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Datasheet for the decision of 1 September 2023

Case Number: T 1246/20 - 3.4.01

Application Number: 10749210.0

Publication Number: 2404193

IPC: G01S5/02, G01S11/02, G01S11/06, G01S13/46, G06Q10/06

Language of the proceedings: EN

Title of invention:
HYGIENE MONITORING AND MANAGEMENT SYSTEM AND METHOD

Patent Proprietor:
Diversey, Inc.

Opponent:
Ecolab, Inc.

Headword:
Hygiene Monitoring / DIVERSEY

Relevant legal provisions:
EPC Art. 100(c)

Keyword:
Grounds for opposition - extension of subject-matter (yes)

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Case Number: T 1246/20 - 3.4.01

D E C I S I O N
of Technical Board of Appeal 3.4.01
of 1 September 2023

Appellant: (Patent Proprietor)	Diversey, Inc. 1300 Altura Road, Suite 125 Fort Mill, SC 29708 (US)
Representative:	LKGLOBAL Lorenz & Kopf Patentanwalt Attorney at Law PartG mbB Brienner Straße 11 80333 München (DE)
Appellant: (Opponent)	Ecolab, Inc. 1, Ecolab Place Saint Paul, MN 55102 (US)
Representative:	HGF Delta House 50 West Nile Street Glasgow G1 2NP (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 2 March 2020 concerning maintenance of the European Patent No. 2404193 in amended form.**

Composition of the Board:

Chairman	T. Zinke
Members:	B. Noll
	D. Rogers

Summary of Facts and Submissions

I. The opposition was based on the grounds of Articles 100(a) EPC (lack of novelty, lack of inventive step and subject-matter excluded from patentability), 100(b) EPC and 100(c) EPC.

II. The Opposition Division decided that the main request (patent as granted) contained added subject-matter and that the subject-matter of claim 1 of auxiliary request 1 lacked an inventive step. The second auxiliary request was found to meet the requirements of the EPC.

III. The Opposition Division's decision was appealed both by the patent proprietor and the opponent.

IV. With the statement of grounds of appeal, the proprietor submitted claims of a new auxiliary requests 1a.

V. The Board gave a preliminary opinion on the case with a communication pursuant to Article 15(1) RPBA.

VI. In the oral proceedings before the Board, the proprietor replaced auxiliary request 1 by a modified set of claims (auxiliary request I)

VII. The patent proprietor's final requests are to set aside the decision under appeal and to maintain the patent as granted (main request), or upon the basis of auxiliary

request I as filed during the oral proceedings, or one of auxiliary requests 1a or 2.

VIII. The opponent's request is to set aside the decision under appeal and to revoke the patent.

IX. Claim 1 as granted reads as follows (reference signs omitted, feature labelling by the Board):

(a) A hygiene monitoring and management system comprising:

(b) a wireless tag;

(c) at least two access points operable to communicate wirelessly with the wireless tag;

(d) a locating module operable to repeatedly determine a location of the wireless tag based on a distance between the wireless tag and the at least two access points; and
track movement of the wireless tag based on repeated determinations of the location of the wireless tag; and

(e) a management and monitoring module operable to receive data regarding the tracked movement of the wireless tag and to generate a graphical representation of a cleanliness level of an area determined based on the tracked movement,

(f) wherein the graphical representation of

the determined cleanliness level uses a color-coded or shaded key such that the darker the area, the dirtier the area.

X. Claim 1 of auxiliary request I reads:

A hygiene monitoring and management system comprising:

- a wireless tag operable to transmit distance signals, wherein each distance signal indicates a tag distance between the wireless tag and an associated access point and wherein the tag distance is based on a strength of a wireless signal from the associated access point received by the wireless tag;
- at least two access points operable to communicate wirelessly with the wireless tag;
- a display unit;
- a management and monitoring module comprising a locating module said locating module operable to
- repeatedly determine a location of the wireless tag based on a distance between the wireless tag and the at least two access points wherein the distance is based on a strength of a wireless signal from the access point received by the wireless tag; and
- track movement of the wireless tag based on repeated determinations of the location of the wireless tag; a wherein the management and monitoring module is operable to receive data regarding the tracked movement of the wireless tag and to generate a graphical representation of a cleanliness level of an area determined

based on the tracked movement,
wherein the graphical representation of the determined cleanliness level and the location of the wireless tag are displayed on the display unit and uses a color-coded or shaded key such that the darker the area, the dirtier the area,
which corresponds to the observation the darker the room the more heavily used and dirtier the room
wherein measurements concerning the tracked movements are matched to a database of stored values related to the various possible locations in an area to be monitored and thereafter an overlaying module can plot or assign a value representing the location of the wireless tag on a previously stored map of the area where the hygiene monitoring is occurring, whereby the plotted locations or location values of the wireless tags and the stored map are then be output through an I/O module and sent to the display module as a graphical display for a user of the hygiene management and monitoring system
wherein the monitoring module is operable to determine the cleanliness level of the area based on the tracked movement of the wireless tag.

XI. Claim 1 of auxiliary request 1a reads:

A hygiene monitoring and management system comprising:

- a wireless tag operable to transmit distance

signals, wherein each distance signal indicates a tag distance between the wireless tag and an associated access point and wherein the tag distance is based on a strength of a wireless signal from the associated access point received by the wireless tag;
- at least two access points operable to communicate wirelessly with the wireless tag;
- a display unit;
- a management and monitoring module comprising a locating module said locating module operable to repeatedly determine a location of the wireless tag based on a distance between the wireless tag and the at least two access points wherein the distance is based on a strength of a wireless signal from the access point received by the wireless tag; and
- track movement of the wireless tag based on repeated determinations of the location of the wireless tag; a wherein the management and monitoring module is operable to receive data regarding the tracked movement of the wireless tag and to generate a graphical representation of a cleanliness level of an area determined based on the tracked movement,

wherein the graphical representation of the determined cleanliness level and the location of the wireless tag are displayed on the display unit and uses a color-coded or shaded key such that the darker the area, the dirtier the area.

XII. Claim 1 of auxiliary request 2 reads:

A hygiene monitoring and management system comprising:
a wireless tag operable to transmit distance signals, wherein each distance signal indicates a tag distance between the wireless tag and an associated access point and wherein the tag distance is based on a strength of a wireless signal from the associated access point received by the wireless tag;

at least two access points operable to communicate wirelessly with the wireless tag;

a display unit;

a management and monitoring module comprising a locating module said locating module operable to repeatedly determine a location of the wireless tag based on a distance between the wireless tag and the at least two access points wherein the distance is based on a strength of a wireless signal from the access point received by the wireless tag; and

track movement of the wireless tag based on repeated determinations of the location of the wireless tag;

wherein the management and monitoring module is operable to receive data regarding the tracked movement of the wireless tag and to generate a graphical representation of a cleanliness level of an area determined based on the tracked movement,

wherein the graphical representation of the determined cleanliness level and the location of the wireless tag are displayed on the display unit and uses a color-coded or shaded key such that the darker the area, the dirtier the area;

wherein the wireless tag is coupled to a spray device and a second wireless tag is secured to a wiping device, and wherein the management and monitoring module determines a surface cleanliness level of a surface within the area based on:

predicting a spray pattern of the spray device on the surface based on tracking the movement of the spray device and detecting a dispensement of the spray device, and

estimating an effective wipe area on the surface based on the spray pattern and tracking movement of the wiping device.

XIII. The parties' arguments and submissions, insofar relevant for the decision, are discussed in the Reasons, below.

Reasons for the Decision

The patent

1. The patent relates to a cleanliness monitoring and management system. The monitoring makes use of the repetitive detection of the position of a tag carried

by a cleaner or cleaning equipment, eg by RSSI (Relative Signal Strength Indicator) measurement of signals from two ore more access points and establishing a track of the tag from repetitively determined positions. The management system has three aspects. One is that a graphical map of the area to be managed is generated and displayed. Another is that cleanliness levels are overlaid on the map to show a cleanliness status of the area. Another is that the positions and tracks of the tags serve to show the cleanliness level of the monitored area.

Main request (claim 1 as granted): added subject-matter

2. Feature (f) of claim 1 defines a correspondence between a color or gray level representation of an area and the degree of dirtiness of that area, namely that the darker an area is presented, the dirtier it is. Claim 1 is, therefore, to be understood as meaning that the system is capable of directly determining a level of uncleanliness of an area based on the tracked movement of the wireless tag. This, however, is an additional technical information compared to the disclosure of the original application.

3. The application as originally filed discloses that the heaviness of use may serve as an indicator of dirtiness (A2-publication, paragraph 38, second sentence, "... *such that the darker the room, the more heavily used and dirtier the room*"). This is understood as meaning that the use of a room is monitored, for example by counting the number of persons accessing the area, that this frequency of use is graphically indicated as a gray scale which may then be interpreted as a level of uncleanliness.

4. The application further discloses a call/clean button to report when a room needs to be cleaned or has been cleaned (publication A2, paragraph 38, fourth sentence). However, triggering a button to request or acknowledge cleaning is not a measurement of the cleanliness level of the area, and, in particular, it is not a determination of the cleanliness level of an area based on the tracked movement of the wireless tag, as defined in feature (e).

5. Finally, the application discloses that the path 712 monitored for a cleaning device is shown as a corresponding graphical representation (A2-publication, paragraph 44, Figure 7). In Figure 7, however, it can be observed that the grey shade of the path 712 of the cleaning device (which could be interpreted in that the path actually should be cleaner than the rest of the area) is darker than the rest of the area. This contradicts feature (f) and, thus, can not be used as a basis for disclosing this feature.

6. In conclusion, the application as originally filed does not provide a basis for the system being configured to establish a correspondence between the grade of shaded (or color-coded) key and the level of dirtiness of an area determined by a tracking movement of a wireless tag as defined in claim 1.

7. The proprietor argued that the heaviness of use of an area and the degree of dirtiness were synonymous. The deviation of the wording of claim 1 from that in paragraph 38 of the application as filed did not add new subject-matter.

8. Whereas there might be a relation between the frequency of use and the dirtiness of an area, both terms are not synonymous. As the opponent correctly pointed out (cf. opponent's reply to proprietor's statement of grounds, paragraph bridging pages 4 and 5) *it is possible for one person to cause an area to become dirty (e.g. by causing a spillage therein or walking through an area with muddy footwear), and for several people to pass through a room (for example with clean footwear) and for it to remain reasonably clean.* Hence, paragraph [0038] does not provide a basis for the feature (f), i.e. that a level of dirtiness or cleanliness is graphically represented such that the darker the area, the dirtier the area without any reference to the frequency of use.

9. For these reasons, the ground for opposition pursuant to Article 100(c) EPC prejudices the maintenance of the patent as granted.

Auxiliary request I: admissibility

10. Auxiliary request I was submitted during oral proceedings. Its admission into the proceedings is, therefore, by application of Articles 13(2) and 25 RPBA 2020, subject to the Board's discretion.

11. The proprietor argued that the newly filed request replaced a pending request and did, therefore, not adversely affect procedural economy. The amendments resolved the issues on added subject-matter.

12. Article 13(2) RPBA provides that amendments, in principle, shall not not be taken into account unless there are exceptional circumstances, which have been

justified with cogent reasons. In the case at hand, the issues on added subject-matter were relevant in the opposition proceedings and throughout the appeal proceedings (cf. Decision, Grounds for the Decision, section 3.5; Opponent's reply to the proprietor's statement of grounds, paragraph bridging pages 4 and 5). The proprietor had opportunities to address them by submitting amendments during the written procedure. The Board does not see any cogent reason why this request could only be filed at the oral proceedings.

13. For this reason, the Board, in exercising its discretion, does not admit auxiliary request I into the proceedings.

Auxiliary requests 1a and 2:

14. Claim 1 of auxiliary requests 1a and 2 has the same wording as claim 1 of the main request for feature (f) for which the main request was found to be unallowable. These requests are not allowable for the same reasons as the main request.

Conclusion

15. As there is no allowable request on which the patent can be maintained, the patent has to be revoked.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

D. Meyfarth T. Zinke

Decision electronically authenticated