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**Datasheet for the decision
of 14 January 2021**

Case Number: T 2576/18 - 3.5.01

Application Number: 13790120.3

Publication Number: 2850501

IPC: G06Q10/00, G05D23/19

Language of the proceedings: EN

Title of invention:
INFORMATION CONTROL SYSTEM

Applicant:
Chan, Hun Man Lena

Headword:
Controlling an environmental parameter/CHAN

Relevant legal provisions:
EPC Art. 56

Keyword:
Inventive step - deriving an undisclosed parameter from the prior art and moreover improving it - (yes, beyond the ambit of the skilled person)



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Case Number: T 2576/18 - 3.5.01

D E C I S I O N
of Technical Board of Appeal 3.5.01
of 14 January 2021

Appellant:
(Applicant)

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Decision under appeal:

**Decision of the Examining Division of the
European Patent Office posted on 6 March 2018
refusing European patent application No.
13790120.3 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman W. Chandler
Members: A. Wahrenberg
C. Schmidt

Summary of Facts and Submissions

- I. The appeal is against the decision of the examining division to refuse the European patent application No. 13790120.3 (published as WO 2013/170791 A1) for added subject-matter (Article 123(2) EPC), lack of clarity (Article 84 EPC), and lack of inventive step (Articles 52(1) and 56 EPC).
- II. With the statement setting out the grounds of appeal dated 13 July 2018, the appellant requested that the decision of the examining division be set aside and that a patent be granted on the basis of the main request or the first or second auxiliary request annexed thereto.
- III. With a letter dated 1 August 2019, the appellant requested accelerated appeal proceedings for the reason that at least two commercially available products falling within the scope of the claims had been identified, and the appellant needed the appeal case to be settled in order to effectively negotiate with the manufacturers of those products. On 20 February 2020, the Board informed the appellant by telephone that it had granted the request for acceleration.
- IV. Oral proceedings were scheduled to be held on 14 January 2021 by videoconference due to the coronavirus pandemic. In the communication accompanying the summons to oral proceedings, the Board tended to consider that the subject-matter claimed in the main and first auxiliary requests lacked an inventive step over D1, and that the subject-matter of claim 1 of the second auxiliary request extended beyond the content of

the application as filed and moreover lacked an inventive step over D2.

- V. In a letter dated 13 November 2020, the appellant submitted further arguments in support of the main and two auxiliary requests.
- VI. During the oral proceedings, the appellant withdrew the main request and the second auxiliary request so that the first auxiliary request became the new main request. The appellant's final requests were thus that the decision under appeal be set aside and that the patent be granted on the basis of the new main request, filed as first auxiliary request with the statement setting out the grounds of appeal dated 13 July 2018.
- VII. Claim 1 of new main request reads:

Apparatus for controlling an environmental attribute of a monitored space according to the geographic location of a mobile device in relation to said monitored space, comprising:

an application server having computing capability, which processes information received via a network, from a communicatively connected control station controlling an environmental attribute means, and which receives a geographic location or a proximity log pertaining to said present geographic location from said mobile device;

a control station for monitoring the level of an environmental attribute of said monitored space and sending a detected level of said environmental attribute to said application server, and for driving said environmental attribute of said monitored space

through controlling said environmental attribute means,
and

a mobile device adapted to send its present geographic location, or a proximity log pertaining to its present geographic location, to said application server,

in which said application server, or said control station, establishes and records a drive relationship in a communicatively connected memory, which describes the change of said environmental attribute pertaining to said monitored space with respect to time for being driven to a set point from an ambient level or from a farthest level relative to said set point, said set point representing a predetermined level of said environmental attribute in said monitored space, and,

in which said application server, or said control station, establishes and records a drift relationship in a communicatively connected memory, which describes the change of said environmental attribute in said monitored space with respect to time when drifting from said set point toward an ambient level or toward said farthest level relative to said set point,

in which said application server determines a setback point of said environmental attribute in accordance with said established drive relationship and drift relationship, by calculating a time of arrival of said mobile device at said monitored space on the basis of a present geographic location of said mobile device, wherein the present geographic location is sent to said application server from said mobile device, or is calculated on the basis of a proximity log sent to said application server from said mobile device,

in which said setback point is determined by said application server, or said control station, such that a setback recovery time period representing a length of time said environmental attribute in said monitored space takes to be driven from said setback point to said set point by said control station, through controlling said environmental attribute means in accordance with said established drive relationship, is equal to or less than a lead time period, between the present time and a calculated time of arrival of said mobile device at said monitored space,

in which said control station allows said environmental attribute in said monitored space to drift to said setback point, and drives said environmental attribute so it reaches said set point at said calculated time of arrival, and

in which said application server assigns the lead time period for said mobile device to arrive at said monitored space as one preconfigured value when said present geographic location of said mobile device is within a geofence area comprising said monitored space within thereof, and assigns the lead time period for said mobile device to arrive at said monitored space as another preconfigured value when said present geographic location of said mobile device is outside of said geofence area.

VIII. Claim 14 reads:

A method of controlling an environmental attribute of a monitored space according to the geographic location of a mobile device in relation to said monitored space, comprising:

monitoring the level of an environmental attribute of said monitored space using an environmental attribute means, and

sending a detected level of said environmental attribute to an application server via the network,

sending a present geographic location of said mobile device to said application server via the network,

establishing and recording a drive relationship which describes the change of said environmental attribute pertaining to said monitored space with respect to time for being driven to a set point from an ambient level or from a farthest level relative to said set point,

establishing and recording a drift relationship which describes the change of said environmental attribute in said monitored space with respect to time when drifting from said set point toward an ambient level or toward said farthest level relative to said set point,

determining a setback point of said environmental attribute in accordance with said established drive relationship and drift relationship, by calculating a time of arrival of said mobile device at said monitored space on the basis of a present geographic location or proximity log of said mobile device, wherein said setback point is determined such that a setback recovery time period representing a length of time that said environmental attribute in said monitored space takes to be driven from said setback point to said set point in accordance with said established drive relationship, is equal to or less than a lead time period, between the present time and said calculated time of arrival of said mobile device at said monitored space,

allowing said environmental attribute in said

monitored space to drift to said setback point, and driving said environmental attribute so it reaches said set point at said calculated time of arrival,

in which said application server assigns the lead time period for said mobile device to arrive at said monitored space as one preconfigured value when said present geographic location of said mobile device is within a geofence area comprising said monitored space within thereof, and assigns the lead time period for said mobile device to arrive at said monitored space as another preconfigured value when said present geographic location of said mobile device is outside of said geofence area.

Reasons for the Decision

1. *Background*

- 1.1 The invention concerns a system for controlling an environmental parameter, for example temperature, in a monitored space such as a hotel room (paragraph [2] of the published application).
- 1.2 The system allows the user to set a desired temperature called "set point" temperature (T_{set}). Maintaining the temperature at this level when the user is not present in the room is not energy efficient. However, if the set point temperature is simply set to an energy-saving level when the user leaves the room, the room temperature will not be at the desired level when the user returns (paragraph [3]).
- 1.3 The invention solves this problem by monitoring the geographical location of the user's mobile device so as

to estimate the user's time of arrival back at the hotel (paragraph [6]). A "setback point" (Tsb) is defined such that the amount of time required to drive the temperature from the setback point (Tsb) to the set point (Tset) is less than or equal to the time it takes for the user to get back (the "lead time period"). The claimed system controls the temperature so that it does not drift beyond the setback point (paragraph [7]).

1.4 In appeal, claim 1 was amended to specify that the lead time period is set to a preconfigured value depending on whether the mobile device is located inside or outside a geofence area. In other words, the lead time period is set to one predetermined value when the user is inside the geofence area and another value when the user is located outside the area (paragraph [34]).

2. *Added subject-matter (Article 123(2) EPC) and clarity (Article 84 EPC)*

2.1 The examining division had objections of added subject-matter and lack of clarity against the independent claims (1 and 17) and one dependent claim (claim 3). The Board is satisfied that the objections have been overcome by the amendments made on appeal, because the offending features have been deleted.

2.2 The subject-matter of the independent claims 1 and 14 finds a basis in Figures 1 and 4, and the associated passages of the description. The geofence area is disclosed e.g. in paragraphs [28], [33], and [34].

3. *Inventive step (Article 56 EPC)*

3.1 The examining division started from D1 as closest prior art. The Board considers D2 to be a better starting

point for inventive step, because, unlike D1, it discloses an actual embodiment of a heating control system that uses the idea of a lead time period (in the form of the estimated time of arrival - ETA) of the user to decide when to start heating the property, such that the temperature is brought up to the desired level before the user arrives (second paragraph on page 19).

D2 does not explain exactly how this is done but, apart from the building and heating system characteristics, it appears to be based on the current temperature of the property (page 18, last paragraph), although it seems that there is also a minimum temperature (page 13, last paragraph - "low threshold").

The ETA is calculated using mobile location data (third paragraph on page 19) as in the invention.

D2 furthermore mentions a "geofence". Since the heating system knows the maximum time it takes to heat the property to the required temperature, it can define a geofence outside of which it does not need to track the user (last paragraph on page 19). Again D2 does not define how the ETA is determined when the user is inside the geofence area.

3.2 Although the low threshold could be considered to be a "setback point" below which the temperature is not allowed to fall, D2 does not suggest varying this based on the lead time period. Rather, it is the geofence that is varied as a function of this time and the current temperature.

3.3 Moreover, D2 does not disclose the feature added in appeal that the lead time period, and thus the setback temperature, is assigned as one of two preconfigured

values depending on whether the user is inside or outside a geofence area. Thus the invention essentially differs from D2 by providing different setback points, instead of varying the geofence, depending on the user's position.

- 3.4 The Board agrees with the appellant that this feature would prevent unnecessary switching of the heating system when the user moves towards the monitored space but then moves away again - so called "hunting".
- 3.5 As mentioned above, D2 uses a geofence only to determine whether the user is near enough to make tracking worthwhile. It does not explain how the temperature is controlled in detail and certainly does not suggest the hunting problem. D2 also does not suggest varying a setback point. Although it might be argued that the skilled person would understand the general principle that some form of hysteresis leads to a smoother, albeit less adaptive, heating control, the Board sees no easy way to apply it to the system of D2 in order to arrive at the claimed invention. The skilled person would first have to consider controlling the system by means of a variable setback point and second, solve the problem of hunting in relation to it. In the Board's view, this would be beyond the ambit of the skilled person. In other words, the invention as defined in claim 1 would not have been obvious to the skilled person starting from D2.
- 3.6 For these reasons, the Board judges that the subject-matter of claim 1 involves an inventive step (Article 56 EPC). The same reasons are applicable also to independent claim 14.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the Examining Division with the order to grant a patent on the basis of the main request, filed as first auxiliary request with the statement setting out the grounds of appeal dated 13 July 2018, and a description to be adapted.

The Registrar:

The Chairman:



T. Buschek

W. Chandler

Decision electronically authenticated