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# Datasheet for the decision of 5 March 2025

**Case Number:** T 0436/23 - 3.5.05

**Application Number:** 13723701.2

**Publication Number:** 2992662

**IPC:** H04L67/12, G16H40/67

**Language of the proceedings:** EN

**Title of invention:**
Monitoring and displaying an absorption state of an absorbent article

**Patent Proprietor:**
Essity Hygiene and Health Aktiebolag

**Opponents:**
Henkel AG & Co. KGaA ("opponent 1")
Paul Hartmann AG ("opponent 2")

**Headword:**
Monitoring and displaying wetness events/ESSITY

**Relevant legal provisions:**
EPC Art. 54, 56, 100(a), 123(2)

**Keyword:**

Novelty - patent as granted and auxiliary requests 1 and 2 (no)
Inventive step - auxiliary requests 3 and 5 (no)
Added subject-matter - auxiliary requests 4 and 6 to 9 (yes)

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**Case Number: T 0436/23 - 3.5.05**

# D E C I S I O N
# of Technical Board of Appeal 3.5.05
# of 5 March 2025

| | |
|---|---|
| **Appellant I:** (Patent Proprietor) | Essity Hygiene and Health Aktiebolag<br>405 03 Göteborg (SE) |
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| **Representative:** | Henkel AG & Co. KGaA<br>CLI / Patente<br>40191 Düsseldorf (DE) |
| **Decision under appeal:** | **Interlocutory decision of the Opposition Division of the European Patent Office posted on 21 December 2022 concerning maintenance of the European Patent No. 2992662 in amended form.** |

**Composition of the Board:**

| | |
|---|---|
| **Chair** | K. Bengi-Akyürek |
| **Members:** | J. Eraso Helguera |
| | C. Heath |

## Summary of Facts and Submissions

I. This case concerns the appeals filed by the proprietor and opponent 2 against the opposition division's interlocutory decision to maintain the opposed patent as amended in accordance with an "auxiliary request 3" filed during the opposition proceedings.

II. The decision under appeal mentioned, *inter alia*, the following prior-art document:

**D4**: WO 2011/156862 A1.

III. Oral proceedings before the board were held on 5 March 2025. The final requests of the parties were as follows.

- As its **main request**, the proprietor requested that the appealed decision be set aside and that the oppositions be rejected. In the alternative, the patent was to be maintained in amended form on the basis of the claims of one of **auxiliary requests 1 to 9**, first filed during the opposition proceedings and re-filed with the statement of grounds of appeal.

- Opponent 2 requested that the appealed decision be set aside and that the patent be revoked.

At the end of the oral proceedings, the board's decision was announced.

IV. Claim 1 of the **patent as granted** reads as follows:

"A method of monitoring an absorption state of an absorbent article, the method comprising
providing a logger unit;
acquiring the absorption state of the absorbent article; and
recording data indicating the acquired absorption state of the absorbent article in the logger unit;
**characterised in that**
acquiring the absorption state of the absorbent article and recording the data indicating the acquired absorption state of the absorbent article in the logger unit are each continuously performed during a monitoring period of the absorbent article, and
the method further comprises determining whether data indicating the acquired absorption state of the absorbent article has been recorded in the logger unit throughout the entire monitoring period."

Claim 1 of **auxiliary request 1** differs from granted claim 1 in the following addition at the very end:

", further comprising establishing an absorption pattern on the basis of the data recorded in the logger unit".

Claim 1 of **auxiliary request 2** differs from claim 1 of auxiliary request 1 in the following addition at the very end:

"and quantifying the time period in which no recording of data was performed".

Claim 1 of **auxiliary request 3** differs from claim 1 of auxiliary request 1 in the following addition at the

very end:

", and quantifying the time period in which no recording of data was performed and assessing the quality of the data recorded in the logger unit on the basis of this information".

Claim 1 of **auxiliary request 4** differs from claim 1 of auxiliary request 3 in the following insertion right before the expression "on the basis of the data recorded":

", the absorption pattern indicating the time dependent absorption process in the absorbent article and the spatial distribution of absorbed liquid in the absorbent article,".

Claim 1 of **auxiliary request 5** differs from granted claim 1 in the following addition at the very end:

"and displaying the data recorded in the logger unit in continuous form".

Claim 1 of **auxiliary request 6** differs from claim 1 of auxiliary request 3 in the following insertion right after "throughout the entire monitoring period":

"and displaying the data recorded in the logger unit in continuous form,".

Claim 1 of **auxiliary request 7** differs from granted claim 1 in the following addition at the very end:

", wherein the method further comprises receiving sets of data indicating the absorption state of the absorbent article, wherein each of the sets of data

indicates the absorption state of the absorbent over a portion of a continuous period of time; and

collating the sets of data so as to obtain a single set of data indicating the absorption state of the absorbent article over the continuous period of time"

and the following insertion right before the phrase ", the method comprising":

"and processing data indicating said absorption state".

Claim 1 of **auxiliary request 8** differs from claim 1 of auxiliary request 7 in the following addition at the very end:

", further comprising establishing an absorption pattern, the absorption pattern indicating the time dependent absorption process in the absorbent article and the spatial distribution of absorbed liquid in the absorbent article, on the basis of the data recorded in the logger unit, and quantifying the time period in which no recording of data was performed and assessing the quality of the data recorded in the logger unit on the basis of this information".

Claim 1 of **auxiliary request 9** differs from claim 1 of auxiliary request 8 in the following insertion right before the phrase ", further comprising establishing":

"and displaying the single set of data in continuous form".

## Reasons for the Decision

1. MAIN REQUEST

*1.1 Claim 1 - novelty (Articles 100(a) and 54 EPC)*

1.1.1 The board endorses the opposition division's and the opponents' claim interpretation as well as their novelty analysis in view of document **D4**. Using the wording of granted claim 1, D4 discloses:

1.1 A method of monitoring an absorption state ("moisture") of an absorbent article, the method comprising
1.2 providing a logger unit ("wireless signal transmission device 35");
1.3 acquiring the absorption state of the absorbent article (page 4, lines 9 to 11: "analysis is carried out on information derived from sensors");
1.4 recording data indicating the acquired absorption state of the absorbent article in the logger unit (page 51, lines 7 to 17: "The wireless component transmits the sensors' data to a server which collects all the data from all in an aged care facility");
1.5 acquiring the absorption state of the absorbent article and recording the data indicating the acquired absorption state of the absorbent article in the logger unit are each continuously performed during a monitoring period ("pad cycle") of the absorbent article (see page 52, lines 18 to 27: "[...] for each pad cycle, raw sensor data along with the resident's weight, demographic information, food and fluid intake

information, time of the day, temperature and humidity of the environment and other factors are recorded."),

1.6 the method further comprises determining whether data indicating the acquired absorption state of the absorbent article has been recorded in the logger unit throughout the entire monitoring period (page 29, lines 27 to 29: "The process of smoothing the sensor signal may also involve interpolation of missing data resulting from an interruption of the sensor signal or because of some other reason.").

1.1.2 The proprietor submitted that **features 1.5 and 1.6** had been misinterpreted. Not only did D4 fail to disclose them combined with one another, but even taught away from them. The fact that D4 relied on smoothing showed that it did not impose continuity from the envisaged data acquisition. On the contrary, it taught to just interpolate in order to hide or ignore the "missing data". Thus, the process of smoothing described in the section "Smoothing the Sensor Signals" of D4 (see page 29, lines 18 to 31) involved "interpolation" only to the extent that the resulting "smoothened signal" would yield "interpolated" values also for missing data points, i.e. points for which no sensor data was available. There was no "missing data" in the process of smoothing. Rather, the existing data were fed into the smoothing algorithm. Hence, there was no need to record the sensors' data "continuously", let alone to determine whether such data had been recorded throughout the "entire monitoring period". And even if the teaching of D4 allowed other interpretations of the "interpolation", this could not amount to a direct and unambiguous disclosure.

1.1.3 These arguments are not convincing. The wording of the granted claim excludes neither continuous sampling during a monitoring period nor the interpolation of values in time intervals in which no data has been recorded. Moreover, the opposition division's and the opponents' claim interpretation is in line with the embodiments described in the granted patent (see paragraphs [0020] and [0047]). As to the interpretation of the section "Smoothing the Sensor Signals" of D4, "interpolation" requires an exact fit of the existing data points, whereas "curve-fitting" leads to approximate values even for those data points which are not missing (see e.g. Fig. 5 of D4). It follows that the only sensible interpretation of the "interpolation" mentioned in D4 is that it must take place beforehand, e.g. in order to fill gaps in the dataset on which the "smoothing" is subsequently performed. In addition, the *skilled* reader of the teaching of D4 would certainly be aware that, in order to interpolate "missing data resulting from an interruption of the sensor signal" (D4, page 29, lines 27-29), the underlying system must determine beforehand whether there were any interruptions in receiving and recording the respective wetness sensor signals and thus inevitably whether the sensor data has been recorded throughout the entire "pad cycle", in full accordance with the broad terms of features 1.5 and 1.6 of present claim 1.

1.2 Thus, the ground for opposition under Article 100(a) EPC in conjunction with Article 54 EPC prejudices the maintenance of the granted patent.

2. AUXILIARY REQUESTS

Claim 1 of each of the auxiliary requests differs from granted claim 1 in the following features:

1.7 establishing an absorption pattern on the basis of the data recorded in the logger unit [**auxiliary requests 1 to 4, 6, 8 and 9**],

1.8 quantifying the time period in which no recording of data was performed [**auxiliary requests 2 to 4, 6, 8 and 9**],

1.9 assessing the quality of the data recorded in the logger unit on the basis of this information [**auxiliary requests 3, 4, 6, 8 and 9**],

1.10 the absorption pattern indicates the time dependent absorption process in the absorbent article and the spatial distribution of absorbed liquid in the absorbent article [**auxiliary requests 4, 6, 8 and 9**],

1.11 displaying the data recorded in the logger unit in continuous form [**auxiliary request 5, 6 and 9**],

1.12 the method further comprises receiving sets of data indicating the absorption state of the absorbent article, each of the sets of data indicates the absorption state of the absorbent over a portion of a continuous period of time; collating the sets of data so as to obtain a single set of data indicating the absorption state of the absorbent article over the

continuous period of time [**auxiliary requests 7 to 9**].

*2.1 Auxiliary requests 1 and 2 - claim 1 - novelty (Article 54 EPC)*

2.1.1 According to the proprietor, document D4 did not disclose **feature 1.7**, either. The word "pattern" was to be understood to mean a "regularly repeated arrangement". Especially in the technical context of monitoring wetness events, it was clear that the word "pattern" pointed to the regularity and the repetition. However, in the case of D4, Figures 5 to 7 merely showed data points. It was not explicitly disclosed that these points formed a "pattern" and it was not explicitly disclosed that they were regular or that they showed any form of repetition. Nor did D4 disclose **feature 1.8**. The "quantification" of claim 1 of auxiliary request 2 was not an inevitable requirement for the interpolation of D4. There were actually two possibilities of how to become aware that data was missing. This could be established quantitatively (by quantifying how much data was missing, i.e. establishing the time period(s) (and adding them up, in as far as there were several) for which data was missing) or it could be qualitative (establishing that the recording of data was not continuous, i.e. just establishing that data was missing as such).

2.1.2 The board agrees with the opposition division and with the opponents that D4 already discloses features 1.7 and 1.8. The identification of an optimal mathematical model describing a relationship between the sensor signals and the observation data according to the teaching of D4 falls well within the broad scope of **feature 1.7**, since, as explained at page 6, lines 24 to

27 of D4:

> "[...] The characteristic associated with each event can be determined without requiring observation data in the form of the measured weight of each absorbent pad after an event or a sequence of events has occurred in the absorbent article [...]".

In that regard, it is also referred to the last sentence of paragraph [0128] of the patent itself:

> "In particular, the data presented in Fig. 6 allows for the wetting pattern of the wearer of the absorbent article 400 to be reliably established, so that both the changing times of the absorbent article 400 and the type of absorbent article to be used can be tailored to the wearer's characteristic behaviour, i.e., wetting or incontinence behaviour, and needs.".

2.1.3 As to **feature 1.8**, the board is satisfied that the "interpolation of missing data" of D4 necessarily requires some sort of quantification of the time period in which no recording of data was performed. At the very least, the method must identify for which periods of time there is indeed an interruption in the receipt and recording of the sensor data (see point 1.1.3 above).

2.2 It follows that none of **auxiliary requests 1 and 2** is allowable under Article 54 EPC.

*2.3 Auxiliary requests 3 and 5 - claim 1 - inventive step (Article 56 EPC)*

2.3.1 The proprietor submitted that displaying the data recorded in the claimed logger unit "in continuous form" (**feature 1.11**) and then assessing its "quality" (**feature 1.9**) further improved the reliability and accuracy of the monitoring process. For example, the carer could thus schedule the working day by predicting incontinence events on the basis of the data shown on the screen. The assessed "quality" provided additional information about the reliability of such predictions.

2.3.2 The board however agrees with opponent 2 that the sole realisation that interpolation is needed in D4 already gives an indication of the "quality" (whatever its definition) of the sensors' data. At any rate, claim 1 does not specify how the displayed data and the assessed quality are actually used. In fact, the carer could make subjective predictions and quality assessments on the basis of accessible data. Consequently, features 1.9 and 1.11 merely relate to presentation of information and are devoid of any technical contribution.

For the sake of argument, even if they did, the system of D4 may also include a computer monitor which communicates the characteristic of determined events in an absorbent article (see page 23, lines 14 to 16). Displaying the sensor data in continuous form and grading data quality in accordance with the amount of missing data would be both straightforward options for the skilled person seeking to "improve the reliability and accuracy of the monitoring process".

2.4 Thus, auxiliary requests 3 and 5 are not allowable under at least Article 56 EPC.

*2.5 Auxiliary requests 4 and 6 to 9 - claim 1 - added subject-matter (Article 123(2) EPC)*

2.5.1 The proprietor submitted that page 12, lines 26 to 30 of the original disclosure provided literal basis for **feature 1.10**. In particular, deleting the word "or" in the original sentence (board's emphasis):

> "The absorption pattern may be a time pattern, indicating the time dependent absorption process in the absorbent article, and/or a spatial pattern, indicating the spatial distribution of absorbed liquid in the absorbent"

immediately led to "one pattern" in accordance with the claimed wording.

2.5.2 The board however agrees with opponent 2 that page 12, lines 26 to 30 of the application as filed specifies that the "absorption pattern" may be a "time pattern" "and/or" a "spatial pattern", i.e. two separate patterns, one considering repetitions in time, i.e. how much wetness *when*, and the other repetitions in the spatial distribution of absorbed liquid, i.e. how much wetness *where*. Feature 1.10 unduly extends this original disclosure to the extent it encompasses a single "pattern" established on the basis of both time and space considerations, i.e. how much wetness *when* and *where* throughout the "entire monitoring period".

2.5.3 As to **feature 1.12**, the proprietor submitted that receiving and collating the sets of data could be done anywhere, even at the "logger unit". The original

application thus provided basis for a method combining all the steps of "acquiring the absorption state" and "recording data" with the steps of "receiving sets of data" and "collating the sets of data".

2.5.4 The board is not convinced. Those steps belong to distinct original method claims (cf. claim 1 vs. claim 17). In the application as filed, "acquiring the absorption state" and "recording data" are steps associated with the "data logger", whereas the steps of "receiving sets of data" and "collating the sets of data" are carried out by the "data processing unit" - rather than by the "logger unit". By combining all those steps without further specifying which unit should perform each of those steps, the proprietor has added technical information which was not present in the application as filed.

2.6 Hence, none of auxiliary requests 4 and 6 to 9 is allowable under Article 123(2) EPC.

3. Since there is no allowable claim request on file, the patent must 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 Chair:

B. Brückner K. Bengi-Akyürek

Decision electronically authenticated