



(43) International Publication Date  
18 September 2014 (18.09.2014)

(51) International Patent Classification:  
G06F 15/00 (2006.01)

(21) International Application Number:  
PCT/US20 14/029 133

(22) International Filing Date:  
14 March 2014 (14.03.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
61/802,3 10 15 March 2013 (15.03.2013) US  
61/847,079 16 July 2013 (16.07.2013) US  
61/847,555 17 July 2013 (17.07.2013) US  
61/858,563 25 July 2013 (25.07.2013) US

(71) Applicant: LEEO, INC. [US/US]; 989 Commercial Street, Palo Alto, California 94303 (US).

(72) Inventors: GETTINGS, Adam M.; 300 Hill Street, Red Wing, Minnesota 55066 (US). CHAN, Eddy Y.; 250 King Street, #866, San Francisco, California 94107 (US). STEVENS, Andrew G.; 2639 Alma Street, Palo Alto, California 94306 (US).

(74) Agents: LEVINE, David A. et al; Levine Bagade Han Lip, 2400 Geng Road, Suite 120, Palo Alto, California 94303 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

[Continued on nextpage]

(54) Title: ENVIRONMENTAL MEASUREMENT DISPLAY

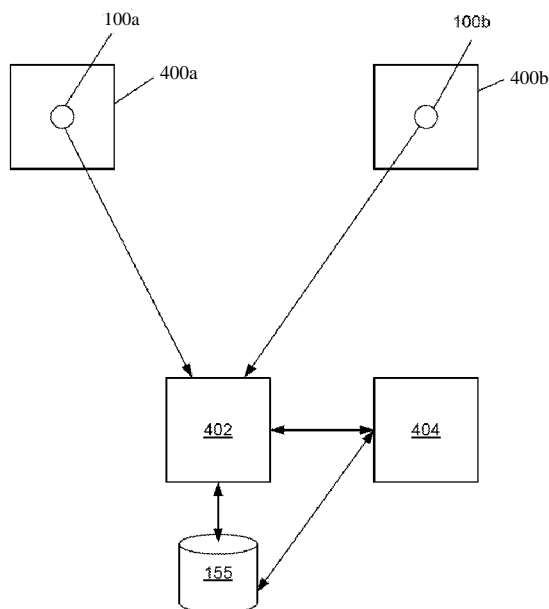


Fig. 6

(57) Abstract: Environmental measurement display system that can be used in home and commercial environments to monitor the air quality in an environment is disclosed. The environmental measurement display system can include an environmental sensor array, signal-processing circuitry, a power supply, a display device, a communications system, and a remote data visualization system.

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.1 7(H))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.1 7(Hi))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

**(88) Date of publication of the international search report:**

1 1 December

2014

**Published:**

- *with international search report (Art. 21(3))*

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

Group I: Claims 1-23; Group II: Claims 24-45; Group III: Claims 46-55; Group IV: Claims 56-66

-"Please see Supplemental Page-\*\*\*"

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:  
1-23

**Remark on Protest**

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> <b>IPC (8) -</b> G06F 15/00 (2014.01) <b>USPC -</b> 700/276; CPC- G06F 19/3406 According to International Patent Classification (IPC) or to both national classification and IPC				
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC(8) Classification(s): G06F15/00, 19/00; G05B 15/00; G01K1/00 (2014.01) CPC Classification(s): G06F 19/3406, F24F 11/0086, F24F 11/0009; USPC Classification(s): 700/276, 277; 706/930, 702/127, 130 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 (US-G, US-A, EP-A, EP-B, WO, JP-bib, DE-C.B, DE-A, DE-T, DE-U, GB-A, FR-A); ProQuest; IEEE/IEEEExplore; Google/Google Scholar; IP.com; Espacenet; Search Terms: climate, environment, monitor, sensor, data, information, economic, store, quality, weight, score, rank, quality, economic, database, storage, statistics, trend, container, tank, water, display, output, warehouse				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
Y	US 2013/0038470 A1 (NIEMEYER, G et al.) February 14, 2013, Abstract, paragraphs [0005], [0007], [0010], [0051], [0060]	1-23		
Y	US 6216956 B1 (EHLERS, GA et al.) April 17, 2001, column 3, lines 26-52, column 8, lines 43-48, column 10, lines 42-48, column 19, lines 14-34	1-23		
Y	WO 2007/148299 A2 (LUCINSKY, DG) December 27, 2012, page 12, lines 6-14	4, 6, 8, 17		
Y	US RE40437 E (ROSEN, H) July 15, 2008, column 3, lines 29-48	7		
Y	US 8224576 B2 (JENSEN, TP et al.) July 17, 2012, column 11, lines 18-26	11		
Y	WO 2005/063006 A1 (MCMILLAN, AH et al.) July 14, 2005, page 6, lines 26-30, page 16, lines 18-22	13		
<input type="checkbox"/> Further documents are listed in the continuation of Box C.				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;">           * 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         </td> <td style="width: 50%; vertical-align: top;">           "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            "&amp;" document member of the same patent family         </td> </tr> </table>			* 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
* 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 10 September 2014 (10.09.2014)		Date of mailing of the international search report <div style="text-align: center; font-size: 1.2em; font-weight: bold;">17 OCT 2014</div>		
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: <div style="text-align: right;">Shane Thomas</div> <div style="font-size: 0.8em; margin-top: 5px;">           PCT Helpdesk: 571-272-4300            PCT OSP: 571-272-7774         </div>		

--\*-Continued from Box No. III - Observations where unity of invention is lacking-\*\*\*-

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fee must be paid.

Group I: Claims 1-23 are directed toward an environmental monitoring system and methods comprising economical data.

Group II: Claims 24-45 are directed toward a property monitoring system for monitoring property at a first location.

Group III: Claims 46-55 are directed toward an environmental monitoring method comprising encrypting and decrypting environmental data.

Group IV: Claims 56-66 are directed toward an environmental monitoring method comprising forming composite data.

The inventions listed as Groups I-IV do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical features of Group I include a server calculating a first economical data for a first environment; and comparing the first economical data to a second economic data, which are not present in Groups II-IV.

The special technical features of Group II include data on a market value for the property; and calculating a product value by modifying the market value with data for an environmental quality factor, which are not present in Groups I and III-IV.

The special technical features of Group III include encrypting environmental data; and decrypting the environmental data on a second computer, which are not present in Groups I-II and IV.

The special technical feature of Group IV includes attaching location data to environmental quality data to form composite data, which is not present in Groups I-III.

The common technical feature shared by Groups I-IV is an environmental monitoring system comprising: a first sensor system location in a first environment wherein the first sensor system is configured to measure a first environment quality factor; recording data in a database; and output first sensor data to a second computer.

However, this common feature is previously disclosed by US 2013/0038470 A1 (NIEMEYER et al.). Niemeyer et al. discloses an environmental monitoring system (monitoring climate parameters; Abstract) comprising: a first sensor system location in a first environment (monitoring device includes multiple sensors placed in critical rooms of a house; Abstract and paragraph [0060]) wherein the first sensor system is configured to measure a first environment quality factor (sensors monitor air quality modalities; Abstract); recording data in a database (data from the sensor devices are archived in a database; paragraph [0051]); and output first sensor data to a second computer (monitored air quality parameters are transmitted a server over a network; paragraph [0062]).

Since the common technical feature is previously disclosed by the Niemeyer et al. reference, this common feature is not special and so Groups I-IV lack unity.