

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
10 September 2010 (10.09.2010)

PCT

(10) International Publication Number  
**WO 2010/101929 A3**

- (51) **International Patent Classification:**  
*G01S 11/06* (2006.01)     *G01S 5/02* (2010.01)
- (21) **International Application Number:**  
PCT/US2010/025936
- (22) **International Filing Date:**  
2 March 2010 (02.03.2010)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
61/156,569     2 March 2009 (02.03.2009)     US
- (71) **Applicant (for all designated States except US):** **DI-VERSEY, INC.** [US/US]; 8310 16th Street, M/S 509, P.O. Box 902, Sturtevant, WI 53177-0902 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** **LI, Anderson, Chun Kong** [GB/GB]; 21 East Acres, Colgrave, Nottingham NG12 3JP (GB). **BHAGVANJI, Anup** [GB/GB]; 22 Chingford Road, Bilborough, Nottingham NG8 3BT (GB).
- (74) **Agent:** **BOLLIS, Gregory, S.**; Diversey, INC., 8310 16th Street, M/S 509, P.O. Box 902, Sturtevant, WI 53177-0902 (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, 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, IS, JP, KE, KG, KM, 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, PE, PG, PH, PL, PT, RO, RS, RU, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: HYGIENE MONITORING AND MANAGEMENT SYSTEM AND METHOD

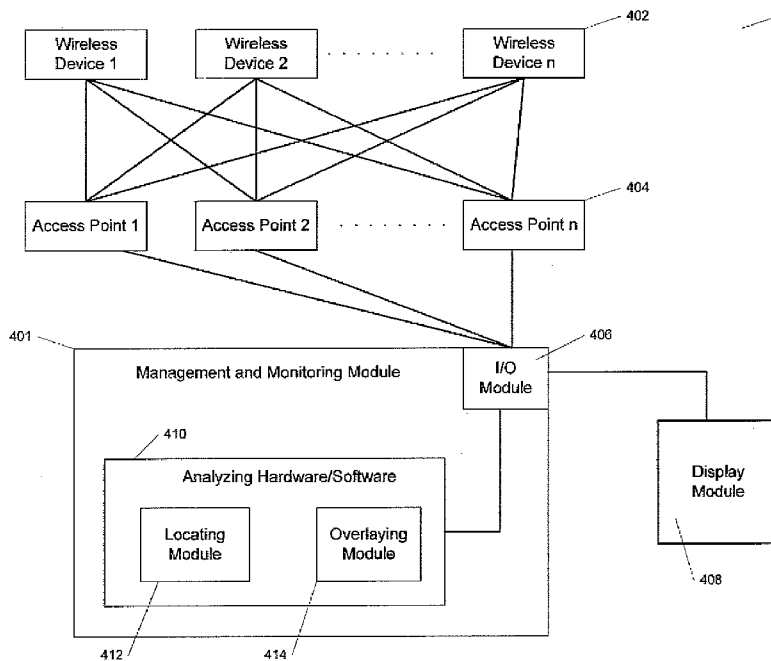


Figure 4

(57) **Abstract:** A Real Time Locating System (RTLS) hygiene management and monitoring system for individuals and companies to manage and monitor the hygiene of their surroundings. In some embodiments of the invention, RTLS is used to monitor and manage cleanliness of rooms and surfaces and the location of cleaning supplies and cleaning personnel. The invention provides improved efficiency and quality of hygiene services. For instance, the invention can enable prioritization of cleaning, improve efficient use of cleaning supplies and cleaning personnel, track short and long term cleaning operations, and provide insight into ineffective cleaning.

WO 2010/101929 A3

**Published:**

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

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

6 January 2011

## INTERNATIONAL SEARCH REPORT

International application No.  
**PCT/US2010/025936****A. CLASSIFICATION OF SUBJECT MATTER***G01S 11/06(2006.01)i, G01S 5/02(2010.01)i*

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)

G01S 11/06; G06F 15/16; G08B 21/02; G08B 25/04; G08B 23/00

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) &amp; Keywords: hygiene, monitoring, tag, area, space, building, strength, signal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7242307 B1 (CLAUDE W. LEBLOND et al) 10 July 2007 See abstract, claims 1-9 and figures 1-3	1-20
A	JP 2008-176766 A (ALLEGHENY-SINGER RESEARCH INST) 31 July 2008 See abstract, claim 1 and figure 1	1-20
A	US 6727818 B1 (WILDMAN; TIMOTHY D. et al.) 27 April 2004 See abstract, claims 1-18 and figure 1	1-20
A	KR 10-2006-0047806 A (MICROSOFT CORP.) 18 May 2006 See abstract, claims 1-2 and figures 2, 3	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

\* 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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

29 SEPTEMBER 2010 (29.09.2010)

Date of mailing of the international search report

**30 SEPTEMBER 2010 (30.09.2010)**

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, HYEON HONG

Telephone No. 82-42-481-8527



**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2010/025936**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 7242307 B1	10.07.2007	None	
JP 2008-176766 A	31.07.2008	AU 2007-219356 A1 CA 2606285-A1 CN 101162531 A0 EP 1913892 A2 EP 1913892 A3 MX 2007012531 A US 2008-0087719 A1 US 7770782 B2	01.05.2008 13.04.2008 16.04.2008 23.04.2008 13.01.2010 17.02.2009 17.04.2008 10.08.2010
US 6727818 B1	27.04.2004	US 2004-090333 A1 US 2006-0132316 A1 US 7015816 B2 US 7408470 B2	13.05.2004 22.06.2006 21.03.2006 05.08.2008
KR 10-2006-0047806 A	18.05.2006	CN 1715951 A CN 1715951 C0 EP 1612999 A1 JP 2006-010687 A US 2006-0046709 A1 US 7509131 B2	04.01.2006 04.01.2006 04.01.2006 12.01.2006 02.03.2006 24.03.2009