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(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, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(if))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(H))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(Hi))
- of inventorship (Rule 4.17(ivf))

[Continued on next page]

(54) **Title:** PERSONNEL LOCATION AND MONITORING SYSTEM AND METHOD FOR ENCLOSED FACILITIES

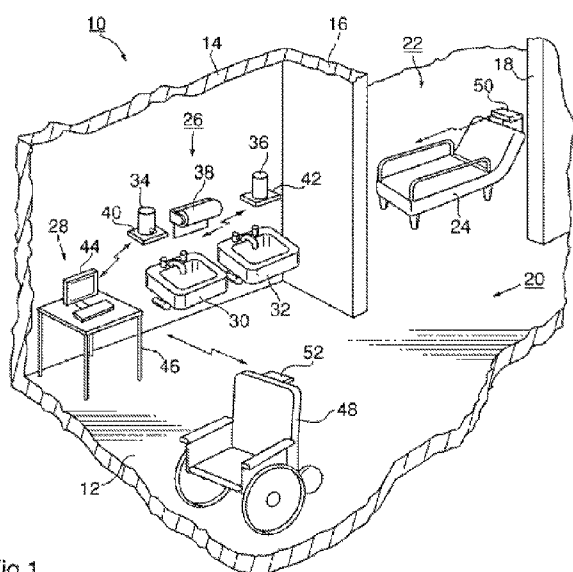


Fig. 1

(57) **Abstract:** A wireless time-of-flight distance measurement device and/or a motion detector is used at each of a plurality of stations in a wireless network in an enclosed facility to accurately locate a badge-wearing person near the station. The location, badge number and time of detection are transmitted through the network and stored in a computer memory. In a healthcare facility, hand washing detectors are located at some of the stations and caused to energize a hand wash status indicator light on the badge when the wearer has washed his or her hands. The light remains "on" for only a certain length of time, but will be extinguished sooner by a monitor device near each patient when the healthcare worker leaves the vicinity of the patient. These events also are transmitted and stored so that a timed record of each worker's hand washing and visits to patients is created.

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29 July 2010

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2Qi)*

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2009/062493

A. CLASSIFICATION OF SUBJECT MATTER
 INV. G06F19/00 G07C1/10

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)

G06F G07C

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 practical, search terms used)

EPO-Internal , WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	CHUNG W-Y ET AL: "Passive and cost effective people indoor location tracking system for ubiquitous healthcare" PROCEEDINGS OF THE SIXTH IASTED INTERNATIONAL MULTI-CONFERENCE ON WIRELESS AND OPTICAL COMMUNICATIONS: JULY 3-5, 2006, BANFF, ALBERTA, CANADA,, 3 July 2006 (2006-07-03), pages 527-530, XP009130658 ISBN: 978-0-88986-563-1	1-3, 12-13
Y	abstract page 527 - page 528; figure 1 ----- -/--	4-11,14

☒ 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 document 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

15 March 2010

Date of mailing of the international search report

15/06/2010

Name and mailing address of the ISA/

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INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/062493

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category"	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	PRIYANTHA N B ET AL: "The Cricket Location-Support System"	1-3, 12-13
Y	MOBICOM. PROCEEDINGS OF THE ANNUAL INTERNATIONAL CONFERENCE ONMOBILE COMPUTING AND NETWORKING, XX, XX, 6 August 2000 (2000-08-06), XP002181658 abstract page 33, right-hand column - page 34 -----	4-11,14
Y	US 2007/247316 A1 (WILDMAN TIMOTHY D [US] ET AL WILDMAN TIMOTHY D [US] ET AL) 25 October 2007 (2007-10-25) paragraph [0042] - paragraph [0052] paragraph [0085] - paragraph [0087] paragraph [0141] - paragraph [0151] paragraph [0230] -----	4-11,14

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/062493

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

see additional sheet

- 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 an 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, if is covered by claims Nos

1-14

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

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14

A system and a method for locating personnel by transmitting two signals with different velocities and recording the time difference of arrival.

2. claims: 15-19, 32-33

An identity badge having a remotely actuatable hand wash status indicator and a method of controlling the indicator.

3. claims: 20-31

A locator and monitor system detecting people located within a predetermined distance from a patient; storing the identification and localization data.

4. claims: 34-36

A locator and monitor system using a motion detector to detect proximity; storing the identification and localization data.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/062493

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2007247316	A1	25-10-2007	NONE