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the power of attorney filed 02/10/2014. The power of attorney in this application is not accepted for the reason(s) listed below:

- The power of attorney from the inventors has not been accepted because the power of attorney must be signed by the applicant for patent. See 37 CFR 1.32(b)(4).

/hnguyen/

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: **unknown**
(**continuation of 13/317,996**)
Filed: **November 2, 2011**
Group Art Unit: **2641**
Examiner: **AJIBADE**

Attorney Docket No.: **40181**

IN RE PATENT APPLICATION OF:

CUFF ET AL.

TITLE: **AGGREGATE LOCATION DYNOMETER (ALD)**

February 10, 2014

PRELIMINARY AMENDMENT

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

Prior to action in the above-referenced application, kindly amend
the application as follows:

IN THE SPECIFICATION:

Page 1, line 2, kindly insert the following paragraph:

The present application is a continuation of U.S. Appl. No. 13/317,996 entitled "Aggregate Location Dynamometer (ALD)", filed on November 2, 2011, now U.S. Patent 8,649,806; which claims priority from U.S. Provisional Application No. 61/573,112, entitled "Aggregate Location Dynamometer (ALD)", filed September 2, 2011, the entirety of both of which are expressly incorporated herein by reference.

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer comprising:

a network monitor to monitor a wireless network for an indication of a possible viral event;

a crowd risk determinant to assess location information pertaining to a possible viral event triggered by said network monitor; and

an alert module to alert in an event of a public safety risk determined from an analysis of said possible viral event.

2-12. (canceled)

CUFF et al. (Cont. of 13/317,996)

Remarks

Claim 1 is pending in the application. Original claims 2-12 are canceled herein.

Claim of Priority

The Applicants hereby claim the benefit under Title 35, United States Code, 120 of the following United States applications:

United States Appl. No. 13/317,996 entitled "Aggregate Location Dynamometer (ALD)," filed November 2, 2011, now U.S. Patent No. 8,649,806.

United States Provisional Patent Application No. 61/573,112, entitled "Aggregate Location Dynamometer (ALD)," filed September 2, 2011.

Respectfully Submitted,

/William H. Bollman/

William H. Bollman
Reg. No. 36,457

MANELLI SELTER PLLC
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FAX. (202) 887-0336

Atty.	M#	Client Ref.
Bollman	40181	40181
Applicant: CUFF		
Appln. No.: Unknown (Cont. of 13/317,996)		
Filing Date: February 10, 2014		
Examiner: AJIBADE		Group Art Unit: 2641

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Date: February 10, 2014

Page 1 of 1

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	SubClass	Filing Date (if appropriate)
	AR	US2009/0222388	9/2009	Hua			
	BR	US2008/0318591	12/2008	Oliver			
	CR	US2010/0308993	12/2010	Ma			
	DR	6998985	2/2006	Reisman			
	ER	8442807	5/2013	Ramachandran			
	FR	8314683	11/2012	Pfeffer			
	GR	US2010/0285814	11/2010	Price			
	HR	US2010/0205542	8/2010	Walman			
	IR	US2009/0140851	6/2009	Graves			
	JR						
	KR						
	LR						
	MR						
	NR						

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	Class	SubClasses	English		Translation	
								Enclosed	No	Enclosed	No
	OR										
	PR										
	QR										
	RR										
	SR										
	TR										
	UR										
	VR										

OTHER (Including in **this order** Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

	WR	International Search Report received in PCT/US2012/000374 dated November 20, 2012.				
	XR	International Preliminary Report on Patentability received in PCT/US2012/00374 dated September 5, 2013.				
	YR					
	ZR					
	AAR					
	BBR					

Examiner

Date Considered:

*EXAMINER: Initial if citation 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.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

To: WILLIAM BOLLMAN MANELLI SELTER PLLC 2000 M STREET, NW, 7TH FLOOR WASHINGTON, DC 20036	20 NOV 2012
Applicant's or agent's file reference 40047	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US2012/000374	International filing date (day/month/year) 29 August 2012
Applicant TELECOMMUNICATION SYSTEMS, INC.	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

Filing of amendments and statement under Article 19:

The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):

When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.

Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
 1211 Geneva 20, Switzerland, Facsimile No.: +41 22 338 82 70

For more detailed instructions, see *PCT Applicant's Guide*, International Phase, paragraphs 9.004 – 9.011.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to any protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:**

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with any request to forward the texts of both the protest and the decision thereon to the designated Offices.

☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. Reminders

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. Following the expiration of 30 months from the priority date, these comments will also be made available to the public.

Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau before the completion of the technical preparations for international publication (Rules 90*bis*.1 and 90*bis*.3).

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

For details about the applicable time limits, Office by Office, see www.wipo.int/pct/en/texts/time_limits.html and the *PCT Applicant's Guide*, National Chapters.

Name and mailing address of the ISA/ Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
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Form PCT/ISA/220 (July 2010)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 40047	FOR FURTHER ACTION	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
International application No. PCT/US2012/000374	International filing date (day/month/year) 29 August 2012	(Earliest) Priority Date (day/month/year) 02 September 2011
Applicant TELECOMMUNICATION SYSTEMS, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed.
☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (see Box No. II).

3. ☐ **Unity of invention is lacking** (see Box No. III).

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant.
☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

- a. the figure of the **drawings** to be published with the abstract is Figure No. 1
☒ as suggested by the applicant.
☐ as selected by this Authority, because the applicant failed to suggest a figure.
☐ as selected by this Authority, because this figure better characterizes the invention.
- b. ☐ none of the figures is to be published with the abstract.

Form PCT/ISA/210 (first sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/000374

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H04M 11/04 (2012.01)

USPC - 455/404.2

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - G06F 15/18, H04M 11/04, H04W 24/00 (2012.01)

USPC - 455/404.2, 455/456.1, 706/12

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MicroPatent, Google Patents, and Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 2009/0222388 A1 (HUA et al) 03 September 2009 (03.09.2009) entire document	1-12
Y	US 2008/0318591 A1 (OLIVER) 25 December 2008 (25.12.2008) entire document	1-12
A	US 2010/0308993 A1 (MA et al) 09 December 2010 (09.12.2010) entire document	1-12
A	US 6,998,985 B2 (REISMAN et al) 14 February 2006 (14.02.2006) entire document	1-12

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

05 November 2012

Date of mailing of the international search report

20 NOV 2012

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US, Commissioner for Patents

P.O. Box 1450, Alexandria, Virginia 22313-1450

Facsimile No. 571-273-3201

Authorized officer:

Blaine R. Copenheaver

PCT Helpdesk: 571-272-4300

PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To: WILLIAM BOLLMAN
MANELLI SELTER PLLC
2000 M STREET, NW, 7TH FLOOR
WASHINGTON, DC 20036

Date of mailing
(day/month/year)

20 NOV 2012

Applicant's or agent's file reference
40047

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/US2012/000374

International filing date (day/month/year)
29 August 2012

Priority date (day/month/year)
02 September 2011

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - H04M 11/04 (2012.01)
USPC - 455/404.2

Applicant TELECOMMUNICATION SYSTEMS, INC.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450, Alexandria, Virginia 22313-1450
Facsimile No. 571-273-3201

Date of completion of this opinion
05 November 2012

Authorized officer:

Blaine R. Copenhæver

PCT Helpdesk: 571-272-4300
PCT OSP: 571-272-7774

Form PCT/ISA/237 (cover sheet) (July 2011)

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2012/000374

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
 - ☒ the international application in the language in which it was filed.
 - ☐ a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).
2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a))
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing filed or furnished:
 - a. (means)
 - ☐ on paper
 - ☐ in electronic form
 - b. (time)
 - ☐ in the international application as filed
 - ☐ together with the international application in electronic form
 - ☐ subsequently to this Authority for the purposes of search
4. ☐ In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
5. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US2012/000374

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-12	YES
	Claims	None	NO
Inventive step (IS)	Claims	None	YES
	Claims	1-12	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims	None	NO

2. Citations and explanations:

Claims 1-6 lack an inventive step under PCT Article 33(3) as being obvious over Hua et al, hereinafter Hua in view of Oliver.

Regarding Claim 1, Hua discloses an aggregate location dynameter in a physical wireless network server (paragraph 42 for having a wireless data following conventional protocols using GPS location data to determine crowd behavior with paragraph 73 for motion tracking for the crowd using optical flow or dynameter means for monitoring flow), said aggregate location dynameter comprising: a network monitor for an indication of a possible viral event (paragraph 42 for monitoring a communications network using audio, video, and sensor data to detect crowd behavior via a wireless network and having rules to determine crowd feature data therefore a network monitoring means with visual, auditory, and sensor data inputs, and paragraph 83 for raising an alert or an indication of a crowd event); a crowd risk determinant to assess location information pertaining to a possible viral event triggered by said network monitor (paragraph 42 for assessing GPS location information and crowd behavior to determine a threat level or risk and using the HFCD to determine crowd behavior); and an alert module to alert in an event of a public safety risk determined from an analysis of said possible viral event (paragraph 44 or detecting specific crowd behavior and generating a response to the human operator that includes audio and visual warnings or alert means). Hua discloses using a wireless network but does not explicitly disclose monitoring the wireless network. Oliver has a system records the movement of people carrying mobile devices within a specific area (abstract) and discloses monitoring a wireless network (paragraph 48 for monitoring wireless devices using the base stations). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the network monitoring as taught by Oliver in the crowd system of Hua in order to determine the pattern of mobile device transmissions (Oliver, paragraph 48).

Regarding Claim 2, Hua discloses the system as shown above. Hua does not explicitly disclose a historical database maintaining location-based information indicating a possible viral event associated with a plurality of wireless devices. Oliver has a system records the movement of people carrying mobile devices within a specific area (abstract) and discloses a historical database maintaining location-based information indicating a possible viral event associated with a plurality of wireless devices (paragraph 48 for monitoring wireless devices using the base stations and paragraph 47 for tracking data over time or storing historical information). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the network monitoring as taught by Oliver in the crowd system of Hua in order to determine the pattern of mobile device transmissions (Oliver, paragraph 48).

Regarding Claim 3, Hua discloses wherein said historical databases comprises: an acceptable/non-acceptable crowd shape database (paragraph 72 for calculating crowd shape, size and density with paragraph 90 for logging all information into a database).

Regarding Claim 4, Hua discloses wherein said historical databases comprises: a configurable parameter threshold database (paragraph 72 for calculating a crowd level or threshold feature such as crowd density with paragraph 90 for logging all information into a database).

Regarding Claim 5, Hua discloses wherein said historical databases comprises: a historical wireless device location trends database (paragraph 42 for predicting crowd behavior or determining trends with paragraph 102 for storing data on different storage mediums).

Regarding Claim 6, Hua discloses wherein said historical databases comprises: a risk rules database (paragraph 42 for having a crowd behavior detection module with specific rules for detecting crowd moods and paragraph 44 for generating warnings to an operator based on crowd behavior rules).

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US2012/000374

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of:

Claims 7-12 lack an inventive step under PCT Article 33(3) as being obvious over Oliver in view of Hua.

Regarding Claim 7, Oliver teaches method of alerting to a problematic crowd risk with location based services (LBS) (paragraph 53 for monitoring the crowd without extensive devices for monitoring the crowd and paragraph 36 for determining the direction and location of multiple mobile devices using GPS signals or location base services), comprising: monitoring wireless traffic for a possible impending viral event associated with a formation of a plurality of wireless devices (paragraph 48 for monitoring wireless devices using the base stations with paragraph 47 for determining crowd behavior such as the route used at a sporting event or shopping center); requesting location information associated with said plurality of wireless devices (paragraph 47 for monitoring a plural set of mobile or wireless devices and tracking the devices over time) and determining the movement of said plurality of wireless devices (paragraph 47 for tracking individuals in the crowd by tracking their wireless device location). Oliver does not explicitly teach determining a crowd risk of said crowd based on a shape, and triggering alert of an impending crowd problem when said determined crowd risk is above a given threshold. Hua has selectively identifying a user specified behavior of a crowd (abstract) and teaches teach determining a crowd risk of said crowd based on a shape (paragraph 72 for using a crowd density map to determine the shape of the crowd and determine crowd level features), and triggering alert of an impending crowd problem when said determined crowd risk is above a given threshold (paragraph 44 or detecting specific crowd behavior and generating a response to the human operator that includes audio and visual warnings or alert means). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the crowd risk as taught by Hua in the wireless method of Oliver in order to detect and analyze crowd behavior (Hua, paragraph 42).

Regarding Claim 8, Hua teaches wherein said monitoring wireless traffic comprises: monitoring wireless traffic at a given point in a wireless network (paragraph 53 for monitoring the crowd without extensive devices for monitoring the crowd and paragraph 36 for determining the direction and location of multiple mobile devices using GPS signals or location base services); and comparing a given traffic parameter associated with said monitored wireless traffic (paragraph 52 for tracking and recording or storing the movement of wireless mobile devices or crowd information. Oliver does not explicitly teach with a historical traffic parameter associated with crowd risk determination. Hua has selectively identifying a user specified behavior of a crowd (abstract) and teaches with a historical traffic parameter associated with crowd risk determination (paragraph 44 or detecting specific crowd behavior and generating a response to the human operator that includes audio and visual warnings or alert means with paragraph 48 for using crowd motion history or historical data). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the crowd risk as taught by Hua in the wireless method of Oliver in order to detect and analyze crowd behavior (Hua, paragraph 42).

Regarding Claim 9, Oliver teaches wherein: said given point is at a given base station in said wireless network (paragraph 48 for monitoring base station transmissions for mobile device transmissions or a wireless network).

Regarding Claim 10, Oliver teaches logging a snapshot look at current location data associated with location data (paragraph 30 for storing the unique ID of the mobile device, the time and the position or location of the mobile device).

Regarding Claim 11, Oliver teaches wherein said requesting location information comprises: initiating a location request (paragraph 40 for having the base station initiate a paging or location request); and comparing a viral pattern of respective locations of said plurality of wireless devices (paragraph 40 for determining which devices respond to the paging request or are located near the base station and paragraph 47 for monitoring the movement of people or a crowd over a period of time to determine overcrowding or shopping habits). Oliver does not explicitly teach to predetermined risk rules. Hua has selectively identifying a user specified behavior of a crowd (abstract) and teaches with a historical traffic parameter associated with crowd risk determination (paragraph 44 or detecting specific crowd behavior and generating a response to the human operator that includes audio and visual warnings or alert means with paragraph 48 for using crowd motion history or historical data). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the crowd risk as taught by Hua in the wireless method of Oliver in order to detect and analyze crowd behavior (Hua, paragraph 42).

Regarding Claim 12, Hua teaches logging said viral pattern (paragraph 47 for monitoring the movement of people or a crowd over a period of time to determine overcrowding or shopping habits therefore recording the crowd movement patterns).

Claims 1-12 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

Search History:

Limited Classification Search

The Patent Analyst performed a limited classification search within the following US, IPC, ECLA, or F-Term classification areas:

U.S. Class/Subclasses: 455/404.2, 455/456.1, 706/12

IPC (8) Class/Subclasses: G06F 15/18, H04M 11/04, H04W 24/00 (2012.01)

See Global Search Results.

Global Patent Literature Text Search

The Patent Analyst performed the following global text search, which was not limited by classification but may or may not have been limited by other criteria:

MICROPAT:

7 hits	(monitor*3 or track*3) (wireless*3 or mobil*5 or cell*5 or phon*3) Full patent spec. (crowd*3 or group*3) flow*3 alert*3 emergenc*5 databas*3 wireless*3 network*3 locat*5 trend*3 histor*5 Current US Class 706012 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
2529 hits	Current US Class 706012 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
8 hits	(monitor*3 or track*3) (wireless*3 or mobil*5 or cell*5 or phon*3) Full patent spec. (crowd*3 or group*3) flow*3 alert*3 emergenc*5 databas*3 wireless*3 network*3 locat*5 trend*3 histor*5 Current US Class 4554042 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
1898 hits	Current US Class 4554042 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
28 hits	(monitor*3 or track*3) (wireless*3 or mobil*5 or cell*5 or phon*3) Full patent spec. (crowd*3 or group*3) flow*3 alert*3 emergenc*5 databas*3 wireless*3 network*3 locat*5 trend*3 histor*5 Current US Class 4554561 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
285 hits	Full patent spec. (monitor*3 or track*3) (wireless*3 or mobil*5 or cell*5 or phon*3)

	(crowd*3 or group*3) flow*3 alert*3 emergenc*5 databas*3 wireless*3 network*3 Current US Class 4554561 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
351 hits	Full patent spec. (monitor*3 or track*3) (wireless*3 or mobil*5 or cell*5 or phon*3) (crowd*3 or group*3) flow*3 alert*3 emergenc*5 Current US Class 4554561 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
7627 hits	Current US Class 4554561 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
74 hits	Full patent spec. (monitor*3 or track*3) (wireless*3 or mobil*5 or cell*5 or phon*3) (crowd*3 or group*3) flow*3 alert*3 emergenc*5 Current IPC-R h04m001104 Databases EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
7185 hits	Current IPC-R h04m001104 Databases EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
37 hits	Full patent spec. (monitor*3 or track*3) (wireless*3 or mobil*5 or cell*5 or phon*3) (crowd*3 or group*3) flow*3 alert*3 emergenc*5 Current IPC-R h04w002400 Databases EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
7617 hits	Current IPC-R h04w002400 Databases EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
6 hits	Full patent spec. (monitor*3 or track*3) (wireless*3 or mobil*5 or cell*5 or phon*3) (crowd*3 or group*3) flow*3 alert*3 emergenc*5 Current IPC-R g06f001518 Databases EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
303 hits	Full patent spec. (monitor*3 or track*3) (wireless*3 or mobil*5 or cell*5 or phon*3) (crowd*3 or group*3) Current IPC-R g06f001518 Databases EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
7508 hits	Current IPC-R g06f001518 Databases EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
11 hits	Full patent spec. (dynomet*6 same (peopl*3 or crowd*3 or group*5 or mobil*3 or cell*5 or phon*3 or wirless*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012

239 hits	Full patent spec. dynomet*6 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
37 hits	Full patent spec. ((crowd*3 near5 (shap*3 or densit*3 or number*3 or control*5 or behavior)) same (risk*3 or threat*3 or emergenc*5) same (determin*3 or analy*5 or calculat*5 or estimat*5)) crowd*3 (wireless*3 or rf*3 or cell*5 or mobil*5) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
44 hits	Full patent spec. ((crowd*3 near5 (shap*3 or densit*3 or number*3 or control*5 or behavior)) same (risk*3 or threat*3 or emergenc*5) same (determin*3 or analy*5 or calculat*5 or estimat*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
9 hits	Full patent spec. (lmd or (locat*5 near3 monitor*5)) event*5 ((crowd*3 near5 (shap*3 or densit*3 or number*3 or control*5)) same (risk*3 or threat*3 or emergenc*5) same (determin*3 or analy*5 or calculat*5 or estimat*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
41 hits	Full patent spec. (lmd or (locat*5 near3 monitor*5)) event*5 ((crowd*3 near5 (shap*3 or densit*3 or number*3 or control*5)) same (risk*3 or threat*3 or emergenc*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
2065 hits	Full patent spec. (lmd or (locat*5 near3 monitor*5)) event*5 (threat*3 or risk*3 or emergenc*5) (crowd*3 or public*3) ((threat*3 or risk*3 or emergenc*5) same (crowd*3 or public*3)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
11 hits	Full patent spec. lmd event*5 (threat*3 or risk*3 or emergenc*5) (crowd*3 or public*3) ((threat*3 or risk*3 or emergenc*5) same (crowd*3 or public*3)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
307 hits	Full patent spec. lmd event*5 (threat*3 or risk*3 or emergenc*5) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
37 hits	Full patent spec. ((crowd*3 near5 (shap*3 or densit*3 or number*3 or control*5 or behavior)) same (risk*3 or threat*3 or emergenc*5) same (determin*3 or analy*5 or calculat*5 or estimat*5)) crowd*3 (wireless*3 or rf*3 or cell*5 or mobil*5) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
44 hits	Full patent spec. ((crowd*3 near5 (shap*3 or densit*3 or number*3 or control*5 or behavior)) same (risk*3 or threat*3 or emergenc*5) same (determin*3 or analy*5 or calculat*5 or estimat*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
9 hits	Full patent spec. (lmd or (locat*5 near3 monitor*5)) event*5 ((crowd*3 near5 (shap*3 or densit*3 or number*3 or control*5)) same (risk*3 or threat*3 or emergenc*5) same (determin*3 or analy*5 or calculat*5 or estimat*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012

	Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
41 hits	Full patent spec. (lmd or (locat*5 near3 monitor*5)) event*5 ((crowd*3 near5 (shap*3 or densit*3 or number*3 or control*5)) same (risk*3 or threat*3 or emergenc*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
2065 hits	Full patent spec. (lmd or (locat*5 near3 monitor*5)) event*5 (threat*3 or risk*3 or emergenc*5) (crowd*3 or public*3) ((threat*3 or risk*3 or emergenc*5) same (crowd*3 or public*3)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
11 hits	Full patent spec. lmd event*5 (threat*3 or risk*3 or emergenc*5) (crowd*3 or public*3) ((threat*3 or risk*3 or emergenc*5) same (crowd*3 or public*3)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
307 hits	Full patent spec. lmd event*5 (threat*3 or risk*3 or emergenc*5) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
16 hits	Full patent spec. ((track*3 or monitor*5) near10 crowd*3 near10 (wireless*3 or rf*3 or mobil*5)) (safe*3 or emergenc*6) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
34 hits	Full patent spec. ((track*3 or monitor*5) near10 crowd*3 near10 (wireless*3 or rf*3 or mobil*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
4 hits	Full patent spec. (location*3 or position*3 or coordinat*5) (crowd*3 or people*3 or public*3) notif*6 ((location*3 or position*3 or coordinat*5) same (crowd*3 or people*3 or public*3) same (notif*6 or alert*5 or announc*5) same (contamin*6 or biologic*6 or virus*3 or hazzard*5)) ((track*3 or monitor*5) same crowd*3 same (wireless*3 or rf*3 or mobil*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
119 hits	Full patent spec. (location*3 or position*3 or coordinat*5) (crowd*3 or people*3 or public*3) notif*6 ((location*3 or position*3 or coordinat*5) same (crowd*3 or people*3 or public*3) same (notif*6 or alert*5 or announc*5) same (contamin*6 or biologic*6 or virus*3 or hazzard*5)) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
3872 hits	Full patent spec. (location*3 or position*3 or coordinat*5) (crowd*3 or people*3 or public*3) notif*6 ((location*3 or position*3 or coordinat*5) same (crowd*3 or people*3 or public*3) same notif*6) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
178330 hits	Full patent spec. (location*3 or position*3 or coordinat*5) (crowd*3 or people*3 or public*3) notif*6 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
17 hits	Full patent spec. dynomet*6 (location*3 or position*3 or coordinat*5) (crowd*3 or people*3 or public*3) Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012

PCT Application No.: PCT-US2012-00374
Date of Search: 05 November 2012

224 hits	Full patent spec. dynamete*5 Databases USG USA EPA EPB WO JP DEG DEA DET DEU GBA FRA Years 1836-2012
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GOOGLE PATENT http://www.google.com/advanced_patent_search

No. of Hits	Document Part: Text String
1500 hits	wireless monitor crowd flow
67 hits	wireless monitor crowd flow virus
1 hit	wireless monitor crowd flow dynameter
93 hits	crowd flow wireless monitoring risk alert database

Computer Accessed Text Databases Searched

The Patent Analyst searched the following computer accessed text databases:

GOOGLE <http://www.google.com>

No. of Hits	Document Part: Text String
45700 hits	dynamometer monitor crowd flow
7 hits	dynamometer monitor crowd flow emergency alert
1520000 hits	dynamometer monitor crowd flow movement phone
8 hits	dynamometer monitor crowd motion flow smart phone

Date search was completed: 05 November 2012

SM/ER

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:
William H Bollman
Manelli Selter PLLC
2000 M Street, N.W. 7th Floor
Washington, DC 20036-3307
USA

PCT

NOTIFICATION OF TRANSMITTAL OF
INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing
(day/month/year) **05 SEP 2013**

Applicant's or agent's file reference

40047

IMPORTANT NOTIFICATION

International application No.

PCT/US12/00374

International filing date (day/month/year)

29 August 2012 (29.08.2012)

Priority date (day/month/year)

02 September 2011 (02.09.2011)

Applicant

TELECOMMUNICATION SYSTEMS, INC.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the IPEA/ US

Mail Stop PCT, Attn: IPEA/US

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

ANDRE ROBINSON

Telephone No. (571) 272-5005

Form PCT/IPEA/416 (January 2004)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 40047	FOR FURTHER ACTION		See Form PCT/IPEA/416																								
International application No. PCT/US12/00374	International filing date (<i>day/month/year</i>) 29 August 2012 (29.08.2012)	Priority date (<i>day/month/year</i>) 02 September 2011 (02.09.2011)																									
International Patent Classification (IPC) or national classification and IPC IPC: H04M 11/04 (2006.01) USPC: 455/404.2																											
Applicant TELECOMMUNICATION SYSTEMS, INC.																											
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. ☐ (<i>sent to the applicant and to the International Bureau</i>) a total of <u>0</u> sheets, as follows: ☐ sheets of the description, claims and/or drawings which have been amended and/or sheets containing rectifications authorized by this Authority, unless those sheets were superseded or cancelled, and any accompanying letters (see Rules 46.5, 66.8, 70.16, 91.2, and Section 607 of the Administrative Instructions). ☐ sheets containing rectifications, where the decision was made by this Authority not to take them into account because they were not authorized by or notified to this Authority at the time when this Authority began to draw up this report, and any accompanying letters (Rules 66.4<i>bis</i>, 70.2(e), 70.16 and 91.2). ☐ superseded sheets and any accompanying letters, where this Authority either considers that the superseding sheets contain an amendment that goes beyond the disclosure in the international application as filed, or the superseding sheets were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in item 4 of Box No. I and the Supplemental Box (see Rule 70.16(b)). b. ☐ (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____ containing a sequence listing, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see paragraph 3<i>bis</i> of Annex C of the Administrative Instructions).																											
4. This report contains indications relating to the following items: <table style="width: 100%; border: none;"> <tr> <td style="width: 10%;">☒</td> <td style="width: 20%;">Box No. I</td> <td style="width: 70%;">Basis of the report</td> </tr> <tr> <td>☐</td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td>☐</td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td>☐</td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td>☒</td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td>☐</td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td>☐</td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td>☐</td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>				☒	Box No. I	Basis of the report	☐	Box No. II	Priority	☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	☐	Box No. IV	Lack of unity of invention	☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement	☐	Box No. VI	Certain documents cited	☐	Box No. VII	Certain defects in the international application	☐	Box No. VIII	Certain observations on the international application
☒	Box No. I	Basis of the report																									
☐	Box No. II	Priority																									
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability																									
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☐	Box No. VI	Certain documents cited																									
☐	Box No. VII	Certain defects in the international application																									
☐	Box No. VIII	Certain observations on the international application																									
Date of submission of the demand 18 March 2013 (18.03.2013)		Date of completion of this report 28 August 2013 (28.08.2013)																									
Name and mailing address of the IPEA/ US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer  ANDRE ROBINSON Telephone No. (571) 272-5005																									

Form PCT/IPEA/409 (cover sheet) (July 2011)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/US12/00374

Box No. 1 Basis of the report

1. With regard to the **language**, this report is based on:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into English which is the language of a translation furnished for the purposes of:
- ☐ international search (Rules 12.3(a) and 23.1(b)).
 - ☐ publication of the international application (Rule 12.4(a)).
 - ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a) and (b)).

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ the international application as originally filed/furnished
- ☒ the description:
- pages 1-15 as originally filed/furnished
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☒ the claims:
- pages 16-18 as originally filed/furnished
- pages* NONE as amended (together with any statement) under Article 19
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____
- ☒ the drawings:
- pages 1-7 as originally filed/furnished
- pages* NONE received by this Authority on _____
- pages* NONE received by this Authority on _____

☐ a sequence listing - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since either they are considered to go beyond the disclosure as filed, or they were not accompanied by a letter indicating the basis for the amendments in the application as filed, as indicated in the Supplemental Box (Rules 70.2(c) and (c-bis)):

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____

5. ☐ This report has been established:

- ☐ taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.1(d-bis) and 70.2(e)).
- ☐ without taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rules 66.4bis) and 70.2(e)).

6. ☐ Supplementary international search report(s) from Authority(ies) _____ has/have been received and taken into account in establishing this report (Rule 45bis.8(b) and (c)).

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/US12/00374

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>1-12</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-12</u>	NO
Industrial Applicability (IA)	Claims <u>1-12</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and Explanations (Rule 70.7)

Claims 1-6 lack an inventive step under PCT Article 33(3) as being obvious over Hua et al, hereinafter Hua in view of Oliver. Regarding Claim 1, Hua discloses an aggregate location dynamometer in a physical wireless network server (paragraph 42 for having a wireless data following conventional protocols using GPS location data to determine crowd behavior with paragraph 73 for motion tracking for the crowd using optical flow or dynamometer means for monitoring flow), said aggregate location dynamometer comprising: a network monitor for an indication of a possible viral event (paragraph 42 for monitoring a communications network using audio, video, and sensor data to detect crowd behavior via a wireless network and having rules to determine crowd feature data therefore a network monitoring means with visual, auditory, and sensor data inputs, and paragraph 83 for raising an alert or an indication of a crowd event); a crowd risk determinant to assess location information pertaining to a possible viral event triggered by said network monitor (paragraph 42 for assessing GPS location information and crowd behavior to determine a threat level or risk and using the HFCD to determine crowd behavior); and an alert module to alert in an event of a public safety risk determined from an analysis of said possible viral event (paragraph 44 or detecting specific crowd behavior and generating a response to the human operator that includes audio and visual warnings or alert means). Hua discloses using a wireless network but does not explicitly disclose monitoring the wireless network. Oliver has a system records the movement of people carrying mobile devices within a specific area (abstract) and discloses monitoring a wireless network (paragraph 48 for monitoring wireless devices using the base stations). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the network monitoring as taught by Oliver in the crowd system of Hua in order to determine the pattern of mobile device transmissions (Oliver, paragraph 48). Regarding Claim 2, Hua discloses the system as shown above. Hua does not explicitly disclose a historical database maintaining location-based information indicating a possible viral event associated with a plurality of wireless devices. Oliver has a system records the movement of people carrying mobile devices within a specific area (abstract) and discloses a historical database maintaining location-based information indicating a possible viral event associated with a plurality of wireless devices (paragraph 48 for monitoring wireless devices using the base stations and paragraph 47 for tracking data over time or storing historical information). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the network monitoring as taught by Oliver in the crowd system of Hua in order to determine the pattern of mobile device transmissions (Oliver, paragraph 48). Regarding Claim 3, Hua discloses wherein said historical databases comprises: an acceptable/non-acceptable crowd shape database (paragraph 72 for calculating crowd shape, size and density with paragraph 90 for logging all information into a database). Regarding Claim 4, Hua discloses wherein said historical databases comprises: a configurable parameter threshold database (paragraph 72 for calculating a crowd level or threshold feature such as crowd density with paragraph 90 for logging all information into a database). Regarding Claim 5, Hua discloses wherein said historical databases comprises: a historical wireless device location trends database (paragraph 42 for predicting crowd behavior or determining trends with

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

paragraph 102 for storing data on different storage mediums). Regarding Claim 6, Hua discloses wherein said historical databases comprises: a risk rules database (paragraph 42 for having a crowd behavior detection module with specific rules for detecting crowd moods and paragraph 44 for generating warnings to an operator based on crowdbehavior rules).

Claims 7-12 lack an inventive step under PCT Article 33(3) as being obvious over Oliver in view of Hua. Regarding Claim 7, Oliver teaches method of alerting to a problematic crowd risk with location based services (LBS) (paragraph 53 for monitoring the crowd without extensive devices for monitoring the crowd and paragraph 36 for determining the direction and location of multiple mobile devices using GPS signals or location base services), comprising: monitoring wireless traffic for a possible impending viral event associated with a formation of a plurality of wireless devices (paragraph 48 for monitoring wireless devices using the base stations with paragraph 47 for determining crowd behavior such as the route used at a sporting event or shopping center); requesting location information associated with said plurality of wireless devices (paragraph 47 for monitoring a plural set of mobile or wireless devices and tracking the devices over time) and determining the movement of said plurality of wireless devices (paragraph 47 for tracking individuals in the crowd by tracking their wireless device location). Oliver does not explicitly teach determining a crowd risk of said crowd based on a shape, and triggering alert of an impending crowd problem when said determined crowd risk is above a given threshold. Hua has selectively identifying a user specified behavior of a crowd (abstract) and teaches teach determining a crowd risk of said crowd based on a shape (paragraph 72 for using a crowd density map to determine the shape of the crowd and determine crowd level features), and triggering alert of an impending crowd problem when said determined crowd risk is above a given threshold (paragraph 44 or detecting specific crowd behavior and generating a response to the human operator that includes audio and visual warnings or alert means). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the crowd risk as taught by Hua in the wireless method of Oliver in order to detect and analyze crowd behavior (Hua, paragraph 42). Regarding Claim 8, Hua teaches wherein said monitoring wireless traffic comprises: monitoring wireless traffic at a given point in a wireless network (paragraph 53 for monitoring the crowd without extensive devices for monitoring the crowd and paragraph 36 for determining the direction and location of

Supplemental Box

multiple mobile devices using GPS signals or location base services); and comparing a given traffic parameter associated with said monitored wireless traffic (paragraph 52 for tracking and recording or storing the movement of wireless mobile devices or crowd information. Oliver does not explicitly teach with a historical traffic parameter associated with crowd risk determination. Hua has selectively identifying a user specified behavior of a crowd (abstract) and teaches with a historical traffic parameter associated with crowd risk determination (paragraph 44 or detecting specific crowd behavior and generating a response to the human operator that includes audio and visual warnings or alert means with paragraph 48 for using crowd motion history or historical data). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the crowd risk as taught by Hua in the wireless method of Oliver in order to detect and analyze crowd behavior (Hua, paragraph 42). Regarding Claim 9, Oliver teaches wherein: said given point is at a given base station in said wireless network (paragraph 48 for monitoring base station transmissions for mobile device transmissions or a wireless network). Regarding Claim 10, Oliver teaches logging a snapshot look at current location data associated with location data (paragraph 30 for storing the unique ID of the mobile device, the time and the position or location of the mobile device). Regarding Claim 11, Oliver teaches wherein said requesting location information comprises: initiating a location request (paragraph 40 for having the base station initiate a paging or location request); and comparing a viral pattern of respective locations of said plurality of wireless devices (paragraph 40 for determining which devices respond to the paging request or are located near the base station and paragraph 47 for monitoring the movement of people or a crowd over a period of time to determine overcrowding or shopping habits). Oliver does not explicitly teach to predetermined risk rules. Hua has selectively identifying a user specified behavior of a crowd (abstract) and teaches with a historical traffic parameter associated with crowd risk determination (paragraph 44 or detecting specific crowd behavior and generating a response to the human operator that includes audio and visual warnings or alert means with paragraph 48 for using crowd motion history or historical data). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the crowd risk as taught by Hua in the wireless method of Oliver in order to detect and analyze crowd behavior (Hua, paragraph 42). Regarding Claim 12, Hua teaches logging said viral pattern (paragraph 47 for monitoring the movement of people or a crowd over a period of time to determine overcrowding or shopping habits therefore recording the crowd movement patterns).

Claims 1-12 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		Aggregate Location Dynamometer (ALD)		
First Named Inventor/Applicant Name:		Michael A. Cuff		
Filer:		William H Bollman		
Attorney Docket Number:		40181		
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility application filing	1011	1	280	280
Utility Search Fee	1111	1	600	600
Utility Examination Fee	1311	1	720	720
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 (\$)				1600

Electronic Acknowledgement Receipt	
EFS ID:	18163594
Application Number:	14176691
International Application Number:	
Confirmation Number:	6086
Title of Invention:	Aggregate Location Dynamometer (ALD)
First Named Inventor/Applicant Name:	Michael A. Cuff
Customer Number:	117657
Filer:	William H Bollman
Filer Authorized By:	
Attorney Docket Number:	40181
Receipt Date:	10-FEB-2014
Filing Date:	
Time Stamp:	16:20:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 1600
RAM confirmation Number	3191
Deposit Account	506250
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2014-2-10-Specification-40181.pdf	878705 da008df1d1107808c9eb28943ce9ccfb0269117c	yes	20
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	16	
	Claims		17	19	
	Abstract		20	20	
Warnings:					
Information:					
2	Drawings-only black and white line drawings	2014-2-10-Drawings-40181.pdf	124179 778f36ca9e54fc2f8b31739d7eafda9a29553dab3	no	7
Warnings:					
Information:					
3	Miscellaneous Incoming Letter	2014-2-10-LOCA-40181.pdf	71192 e71dd2deb60678995a837938364032298399e9	no	1
Warnings:					
Information:					
4	Application Data Sheet	2014-2-10-Application-Data-Sheet-40181.pdf	1561648 f219781ec9a2b9fe568ea442b420abee8b7df3b8	no	7
Warnings:					
Information:					
5	Oath or Declaration filed	2014-2-10-Declaration-40181.pdf	94928 a8611de428e2ba241d9e585782a7186a7a804b42	no	2
Warnings:					
Information:					
6	Preliminary Amendment	2014-2-10-Preliminary-Amendment-40181.pdf	53125 93dd03862268002edfd8af77fa0a2ea3d186cca	no	4
Warnings:					

Information:					
7	Information Disclosure Statement (IDS) Form (SB08)	2014-2-10-IDS-40181.pdf	24412 502cec468ae323ab96afd7fe78cb32d73cf426f2	no	1
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
8	Other Reference-Patent/App/Search documents	2014-2-10-NPO1.pdf	701538 e29c374bec8c5af5373fab32cc2f0704663f0643	no	12
Warnings:					
Information:					
9	Other Reference-Patent/App/Search documents	2014-2-10-NPO2.pdf	378974 550369842f8c767f10df73ced37a1a8cce266c6a	no	6
Warnings:					
Information:					
10	Fee Worksheet (SB06)	fee-info.pdf	32590 d3206f4e417c014aae1eb6a5195966f9da8a187c	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			3921291		
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APPLICATION UNDER UNITED STATES PATENT LAWS

Invention: **AGGREGATE LOCATION DYNOMETER (ALD)**

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This is a:

- ☐ Provisional Application
- ☐ Regular Utility Application
- ☒ Continuing Application
- ☐ PCT National Phase Application
- ☐ Design Application
- ☐ Reissue Application
- ☐ Plant Application

SPECIFICATION

AGGREGATE LOCATION DYNOMETER (ALD)

BACKGROUND OF THE INVENTION

5 1. Field of the Invention

This invention relates generally to wireless telecommunications. More particularly, it relates to cell location services, cell network trafficking and analysis of location information.

10 2. Background of Related Art

Location based applications obtain a geographic position of a particular wireless device and provide services accordingly. Location based services (LBS) prevail in today's market due to an incorporation of tracking technology in handheld devices.

15 Location based pull services allow a wireless device user to locate another wireless device. Current location services are generally focused on individual wireless device user applications.

SUMMARY OF THE INVENTION

20 In accordance with the principles of the present invention, a method of alerting to a problematic crowd risk in a given geographical location, comprises an Aggregate Location Dynometer (ALD). The Aggregate Location Dynometer (ALD) utilizes location based services (LBS) to analyze aggregate location information pertaining to a multitude of wireless devices, to detect potential crowd
25 risks.

An Aggregate Location Dynometer (ALD) resides in a physical network server, in accordance with the present invention, and comprises three main components: a Network Monitor, a Crowd Risk Determinant, and an Alert Module.

30 The Network Monitor monitors a wireless network for indication of a possible impending viral event, in accordance with the principles of the present

invention. In particular, the Network Monitor utilizes location based services (LBS) to monitor the formation of a plurality of wireless devices at a given point in a wireless network, e.g., a given base station (BS). The Network Monitor compares obtained traffic parameters pertaining to monitored wireless traffic, with historical traffic parameters having to do with crowd risk determination, to determine if a viral event may be occurring or impending. A snapshot look at current location data collected by the Network Monitor is subsequently logged in an appropriate historical database.

In accordance with the principles of the present invention, the Crowd Risk Determinant analyzes location information to determine if a viral event triggered by the Network Monitor, also indicates a crowd safety risk. In particular, the Crowd Risk Determinant initiates a location request to obtain location information pertaining to a multitude of wireless devices in a given area, regarding a viral event that has been triggered by the Network Monitor. The Crowd Risk Determinant compares the viral pattern formed by the shape and movement of wireless devices in locations observed, with predetermined risk rules to determine if the viral event is also a crowd safety risk. The observed viral pattern is subsequently logged in an appropriate historical database.

The Alert Module, in accordance with the principles of the present invention, alerts proper authorities in an event of a crowd safety risk. The Crowd Risk Determinant triggers the Alert Module to alert of an impending crowd problem when crowd risk has exceeded a given threshold.

The Aggregate Location Dynometer (ALD) utilizes historical databases, in accordance with the present invention, to maintain location-based information indicating possible viral events associated with a plurality of wireless devices. Historical databases include an Acceptable/Non-Acceptable Crowd Shape database, a Configurable Parameter Threshold database, a Historical Wireless Device Location Trends database, and a Risk Rules database.

BRIEF DESCRIPTION OF THE DRAWINGS

Features and advantages of the present invention will become apparent to those skilled in the art from the following description with reference to the drawings, in which:

5 **FIG. 1** depicts an exemplary Aggregate Location Dynamometer (ALD), in accordance with the principles of the present invention.

FIG. 2 depicts the flow of an exemplary Network Monitor of the Aggregate Location Dynamometer (ALD), in accordance with the principles of the present invention.

10 **FIG. 3** depicts the flow of an exemplary Crowd Risk Determinant of the Aggregate Location Dynamometer (ALD), in accordance with the principles of the present invention.

FIG. 4 depicts the flow of an exemplary Alert Module of the Aggregate Location Dynamometer (ALD), in accordance with the principles of the present invention.

15 **FIG. 5** denotes first exemplary Aggregate Location Dynamometer (ALD) location results, in accordance with the principles of the present invention.

FIG. 6 denotes second exemplary Aggregate Location Dynamometer (ALD) location results, in accordance with the principles of the present invention.

20 **FIG. 7** denotes third exemplary Aggregate Location Dynamometer (ALD) location results, in accordance with the principles of the present invention.

DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

Thus far, location capabilities have been concerned with locating an individual wireless device. Yet, there is such a vast abundance of individuals populating the nation's major cities. The present inventor has appreciated the benefits of using location based services (LBS) to obtain sets of aggregate location data corresponding to a number and pattern of wireless devices within an area, region, city, etc. of interest.

30 The present invention introduces an Aggregate Location Dynamometer (ALD), an analytical server utilizing location based services (LBS) on

a network to predict public safety risks, e.g., the unexpected impending formation of a flash mob, or a riot, etc.

The Aggregate Location Dynamometer (ALD) analyzes a bird's-eye view of people formation, presuming those individuals possess respective
5 handheld wireless devices that permit collection of current location information, whether that current location information be obtained from the wireless devices themselves, and/or from a network-based location server.

In accordance with the principles of the present invention, the Aggregate Location Dynamometer (ALD) predicts public safety risk in a given
10 geographical area through evaluation of the positioning and movement of wireless devices. The Aggregate Location Dynamometer (ALD) monitors wireless device network traffic to predict an impending viral event. If a possible impending viral event is sensed from a general monitoring of wireless traffic, the Aggregate Location Dynamometer (ALD) may request impending viral location information
15 pertaining to clusters of wireless devices in a vicinity of the possible event, to more accurately assess crowd risk.

Crowd risk is assessed based upon given wireless network traffic parameters such as the number of wireless devices in communication with a given base station (e.g., a density), the shape formed by representations of the
20 individual locations of the densest areas where active wireless devices are currently located, and/or the movement of the wireless devices within the region as defined.

Markers, each representing a wireless device at a given location at a given time, may be displayed on a display of the Aggregate Location
25 Dynamometer (ALD). The markers may represent wireless devices served within the given region, whether actively communicating with another wireless device, or merely sensed as present.

The present invention preferably provides an alert of a possible impending crowd related public safety risk in real time, as the crowd risk arises,
30 informing emergency personnel as early as possible, even before such event is consummated.

FIG. 1 depicts an exemplary Aggregate Location Dynamometer (ALD) **400**, in accordance with the principles of the present invention.

In particular, an Aggregate Location Dynamometer (ALD) **400** determines crowd safety risk with the help of location based services (LBS) **318**, as depicted in **FIG. 1**.

The Aggregate Location Dynamometer (ALD) **400** is generally based in a server in a wireless network **322**. Three main components form the Aggregate Location Dynamometer (ALD) **400**: a Network Monitor **302**, a Crowd Risk Determinant **304**, and an Alert Module **306**.

The Network Monitor **302** begins the risk determination process of the Aggregate Location Dynamometer (ALD) **400** by monitoring the network for indication of a possible viral event, in accordance with the principles of the present invention. Determination of a viral event is the first step in the escalation-based response of the Aggregate Location Dynamometer (ALD) **400**.

The Crowd Risk Determinant **304** assesses location information pertaining to a possible viral event triggered by the Network Monitor **302**. The Crowd Risk Determinant **304** determines if a viral event also indicates a public safety risk.

The Alert Module **306** performs predetermined responsive measures to alert appropriate public safety personnel **320** in the event of a possible or probable or current public safety risk.

Historical databases are empirically determined and maintained in the Aggregate Location Dynamometer (ALD) **400** for use in crowd risk assessment. The historical databases preferably store sets of aggregate current location information pertaining to trackable wireless devices. Exemplary historical databases accessible by the Aggregate Location Dynamometer (ALD) **400** include but are not limited to a Historical Wireless Device Location Trends and Statistics database **312**, a Configurable Parameter Threshold database **310**, a Risk Rules database **314**, and an Acceptable/Non-Acceptable Crowd Shape database **308**.

The Historical Wireless Device Location Trends and Statistics database **312**, as shown in **FIG. 1**, preferably stores sets of instantaneous

aggregate location information obtained over a period of time. Data stored in the Historical Wireless Device Location Trends and Statistics database **312** provides empirical evaluation of crowd activities used to detect a crowd trend. The Aggregate Location Dynamometer (ALD) **400** preferably uses data stored in the Historical Wireless Device Location Trends and Statistics database **312** to determine if a current situation is considered to be 'normal' to the monitored area, or abnormal, triggering a viral event. The data maintained in the Historical Wireless Device Location Trends and Statistics database **312** is preferably refreshed over time.

The Configurable Parameter Threshold database **310**, as depicted in **FIG. 1**, preferably comprises a set of configurable location-based parameters and thresholds including density, clustering, spread, geographical boundary, motion trends, and/or special events occurring in particular areas. The Configurable Parameter Threshold database **310** can also include non-location based parameters such as time of day and/or message content. The parameters stored in the Configurable Parameter Threshold database **310** are accessed by the Network Monitor **302** to assist in detecting a viral event.

The Risk Rules database **314**, as shown in **FIG. 1**, preferably comprises a set of configurable location-based parameters and thresholds including density, clustering, spread, geographical boundary, motion trends, and/or special events occurring in particular areas. The Risk Rules database **314** can also include non-location based parameters such as time of day and/or message content. The parameters stored in the Risk Rules database **314** are accessed by the Crowd Risk Determinant **304** to assist in determining if a viral event also indicates a public safety risk.

The Acceptable/Non-Acceptable Crowd Shape database **308**, as shown in **FIG. 1**, holds empirically determined past, historical cluster information regarding acceptable and/or non-acceptable past shape formations of clustered wireless devices. Specific shape parameters stored in the Acceptable/Non-Acceptable Crowd Shape database **308** are accessed by the Crowd Risk

Determinant **304** to assist in determining if a viral event also indicates a public safety risk.

A viral event is the first state of alarm in the multi-state risk determination process of the Aggregate Location Dynamometer (ALD) **400**. A viral event is defined as occurring when one or more predefined parameter thresholds have been surpassed, as determined in the exemplary embodiment in the Network Monitor **302**. The occurrence of a viral event does not necessarily infer a definite public safety risk. Instead, a viral event triggers the Crowd Risk Determinant **304** to further analyze a potentially malignant event more closely. For example, the Crowd Risk Determinant **304** provides a closer inspection of aggregate current location information, e.g., via use of a location-based push/pull service. A match of more detailed location information to a historical pattern leading to crowd risk may determine that a particular viral event also indicates a likely public safety risk.

A public safety risk confirms a compromise in crowd safety, e.g., the impending formation of a flash mob, or a riot, etc. Determination of a public safety risk triggers the Alert Module **306** to implement proper public safety response services.

The Network Monitor **302** begins the risk determination process of the Aggregate Location Dynamometer (ALD) **400**, by monitoring the network for indication of a possible viral event, in accordance with the principles of the present invention.

Moreover, the Network Monitor **302** retrieves subsequent sets of instantaneous aggregate location information. Location information triggered by the Network Monitor **302** may be portrayed in the form of snapshots displayed on a display of the Aggregate Location Dynamometer (ALD) **400**. Snapshots by the Network Monitor **302** comprise markers, each representing the location of individual wireless devices within a given region being monitored.

The Network Monitor **302** preferably obtains information regarding the number of wireless devices in a geographical area, at a given time, supported by a particular wireless network carrier (e.g., the number of wireless devices

sending messages over a wireless network via a particular base station (BS) **324**). The Network Monitor **302** uses predefined parameters and thresholds to determine if the monitored network indicates that a viral event may be occurring or impending (e.g., surpassed parameter thresholds possibly indicative of an excessive number and/or use of wireless devices for a given area, cell tower, etc.).

For instance, a Maximum Number of Devices parameter may indicate the maximum number of wireless devices that may be present within range of a particular base station (BS) **324** at a given time before a possible viral event is triggered. The Maximum Number of Devices parameter may be set manually, or empirically determined (e.g., the average number of devices present at a particular base station (BS) **324** over a course of time, as determined by historical data stored in the Historical Wireless Device Location Trends and Statistics database **312**).

The Network Monitor **302** triggers a possible viral event if a predefined parameter threshold has been surpassed (e.g., a given density of current location markers each representing a separate wireless device, or a directed convergence of at least two highly dense clusters of markers toward each other at a significant rate of speed is or has occurred, etc.).

The Network Monitor **302** preferably tallies the number of wireless devices in each instantaneous aggregate location snapshot that is captured. Predetermined parameters and thresholds are used to assess the number (e.g., the density) of wireless devices in a particular area to determine whether or not a possible viral event is occurring.

The Maximum Number of Devices parameter may alternatively be set to indicate the maximum number of wireless devices that may be present in an instantaneous aggregate location snapshot before a possible viral event is triggered. If the number of devices present in a given snapshot exceeds the Maximum Value of Devices parameter established for the respective location, a viral event may be triggered.

The Network Monitor **302** also preferably tallies the difference in the number of wireless devices in a given area, from one consecutive instantaneous aggregate location snapshot to the next. If the difference in the number of wireless devices from snapshot to snapshot exceeds a predefined value in a number of consecutive snapshots for a given area, base station, etc., then a viral event may be triggered. Thresholds for such a predefined Maximum Difference in Number of Wireless Devices parameter and a predefined Interval of Consecutive Snapshots parameter may be set manually, or empirically determined (e.g., the average difference in number of devices in consecutive instantaneous aggregate location snapshots capturing a particular area, e.g., a number of square feet, a particular base station (BS), etc., over a course of time, supported by a particular network carrier, as recorded in the Historical Wireless Device Location Trends and Statistics database **312**).

FIG. 2 depicts the flow of an exemplary Network Monitor **302** of the Aggregate Location Dynamometer (ALD) **400**, in accordance with the principles of the present invention.

In particular, as shown in step **500** of **FIG. 2**, the Network Monitor **302** preferably continuously, or at least periodically or intermittently, monitors network traffic.

In step **510**, monitored wireless data traffic is inspected for the presence of abnormal events, e.g., excessive volume for the time of day, etc. Configurable thresholds for the monitored parameters may be dynamic over the course of the day and even for traffic for any given tower or base station. The configurable thresholds for monitored parameters may be stored in the Configurable Parameter Threshold database **310**.

As shown in step **520**, if one or more parameter thresholds are exceeded, a viral event may be triggered. In response, the Network Monitor **302** triggers the Crowd Risk Determinant **304** to perform a location-based push/pull service to determine the location of each trackable wireless device within a particular geographic area (e.g., communicating through given base stations or antennas).

When parameter thresholds are not surpassed, indicating that a viral event is not occurring, location data may be logged in the Historical Wireless Device Location Trends and Statistics database **312**, as depicted in step **530**. Location data logged in the Historical Wireless Device Location Trends and Statistics database **312** may be used by the Crowd Risk Determinant **304** for future analyses of crowd risk.

FIG. 3 depicts the flow of an exemplary Crowd Risk Determinant **304** of the Aggregate Location Dynamometer (ALD) **400**, in accordance with the principles of the present invention.

In particular, the Crowd Risk Determinant **304** performs a location-based push/pull service to obtain location information pertaining to trackable wireless devices in a given area regarding a respective viral event triggered by the Network Monitor **302**, as shown in step **540** of **FIG. 3**.

In step **550**, collected location data is analyzed to assess the viral event that is occurring. The Crowd Risk Determinant **304** uses bounds and priorities set forth in the Risk Rules database **314** to determine if a possible viral event indicates a public safety risk. A viral pattern may or may not imply public safety risk. In step **560**, if a public safety risk is determined, the Crowd Risk Determinant **304** triggers the Alert Module **306** to take responsive public safety measures. Location data associated with a public safety risk is logged **530** in the Historical Wireless Device Location Trends and Statistics database **312**.

If the Crowd Risk Determinant **304** confirms that a particular viral event does not indicate a public safety risk, the Aggregate Location Dynamometer (ALD) **400** is triggered to routinely log location data **530** in the Historical Wireless Device Location Trends and Statistics database **312** for potential future analyses.

Determination of a public safety risk in the Crowd Risk Determinant **304** triggers the Alert Module **306** to implement proper public safety response services. An Alert Module **306** is the final step in the risk determination process of the Aggregate Location Dynamometer (ALD) **400**.

FIG. 4 depicts the flow of an exemplary Alert Module **306** of the Aggregate Location Dynamometer (ALD) **400**, in accordance with the principles of the present invention.

In particular, as shown in step **700** of **FIG. 4**, the Alert Module **306** is triggered by the Crowd Risk Determinant **304** and supplied the predetermined conditions constituting how to handle a determined public safety risk.

The Alert Module **306** immediately alerts the proper authorities **320** in the presence of a public safety risk, as depicted in step **710**.

Subsequent aggregate data collections may be made by the Alert Module **306** in step **720**. A particular public safety event may be programmed to result in multiple aggregate location data collections, set to occur at specific intervals. Moreover, a particular risk determination result may be configured to act as a triggered push/pull service **540** to acquire additional location data. Subsequent location information is routinely logged in the Historical Wireless Devices Location Trends and Statistics database **530**.

Configurable parameters are maintained in the Risk Rules database **314** to assist the Crowd Risk Determinant **304** in determining if location information pertaining to a viral event indicates a likely public safety risk. Factors for risk determination include but are not limited to the shape a cluster of location markers representing individual wireless devices of given density is forming, whether or not markers are spreading out or coming together, and/or at what rate of change a cluster of wireless devices is moving. Factors for risk determination also include the behavior of collective XY location coordinates of the most dense clusters of wireless devices, to where the most dense clusters of wireless devices of concern are moving, and/or whether or not a cluster of wireless devices in a particular location makes sense given the time of day.

For instance, empirical data may indicate that it is unusual for there to be a large number of wireless devices present downtown after business hours, or after a time when local bars and clubs have closed for the night. In this case, a configurable threshold may be set for a combination of location and time of day parameters (e.g., to articulate the number of wireless devices that must be

present within a defined downtown region, after a given hour) to trigger a public safety risk. A configurable parameter threshold (e.g., specifying the number of wireless devices capable of inhabiting a particular geographic expanse or particular shape of device formation, or a given density within that region) may manually or empirically be set. If a parameter threshold is surpassed, the Crowd Risk Determinant **304** informs the Alert Module **306** of the development of a public safety risk.

The shape of a cluster of wireless devices may often offer significant clues to crowd risk potential. When location information is collected, the best-fit shape of dense clusters formed by accumulation of wireless devices in a given area may be determined. The best-fit shape of a cluster of wireless devices may be compared against data contained in the historical Acceptable/Non-Acceptable Crowd Shape database **308** to determine danger potential. Different thresholds may be set for like parameters based on varying location.

FIG. 5 denotes first exemplary Aggregate Location Dynamometer (ALD) **400** location results, in accordance with the principles of the present invention.

In particular, the large oval shape **101** formed by markers representing individual wireless devices in the given geographical area **200** shown in **FIG. 5**, may be interpreted as a group of individuals enjoying a sporting event in a stadium. Factors to consider are time of day and scheduled events. The example in **FIG. 5** uses precise location.

FIG. 6 denotes second exemplary Aggregate Location Dynamometer (ALD) **400** location results, in accordance with the principles of the present invention.

In particular, the pattern **102** in the geographical area **200** shown in **FIG. 6** may be interpreted as cell sites pertaining to trackable individuals, assuming most individuals carry wireless devices. The same pattern may mean different things at different hours of the day. The exemplary location result shown in **FIG. 6** uses coarse location.

FIG. 7 denotes third exemplary Aggregate Location Dynamometer (ALD) **400** location results, in accordance with the principles of the present invention.

In particular, the crescent shape **103** in the geographical area **200** shown in **FIG. 7** is recognized as a pattern to be wary of. This crescent shape may represent a variety of different occurrences (e.g., a protest in front of a given location such as a court house, a famous author at a bookstore, etc.). The exemplary location result shown in **FIG. 7** uses precise location.

A rate-based parameter threshold may also or alternatively be set to define an acceptable rate at which wireless devices would otherwise normally inhabit a geographic area. For instance, if over a certain number of wireless devices enter an area in under a given amount of time (e.g., if three hundred wireless devices rush into a central pre-defined location in under ten minutes) then a public safety risk may be triggered.

Message content may be analyzed as an attribute for risk determination in response to a viral traffic event. For instance, a determination of the most frequent phrases may be matched against a database of suspected terms (e.g., "meet at the Lincoln Memorial", etc.).

Motion trends are also analyzed to assess crowd risk. The Crowd Risk Determinant **304** preferably determines whether the accumulation of wireless devices is becoming more or less dense about a central location and whether or not this behavior is expected based on trends and configured thresholds established for particular locations.

Precise accuracy of each individual device location is not extremely important in the present invention. Instead, focus lies in the volume, density, shape and movement of data points collected. Serving cell tower locations for each wireless device may be sufficient to satisfy initial triggering requirements for a possible viral event. The Aggregate Location Dynamometer (ALD) **400** is concerned with aggregate location data as opposed to data involving individual device locations. Data regarding parameters such as special events, geographical boundaries, motion trends, density, clustering, spread, time

of day and/or message content relating to trackable wireless devices are recorded in the Historical Wireless Device Location Trends and Statistics database **312**, as opposed to exact locations of specific wireless devices. Anonymity regarding precise locations of specific wireless devices alleviates
5 some concern surrounding the privacy of individuals during location based services (LBS), as used within the present invention.

An Aggregate Location Dynamometer (ALD) **400** has benefit to entities other than emergency management and crowd risk assessment parties. For instance, the present invention may also be used to estimate location trends in
10 cities, to rank areas such as parks and beaches by volume of visitors, and even to peg traffic patterns. Historical crowd data need not represent a public safety issue, e.g., it may merely relate to city planning or disaster recovery. Thus, data collected while scanning for crowd risk provides cities, states and government with valuable information.

15 Though, preferably all wireless devices in a given area would be monitored for crowd gathering tendencies, it is also within the principles of the present invention to monitor only those devices by the relevant wireless carrier providing Location Dynamometer (ALD) **400** services.

The present invention greatly benefits police, fire and general
20 emergency response personnel **320** desiring early warning about possible crowd related risks, e.g., riots. Moreover, the present invention is intended to combat nefarious cell technology to spawn mobs and riots without resorting to network restrictions.

While the invention makes use of the current location data of
25 preferably all wireless devices within a given region, area, etc., the invention also preferably makes distinction between the current mode of operation of the wireless devices being analyzed for a possible public safety risk. For instance, analysis of the density, shape, movement, etc. in determining a possible public safety risk may analyze only wireless devices in active mode.

30 While the invention has been described with reference to the exemplary embodiments thereof, those skilled in the art will be able to make

various modifications to the described embodiments of the invention without departing from the true spirit and scope of the invention.

5

CLAIMS

What is claimed is:

1. An aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer comprising:
 - 5 a network monitor to monitor a wireless network for an indication of a possible viral event;
 - a crowd risk determinant to assess location information pertaining to a possible viral event triggered by said network monitor; and
 - an alert module to alert in an event of a public safety risk
- 10 determined from an analysis of said possible viral event.
2. The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 1, further comprising:
 - 15 a historical database maintaining location-based information indicating a possible viral event associated with a plurality of wireless devices.
3. The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 2, wherein
- 20 said historical databases comprises:
 - an acceptable/non-acceptable crowd shape database.
4. The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 2, wherein
- 25 said historical databases comprises:
 - a configurable parameter threshold database.
5. The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 2, wherein
- 30 said historical databases comprises:
 - a historical wireless device location trends database.

6. The aggregate location dynamometer in a physical wireless network server, said aggregate location dynamometer according to claim 2, wherein said historical databases comprises:

a risk rules database.

5

7. A method of alerting to a problematic crowd risk with location based services (LBS), comprising:

monitoring wireless traffic for a possible impending viral event associated with a formation of a plurality of wireless devices;

10 requesting location information associated with said plurality of wireless devices;

determining a crowd risk of said crowd based on a shape and movement of said plurality of wireless devices; and

15 triggering alert of an impending crowd problem when said determined crowd risk is above a given threshold.

8. The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 7, wherein said monitoring wireless traffic comprises:

20 monitoring wireless traffic at a given point in a wireless network;
and

comparing a given traffic parameter associated with said monitored wireless traffic with a historical traffic parameter associated with crowd risk determination.

25

9. The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 8, wherein:

said given point is at a given base station in said wireless network.

30

10. The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 8, further comprising:

logging a snapshot look at current location data associated with location data.

5

11. The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 7, wherein said requesting location information comprises:

initiating a location request; and

10 comparing a viral pattern of respective locations of said plurality of wireless devices to predetermined risk rules.

12. The method of alerting to a problematic crowd risk with location based services (LBS) according to claim 11, further comprising:

15 logging said viral pattern.

ABSTRACT

An Aggregate Location Dynometer (ALD) in a physical wireless network alerts to a problematic crowd risk using location based services (LBS). An Aggregate Location Dynometer (ALD) comprises a Network Monitor, a Crowd Risk Determinant and an Alert Module. The Network Monitor monitors wireless traffic for a potential viral event, associated with a formation of a plurality of wireless devices. The Crowd Risk Determinant requests location information associated with a plurality of wireless devices in a given area regarding a respective viral event. The Crowd Risk Determinant determines if the viral event also indicates a crowd safety risk, based on the shape and movement of observed wireless devices. The Alert Module triggers an alert of an impending crowd problem when crowd risk is above a given threshold. Historical databases are empirically determined and maintained in the Aggregate Location Dynometer (ALD) for use in viral event and crowd risk assessment.

15

FIG. 1

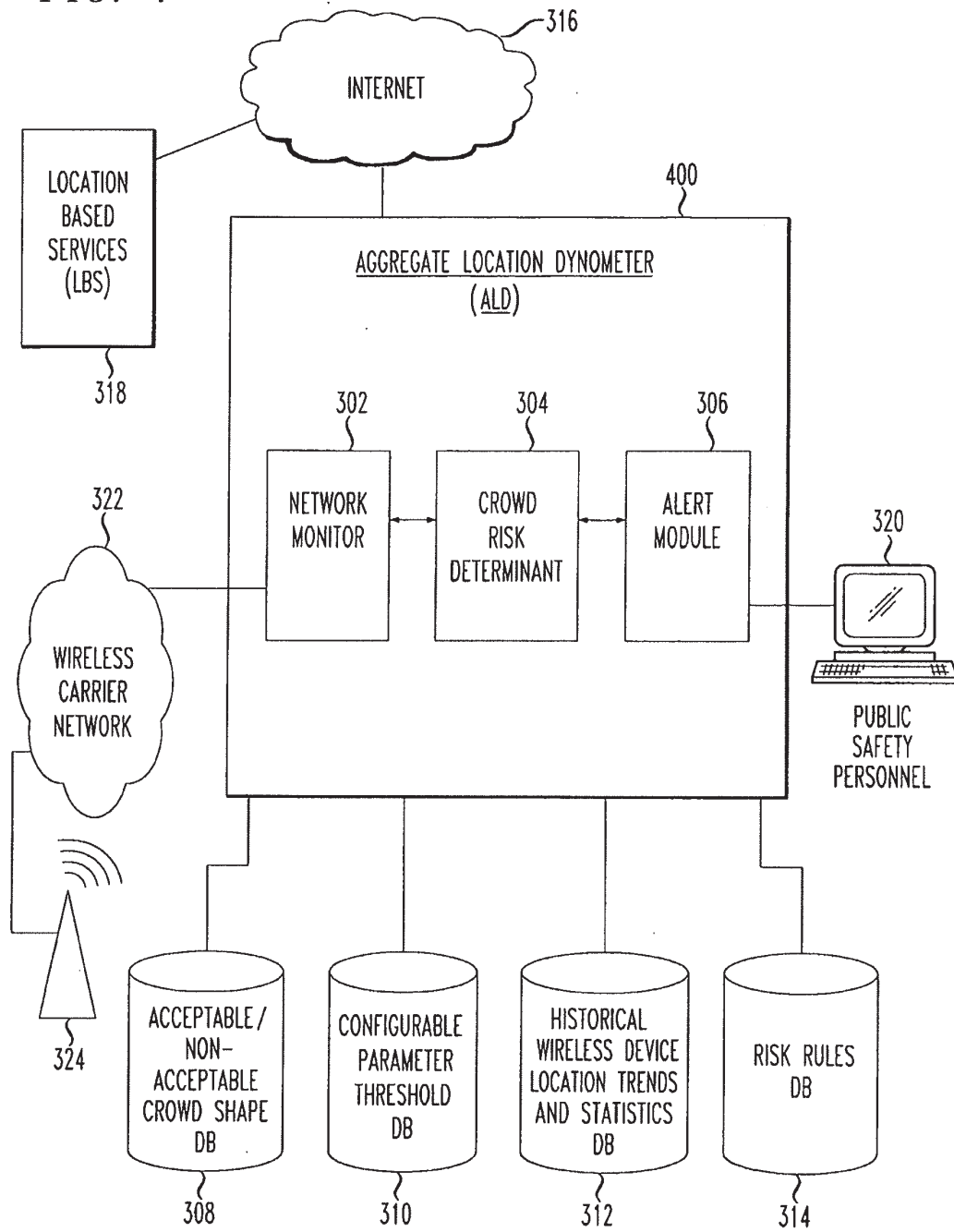


FIG. 2

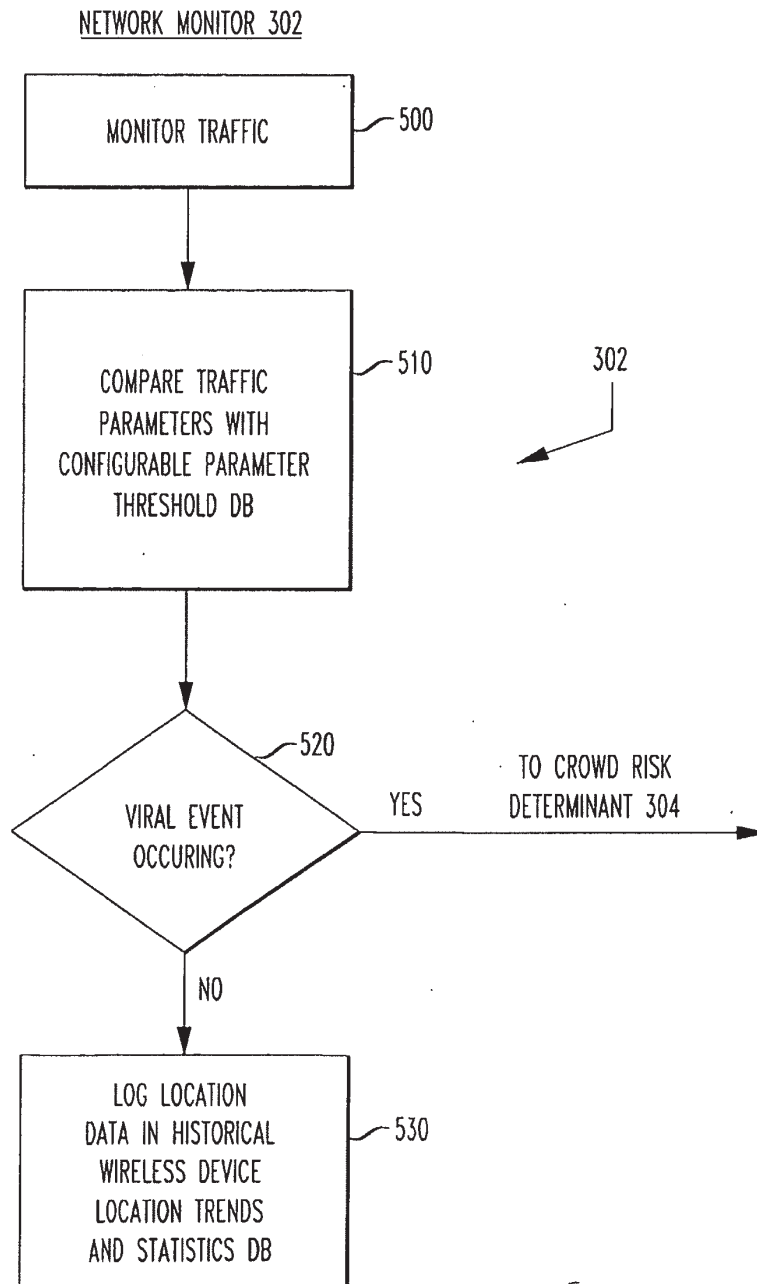


FIG. 3

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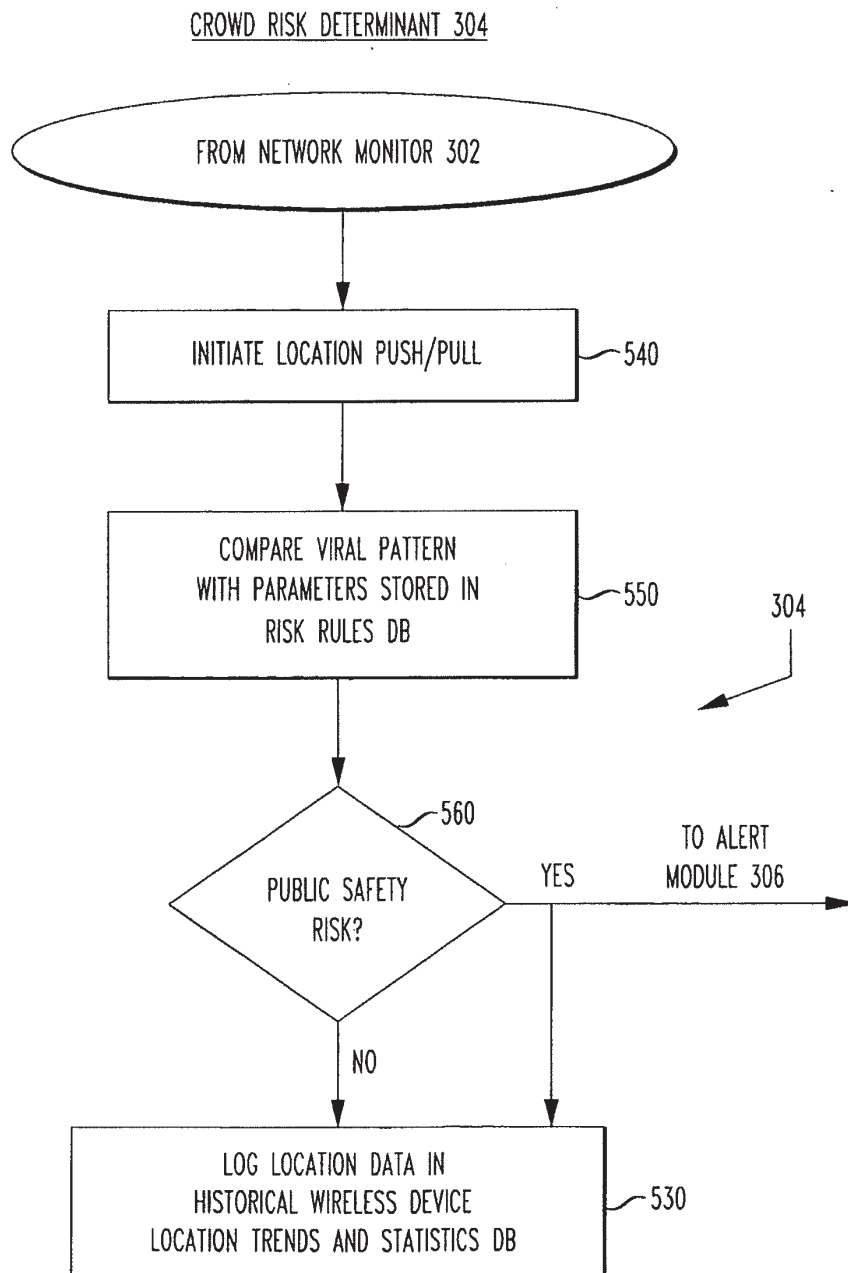
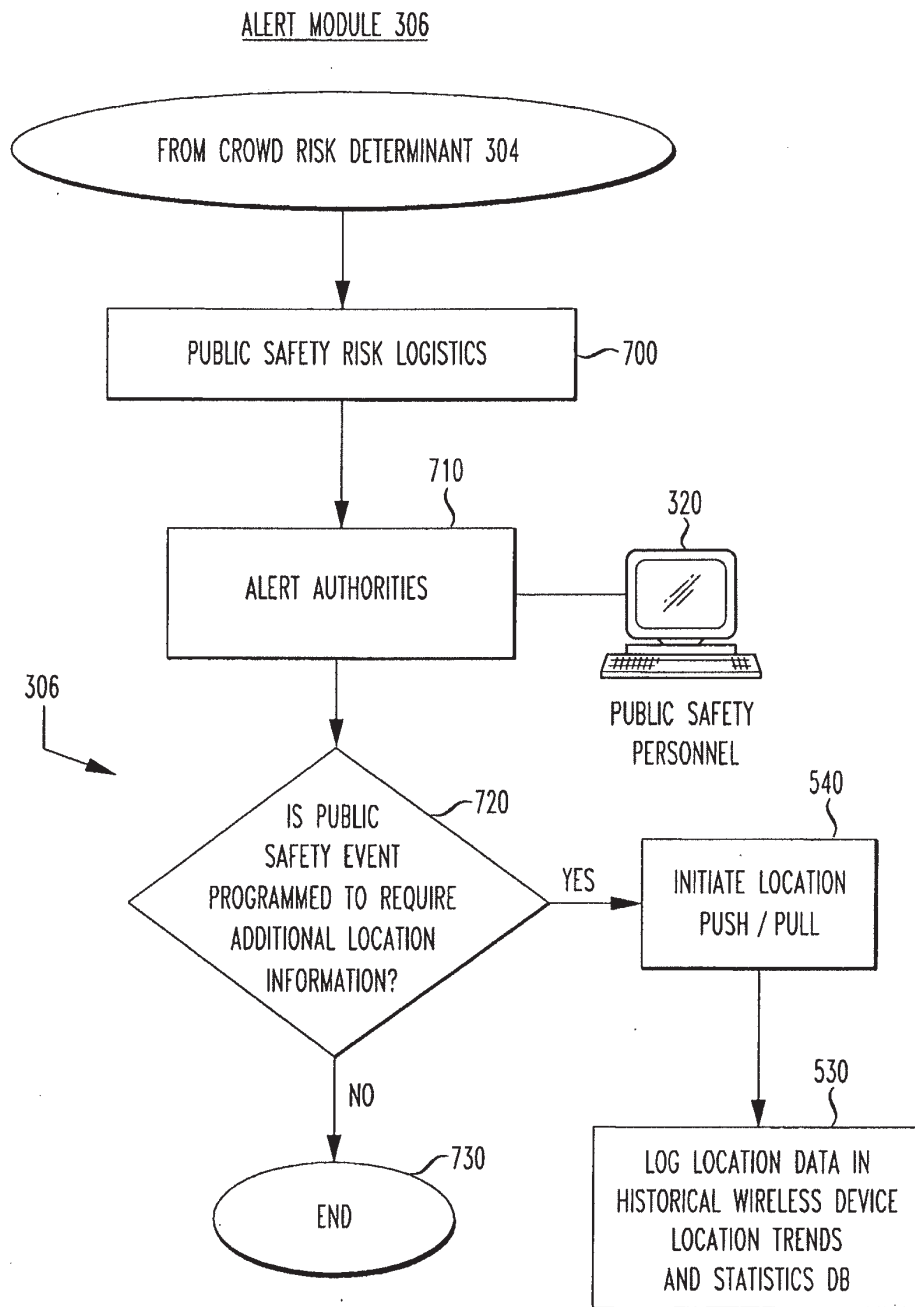


FIG. 4

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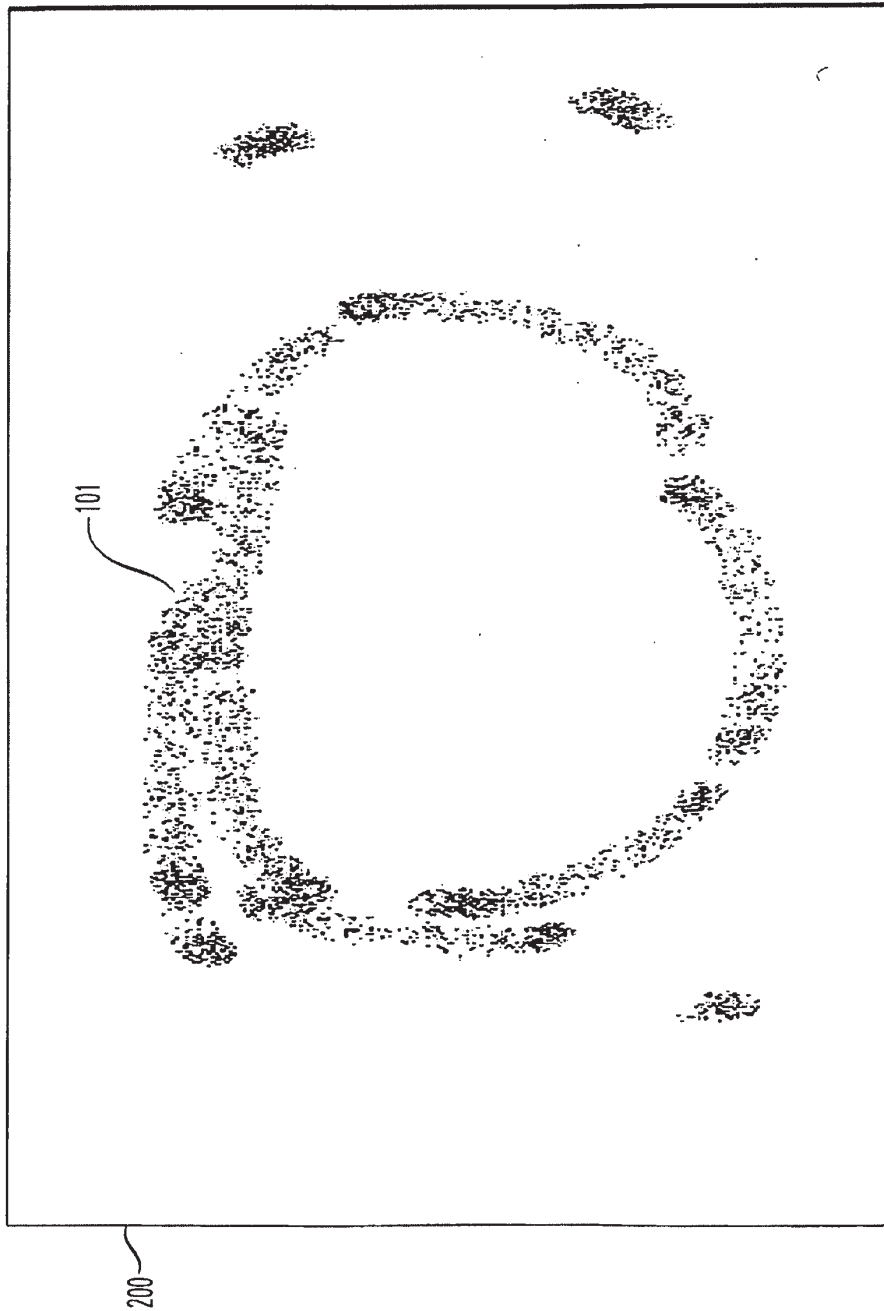


FIG. 5

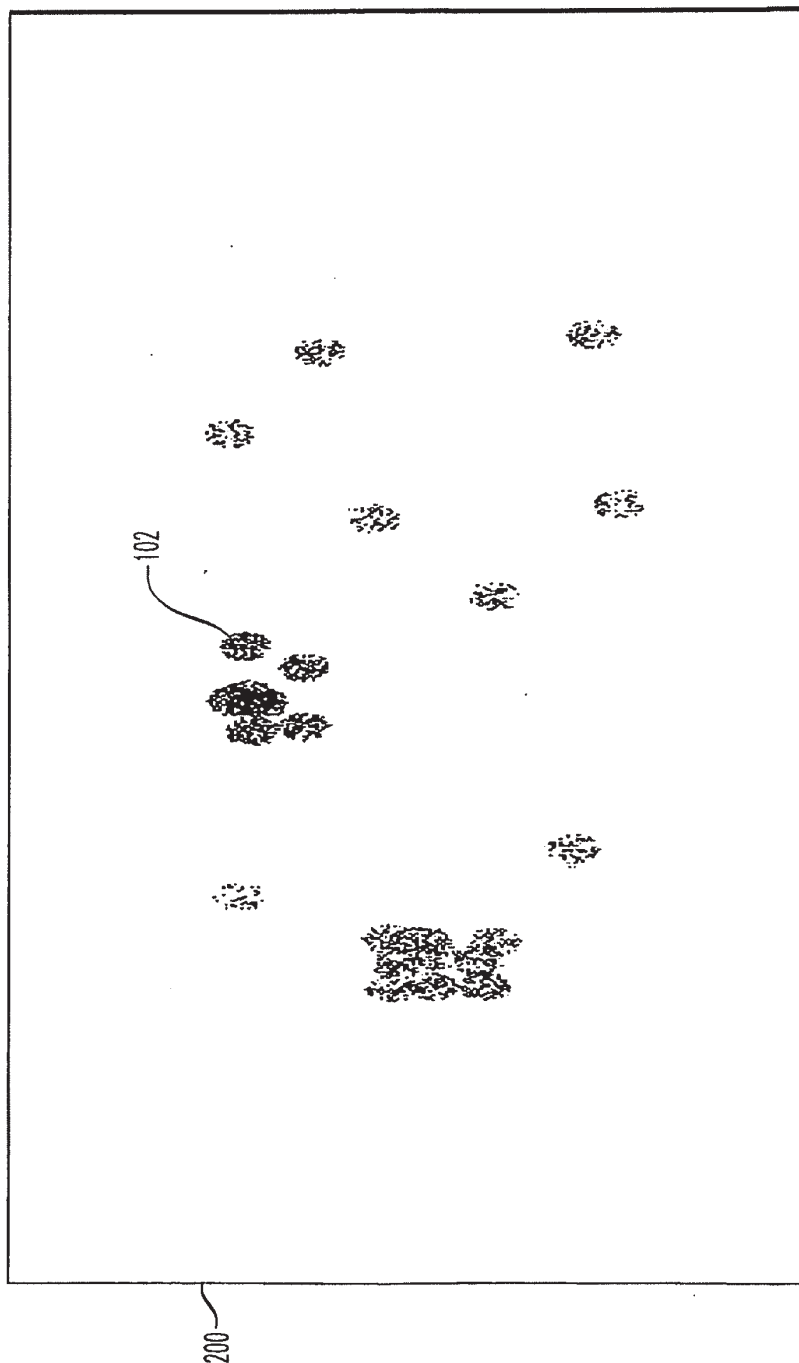


FIG. 6



FIG. 7

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[illegible]

Signature 	2/10/2014 Date
Name William H. Bollman (Print/Typed)	36457 Registration Number
<u>Note:</u> Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for signature requirements. If necessary, submit multiple forms for more than one signature, see below*.	
1 *Total of <u>1</u> forms are submitted.	

[Page 1 of 2]

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 1 hour 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.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40181
		Application Number	
Title of Invention	Aggregate Location Dynamometer (ALD)		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Michael	A.	Cuff		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Clyde Hill	State/Province	WA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		2417 96th Avenue NE			
Address 2					
City	Clyde Hill	State/Province	WA		
Postal Code	98004	Country i	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Todd		Gehrke		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Seattle	State/Province	WA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		10215 66th Avenue South			
Address 2					
City	Seattle	State/Province	WA		
Postal Code	98178	Country i	US		
Inventor 3					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Farhad		Kasad		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		40181	
		Application Number			
Title of Invention		Aggregate Location Dynamometer (ALD)			
City	Bothell	State/Province	WA	Country of Residence i	US
Mailing Address of Inventor:					
Address 1		8534 NE 202nd Way			
Address 2					
City	Bothell	State/Province	WA		
Postal Code	98011	Country i	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).		
☐ An Address is being provided for the correspondence Information of this application.		
Customer Number	117657	
Email Address		Add Email Remove Email

Application Information:

Title of the Invention	Aggregate Location Dynamometer (ALD)		
Attorney Docket Number	40181	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	7	Suggested Figure for Publication (if any)	

Filing By Reference :

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country i

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40181
		Application Number	
Title of Invention	Aggregate Location Dynamometer (ALD)		

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	83086		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the application number blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	Continuation of	13317996	2011-11-02
Prior Application Status	Expired	Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
13317996	Claims benefit of provisional	61573112	2011-09-02
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(d). When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX) ⁱthe information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(h)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Remove			
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40181
		Application Number	
Title of Invention	Aggregate Location Dynamometer (ALD)		

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. ☐ NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.
--

Authorization to Permit Access:

☒ Authorization to Permit Access to the Instant Application by the Participating Offices If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the World Intellectual Property Office (WIPO), and any other intellectual property offices in which a foreign application claiming priority to the instant patent application is filed access to the instant patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, WIPO, or other intellectual property office in which a foreign application claiming priority to the instant patent application is filed to have access to the instant patent application. In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the instant patent application with respect to: 1) the instant patent application-as-filed; 2) any foreign application to which the instant patent application claims priority under 35 U.S.C. 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the instant patent application; and 3) any U.S. application-as-filed from which benefit is sought in the instant patent application. In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing this Authorization.
--

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.
--

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40181
		Application Number	
Title of Invention	Aggregate Location Dynamometer (ALD)		

Applicant 1				Remove	
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.					
Clear					
☒ Assignee		☐ Legal Representative under 35 U.S.C. 117		☐ Joint Inventor	
☐ Person to whom the inventor is obligated to assign.			☐ Person who shows sufficient proprietary interest		
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:					
Name of the Deceased or Legally Incapacitated Inventor :					
If the Applicant is an Organization check here. ☒					
Organization Name		TeleCommunication Systems, Inc.			
Mailing Address Information:					
Address 1		275 West Street			
Address 2		Suite 400			
City		Annapolis	State/Province		MD
Country ⁱ		US	Postal Code		21401
Phone Number			Fax Number		
Email Address					
Additional Applicant Data may be generated within this form by selecting the Add button. Add					

Assignee Information including Non-Applicant Assignee Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Assignee 1			
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.			
Remove			
If the Assignee or Non-Applicant Assignee is an Organization check here. ☐			

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	40181
		Application Number	
Title of Invention	Aggregate Location Dynamometer (ALD)		

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		State/Province	
Country i		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Add

Signature:

Remove

NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications

Signature	/William H. Bollman/		Date (YYYY-MM-DD)	2014-02-10
First Name	William	Last Name	Bollman	Registration Number
			36457	

Additional Signature may be generated within this form by selecting the Add button.

Add

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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.**

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

Declaration and Power of Attorney

As below named inventors, we hereby declare that:

Our residence, post office address and citizenship are as stated below next to our names.

We believe we are the original, first and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled **AGGREGATE LOCATION DYNOMETER (ALD)**, the specification of which is filed herewith.

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims, as amended by an amendment, if any, specifically referred to in this oath or declaration.

We acknowledge the duty to disclose all information known to us which is material to patentability as defined in Title 37, Code of Federal Regulations, 1.56.

We hereby claim foreign priority benefits under Title 35, United States Code, 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

None

We hereby claim the benefit under Title 35, United States Code, 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, 112, we acknowledge the duty to disclose all information known to us to be material to patentability as defined in Title 37, Code of Federal Regulations, 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

**U.S. Provisional Application, Serial No. 61/573,112, entitled
"AGGREGATE LOCATION DYNOMETER (ALD)," filed on September 2, 2011.**

We hereby declare that all statements made herein of our 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.

Best Available Copy

20-266

We hereby appoint the following attorneys with full power of substitution and revocation, to prosecute said application, to make alterations and amendments therein, to receive the patent, and to transact all business in the Patent and Trademark Office connected therewith:

William H. Bollman	(Reg. No. 36,457)
Edward J. Stemberger	(Reg. No. 36,017)
Jeffrey S. Melcher	(Reg. No. 35,950)
Leon R. Turkevich	(Reg. No. 34,035)
Paul E. White, Jr.	(Reg. No. 32,011)
Dan Fuil	(Reg. No. 46,504)

all telephone calls to:

William H. Bollman at (202) 261-1020.

Full name of 1st joint inventor: Michael A. CUFF

Inventor's signature



Date:

11/01/2011

Residence: Clyde Hill, King County, Washington

Citizenship: USA

Post Office Address: 2417 96th Ave NE, Clyde Hill, WA 98004Full name of 2nd joint inventor: Todd GEHRKE

Inventor's signature



Date:

Nov 1 2011

Residence: Seattle, King County, Washington

Citizenship: USA

Post Office Address: 10215 66th Avenue South, Seattle, WA 98178Full name of 3rd joint inventor: Farhad KASAD

Inventor's signature



Date:

11/01/2011

Residence: Bothell, King Country, Washington

Citizenship: USA

Post Office Address: 8534 NE 202nd Way, Bothell, WA 98011