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Datasheet for the decision of 8 December 2022

Case Number: T 1137/19 - 3.4.02

Application Number: 12809686.4

Publication Number: 2791668

IPC: G01N33/00, H02B13/065

Language of the proceedings: EN

Title of invention:
METHOD FOR OPERATING AN ELECTRICAL APPARATUS

Patent Proprietor:
Hitachi Energy Switzerland AG

Opponent:
Siemens Aktiengesellschaft

Relevant legal provisions:
EPC Art. 54(1), 56, 100(a)
RPBA 2020 Art. 13(2)

Keyword:
Novelty and inventive step (yes)
Late-filed objection - circumstances of appeal case justify admittance (no)

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Case Number: T 1137/19 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 8 December 2022

Appellant: (Opponent)	Siemens Aktiengesellschaft Werner-von-Siemens-Straße 1 80333 München (DE)
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Representative:	Epping - Hermann - Fischer Patentanwaltsgesellschaft mbH Postfach 20 07 34 80007 München (DE)
Decision under appeal:	**Decision of the Opposition Division of the European Patent Office posted on 1 February 2019 rejecting the opposition filed against European patent No. 2791668 pursuant to Article 101(2) EPC.**

Composition of the Board:

Chairman	R. Bekkering
Members:	F. J. Narganes-Quijano
	T. Karamanli

Summary of Facts and Submissions

I. The appellant (opponent) lodged an appeal against the decision of the opposition division rejecting the opposition against the European patent No. 2791668.

The opposition filed by the appellant against the patent as a whole was based on the grounds for opposition of insufficiency of disclosure (Article 100(b) EPC) and lack of novelty and of inventive step (Article 100(a) together with Articles 52(1), 54 and 56 EPC).

II. The following documents considered during the first-instance opposition proceedings were referred to by the parties during the appeal proceedings:

E2: CN 101968459 A, together with a computer-generated translation of the claims (document E2a) and of the description (document E2b)
E4: US 2002/0095262 A1
E5: EP 0 637 114 A1
E6: WO 2010/086024 A1
E7: "A Development and Application of Circuit Breakers Diagnostic and Monitoring", J A Dewulf *et al.*; Transmission and Distribution Conference and Exposition, IEEE PES, Vol. 2 (2003); pages 774 to 779
E8: "Design Objectives of New Digital Control and Monitoring of High Voltage Circuit Breakers", J P Dupraz *et al.*; Transmission and Distribution Conference and Exposition, IEEE PES, Vol. 2 (2001); pages 1088 to 1093.

III. In its decision the opposition division held that neither the ground for opposition under Article 100(b) EPC nor the grounds for opposition under Article 100(a) together with Articles 52(1), 54(1) and 56 EPC prejudiced the maintenance of the patent as granted. More particularly, the opposition division held that the subject-matter of the claims of the patent as granted was new over documents E2 and E7/E8 and involved an inventive step over document E7/E8 as closest prior art in combination with document E4, and also over each of documents E5 and E6 as closest prior art.

IV. Oral proceedings before the board were held on 8 December 2022.

The appellant requested that the decision under appeal be set aside and the patent be revoked.

The respondent (patent proprietor) requested that the appeal be dismissed (main request) or that the decision under appeal be set aside and the patent be maintained as amended on the basis of the claims of one of auxiliary requests 1 to 5, all filed with the reply dated 11 October 2019.

At the end of the oral proceedings the chairman announced the decision of the board.

V. Claim 1 as granted (main request) - with the feature labelling [M1] to [M4], [M5a], [M5b], and [M6] to [M8] used during the proceedings being inserted therein by the board - reads as follows:

" *[M1]* A method for operating a fluid-insulated electrical apparatus (1), in particular gas-insulated

medium or high voltage switchgear, *[M2]* wherein an insulation fluid (10) of the electrical apparatus (1) comprises at least a first component (A) and a second component (B), the method comprising the method elements of:

- *[M3]* determining a physical state of the insulation fluid (10) by measuring at least three measurement variables (p, p [*sic*], T, λ, η, c_s) by means of at least one sensor (30), wherein the measurement variables (p, p, T, λ, η, c_s) are indicative of the physical state of the insulation fluid (10) and *[M4]* wherein the measurement variables (p, p, T, λ, η, c_s) are selected such that at least two characterizing variables indicative of partial pressures (p_A, p_B) or concentrations (c_A, c_B) of the first component (A) and the second component (B) of the insulation fluid (10) can be determined using the measurement variables (p, p, T, λ, η, c_s),

- *[M5a]* wherein the method comprises a further method element (i) of: deriving at least one trend variable for at least one of the measurement variables (p, p, T, λ, η, c_s), wherein the at least one trend variable is indicative of a change over time of the at least one measurement variable (p, p, T, λ, η, c_s); *[M5b]* and/or a further method element (ii) of: deriving from at least one of the measurement variables (p, p, T, λ, η, c_s) at least one of the characterizing variables, wherein the at least one of the characterizing variables is indicative of the physical state of the insulation fluid (10), and deriving at least one trend variable for the at least one of the characterizing variables, wherein the trend variable is indicative of a change over time of the at least one of the characterizing variables;

[M6] wherein at least two trend variables are derived for the at least two characterizing variables

indicative of the partial pressures (p_A, p_B) or concentrations (c_A, c_B) of the first and second components (A, B) of the insulation fluid (10), *[M7]* and wherein the at least two characterizing variables are selected from the group consisting of: a function f1(p_A), a function f2(p_A/T), a function f3(p_B), a function f4(p_B/T), a function f5(p_A, p_B), a function f6(p_A, p_B, T), a function f7(p_A/p_B), a function f8(c_A), a function f9(c_B), a function f10(c_A, c_B), and a function f11 (c_A/c_B),

with p_A and p_B being the partial pressures of the first and second components (A, B) of the insulation fluid (10), with c_A and c_B being the concentrations of the first and second components (A, B) of the insulation fluid (10), and with T being a temperature T of the insulation fluid (10);

[M8] wherein further the method comprises a method element of:

determining, using the at least one trend variable for the at least one of the characterizing variables, an operating state (O, F1) of the electrical apparatus (1) out of a group of at least two possible operating states (0, F1)."

The patent as granted also includes dependent claims 2 to 23 directed to particular embodiments of the method of claim 1, claim 24 directed to a fluid-insulated electrical apparatus comprising a control and analysis unit adapted to carry out the method of claim 1, dependent claims 25 and 26 directed to particular embodiments of the apparatus of claim 24, and claim 27 directed to a computer program element for implementing the method of claim 1.

Reasons for the Decision

1. The appeal is admissible.

2. *Main request (patent as granted) - Ground for opposition of lack of novelty (Article 100(a) together with Article 54(1) EPC)*

2.1 Claim 1 - Document E2

2.1.1 The opposition division held in its decision that the method of claim 1 differed from the method of document E2 at least in that this document did not disclose the derivation of a "trend variable" as claimed (see features M5a and M5b). The opposition division noted in this respect that the trend variables for a measurement variable and for a characterizing variable were defined in claim 1 as being "indicative of a change over time" of the corresponding measurement or characterizing variable and that, therefore, the trend variables could not correspond to the recorded or listed measurement or characterizing variable, but indicated at every point in time the direction of change ("trend") and change over time of the corresponding measurement or characterizing variable. The opposition division also referred in this respect to paragraphs [0013] to [0015] of the description of the patent specification, and in particular to paragraph [0013] according to which the trend variable "can be a time derivative of the measurement variable or it can be indicative of an absolute or relative change of the measurement variable over a given temporal interval, i.e. between a first and a second time".

2.1.2 The appellant essentially submitted that, in view of the use of Wheatstone bridges (document E2, Fig. 3, together with E2b, page 3, seventh paragraph), in document E2 the measured variables were, contrary to the opposition division's view, not displayed as such, but after being processed through an electrical balancing process (document E2, adjustable resistors R7 and R8 in Fig. 3, together with E2b, page 4, first to fourth paragraphs, page 7, steps D and E, page 8, steps H to J, and page 15, second paragraph, last sentence). The displayed values were therefore not the actual measured values, but the values balanced with respect to a reference value, and when the physical state of the system changed the actual measured values relative to the corresponding reference value (i.e. the unbalanced voltages) were then displayed. The displayed values could be positive or negative and were displayed as a function of time (document E2 together with E2b, page 3, last paragraph, and page 4, first paragraph), and they represented the temporal trend in the change of the measured values with respect to the reference value (document E2 together with E2b, page 7, step E) and, therefore, trend variables as claimed in accordance with the opposition division's interpretation of the trend variables. The mentioned trend was then used to detect a fault state of the system (document E2 together with E2b, page 8, steps H and J and fifth paragraph, and page 15, second and third paragraphs). Therefore, document E2 disclosed steps M5a/M5b and M6 and also step M8 of claim 1.

2.1.3 The board notes that the values displayed in document E2 correspond to the values measured by the sensors and processed by the balanced Wheatstone bridges of the circuit represented in Fig. 3 of document E2, so that the values being displayed correspond to the measured

values relative to the reference value determined by the corresponding balanced Wheatstone bridge. Consequently, the displayed values constitute only a representation of the measured values themselves with respect to a reference value, and although a "change trend" is - as explicitly mentioned in document E2b, page 7, step E - "reflected" by the change of the displayed values and the user can observe a trend in the time series of displayed values, the displayed values themselves do - as submitted by the respondent - not constitute a "trend variable [...] indicative of a change over time" of the respective measurement variable within the technical meaning of this claimed expression (*cf.* point 2.1.1 above). More particularly, the displayed values do not constitute a "variable" which indicates itself at every point in time the direction of change and the change over time of the variable being measured - in the same way as, for instance, the trajectory of a body with respect to a reference system represents the position over time of the body and contains information on the "trend" in the movement of the body, but the trajectory itself does not constitute a variable "indicative of the change over time" of the position of the body, i.e. it does not constitute a trend variable such as the velocity of the body.

2.1.4 During the oral proceedings the appellant submitted that paragraphs [0013] to [0015] of the description of the patent specification contained different methods of derivation of the trend variable and that one of them related to the variable being "indicative of an absolute or relative change of the measurement variable over a given temporal interval, i.e. between a first and a second time" (paragraph [0013], second sentence), so that the definition of the concept of "trend

variable" encompassed the values displayed in document E2 with respect to a reference value.

This argument, however, is based on an interpretation of the "change of the measurement variable over a given temporal interval, i.e. between a first and a second time" mentioned in paragraph [0013] of the patent specification as referring to a common "first time" for all the given temporal intervals to be considered in the definition of the trend variable, the common first time constituting then a reference value for all the temporal intervals. In the board's view, however, this specific interpretation is neither supported by the mentioned statement in paragraph [0013], nor consistent with the remaining statements in paragraphs [0013] to [0015] relating to the definition and to the methods of derivation of the trend variable.

2.1.5 In view of these considerations, the board is of the opinion that the method defined in claim 1 is new over the disclosure of document E2 at least in the claimed derivation of at least one trend variable for at least one of the measurement values (feature M5a) and/or for at least one of the characterizing variables (feature M5b).

2.2 Claim 1 - Documents E7 and E8

2.2.1 While document E7 contains a description of the system CBWatch-2, document E8 contains a description of the systems CBWatch-1 (E8, Section "A" on pages 1089 and 1090) and CBWatch-2 (E8, section "B" on pages 1090 and 1091). In its decision the opposition division considered these two documents ("E7/E8") as a whole, but referred exclusively to the content of document E8 relating to the system CBWatch-1. In view of these

considerations, the board considers it appropriate to refer separately to each of documents E7 and E8.

2.2.2 In its decision the opposition division held that the method of claim 1 differed from the method disclosed in document E8 in the claimed features M3 and M6. In particular, the opposition division expressed the view that in document E8 only two variables (temperature and pressure), and not at least three variables as required by feature M3, were measured, and that the skilled person would consider that the overall density was to be calculated from the measured values of temperature and pressure, and that the gas mix was to be monitored on the basis of the Beattie and Bridgeman algorithm mentioned in document E8 (page 1089, right column, point 1, first paragraph) and disclosed in more detail in document E4 (paragraphs [0017] and [0018]).

2.2.3 The appellant submitted that document E8 disclosed monitoring a single gas according to the density calculated as a function of the measured values of pressure and temperature, but also that a mixture of two gases (SF6 and N2), and in particular the ratio of the two gas components, could be monitored (see page 1089, right column, point 1, last paragraph, and page 1090, left column, first sentence). In addition, the determination of the ratio of the two gas components mathematically required the determination of three independent parameters, and document E8 disclosed the use of the measured values of pressure and temperature and suggested, in addition, the use of the density as a third parameter (Fig. 4 on page 1090). Furthermore, document E4 referred to by the opposition division disclosed that the determination of the ratio of the two gas components using the Beattie and Bridgeman equations required the measurement of pressure and

temperature and also of density (paragraphs [0015] to [0018]) and, contrary to the opposition division's view, document E4 did not disclose the determination of density as a function of the temperature and pressure. Therefore, document E8 disclosed for a gas mixture the measurement of three measurement variables (feature M3 of claim 1), and the derivation of two trend variables constituted by the total pressure and by the relative proportions of the two gas components (feature M6 of claim 1).

The board notes that document E8 discloses the measurement of temperature and pressure (page 1089, left column, last paragraph, lines 4 to 7), but not of the density. In particular, document E8 mainly deals - as submitted by the respondent - with pure SF6 gas and it is only in this context (see page 1089, right column, point 1, first paragraph) that document E8 refers to the calculation - and not to the measurement - of the SF6 density by the Beattie and Bridgeman algorithm (i.e. an equation which in the case of one single gas takes a simplified form when compared with the corresponding equations shown in document E4, paragraphs [0018] and [0019], valid for a gas consisting of a mixture of gas components). In addition, document E8 also refers to the capability of the CBWatch-1 system to monitor a mixture of gases, and in particular a gas mix of SF6 and N2 (page 1089, right column, point 1, last paragraph, and page 1090, left column, first and penultimate sentences), but the document is silent as to how the mixture of gases is then to be monitored. In any case, there is no direct and unambiguous disclosure in document E8 of the density of the gas being measured, not at least in the specific case of the gas being constituted by a gas mixture.

It follows that the disclosure of document E8 relating to monitoring the mixture of SF6 and N2 is incomplete. In addition, the appellant's submissions that the skilled person trying to implement the mentioned disclosure would consider the application of the Beattie and Bridgeman equations valid in the case of a gas mixture (document E4, paragraphs [0015] to [0023]) and that these equations required the measurement of the density, so that the skilled person would consider the measurement of the density, are not supported by the disclosure of document E8 and, in any case, they go beyond the assessment of novelty. Therefore, independently of whether the incomplete disclosure of document E8 relating to the mixture of SF6 and N2 constitutes, as submitted by the respondent, a non-enabling disclosure, or constitutes an enabling disclosure in the sense that the skilled person would be in a position, using the common general knowledge in the field and without undue burden, to carry out the mentioned disclosure by some means not necessarily consisting of the approach submitted by the appellant, the claimed measurement of a third measurement variable (feature M3) is not directly and unambiguously derivable from the content of document E8.

2.2.4 During the oral proceedings before the board, the appellant referred to the penultimate sentence on page 1089, right column, of document E8 according to which "[t]he power consumption [...] can measure the density of the gas from 0 to 144 psi [...]", and submitted that this measurement of the density constituted a third measurement as required by the claimed method.

However, document E8 expressly mentions, as submitted by the respondent, that the apparatus CBWatch-1

"calculates the SF_6 density by the Beattie and Bridgeman algorithm" (page 1089, right column, first paragraph), and in this technical context the skilled person would understand the sentence "[t]he power consumption [...] can measure the density of the gas" cited by the appellant not in the sense that the density is directly measured, but only in the sense that it is determined as a function of the two measurements of temperature and pressure carried out by the apparatus.

2.2.5 The appellant also submitted that according to the picture shown in Fig. 4 of document E8 the apparatus comprised two different pressure/density sensor types, and in any case three distinct sensors which imply three different measurements.

However, Fig. 4 of document E8 shows a detection arrangement constituted by two components coupled to a common module and a third component, and neither Fig. 4, nor the reference in the figure to "Density monitor for mix SF6/Nitrogen", nor the remaining disclosure of the document disclose in a direct and unambiguous way that three different measurement variables as claimed, i.e. three measurement variables indicative of the physical state of the fluid, are being measured, let alone that two different pressure/ density sensor types are used or that the density is actually measured and not calculated as explicitly mentioned in the passage on page 1089, right column, first paragraph (*cf.* point 2.2.4 above).

2.2.6 For these reasons, the board is of the opinion that the method of claim 1 differs from document E8 at least in the claimed feature relating to the measurement of at

least three measurement variables as claimed (feature M3).

2.2.7 The appellant did not submit arguments in respect of document E7 and in the board's view the same conclusion in point 2.2.6 above also applies in respect of document E7.

2.2.8 For the above reasons, the board is of the opinion that the method of claim 1 is new over each of documents E7 and E8.

2.3 Claim 1 - Document E5

2.3.1 Document E5 discloses a high voltage transmission switching apparatus operating with a mixture of two gas components, i.e. SF6 and Nitrogen, (claim 1 and page 3, lines 19 to 21). Document E5 discloses the measurement of two measurement variables, i.e. temperature and pressure, by means of a respective sensor (claim 1), and the calculation of the density as a function of the measured values of temperature and pressure (E5, page 3, lines 24 and 25). Therefore, document E5 does not disclose the measurement of at least three measurement variables as claimed (feature M3).

Furthermore, there is no disclosure in document E5 of partial pressures or concentrations, and the two measurement variables, i.e. temperature and pressure, are used in document E5 to calculate the total density as a characterizing variable of the system, but they are not sufficient to determine at least two characterizing variables indicative of partial pressures or concentrations of the two gas components as required by claim 1 (feature M4).

2.3.2 In document E5 the signal of the value of the calculated density is expressed as a percentage of a reference density value (claim 2), or is periodically generated (claim 9), or is periodically processed into a time-averaged density value (claim 14), and an alarm is triggered on the basis of a comparison of the density value with a threshold (claim 13). According to the appellant each of these values obtained from the calculated value of the density constituted a trend variable as claimed, and the alarm was triggered as a function of this trend variable.

However, in the board's view none of the values defined in claims 2, 9 and 14 of document E5 constitutes a trend variable as claimed for reasons analogous to those already set forth in point 2.1.3 above, and there is no disclosure in document E5 of the derivation of trend variables as defined in claim 1 (features M5a and/or M5b, and M6 and M7).

As a consequence, there is also no disclosure of the use of a trend variable for determining an operating state of the system as claimed (feature M8).

2.3.3 Therefore, the method of claim 1 differs from the method disclosed in document E5 at least in features M3, M4, M5a and/or M5b, M6, M7 and M8.

2.4 Document E6

2.4.1 Document E6 discloses the determination of the fill quantity of a gas in an isolation chamber or switchgear (title and page 12, third paragraph from the bottom) according to the density of the gas determined on the basis of the measured values of two measurement variables, namely pressure and temperature (claim 11,

and page 13, second paragraph). In addition, the document mentions monitoring alarms (page 8, lines 3 to 5).

However, there is no disclosure in document E6 that the determination of the fill quantity of the gas involves the derivation of trend variables as claimed for reasons analogous to those set forth in point 2.3.2 above, second paragraph, in respect of document E5.

2.4.2 Therefore, the method of claim 1 differs from the method disclosed in document E6 at least in features M5a and/or M5b, M6 and M8.

2.5 The remaining documents considered during the proceedings are less pertinent for the issue of novelty.

2.6 In view of the above considerations, the board concludes that the method of claim 1 as granted, and therefore also the method of dependent claims 2 to 23 and the subject-matter of claims 24 and 27 as granted which refer back to the method of claim 1, is new over the documents of the prior art considered during the proceedings (Article 52(1) and 54(1) EPC).

3. *Main request (patent as granted) - Ground for opposition of lack of inventive step (Article 100(a) together with Article 56 EPC)*

3.1 Claim 1 - Document E5 as closest prior art

3.1.1 The appellant submitted that the method of claim 1 was obvious in view of document E5 and the common general knowledge, and also in view of document E5 in combination with document E4.

3.1.2 The appellant formulated the objective technical problem solved by the distinguishing features identified in point 2.3 above in terms of improving the monitoring of the system of document E5 by means of an analysis of a plurality of parameters. This formulation, however, already contains elements of the claimed solution, i.e. the consideration of the analysis of a plurality of different (measurement and/or characterizing and/or trend) variables, and for this reason the board cannot follow the appellant's formulation of the objective technical problem.

In the board's view the objective technical problem resides, as submitted by the respondent, in improving the method of operation of the apparatus, wherein operating states can be distinguished from each other (*cf.* paragraph [0009] of the patent specification).

3.1.3 The appellant essentially submitted that for the skilled person features M3, M4 and M6 of claim 1 as granted were already functionally disclosed in document E5, with the only difference that claim 1 required at least two trend variables. However, claim 1 only required the use of "at least one" trend variable for the determination of the operating state of the system (feature M8) and the derivation of one trend variable required only two measurement variables. Therefore, the further measurement variables and the further trend variable derived therefrom required by the claimed method had no technical function and, therefore, they did not technically contribute to the claimed method, with the consequence that these distinguishing features were irrelevant for, and did not contribute to, inventive step.

However, in the board's view the density values generated according to each of claims 2, 9 and 14 of document E5 are indicative of the density of the gas mixture which generally varies with time but, as already concluded in point 2.3.2 above, none of these density values represent a trend variable as claimed. Already for this reason - and independently of the question of whether, beyond the "at least one trend variable" referred to in feature M8, the remaining measurement and/or characterizing and/or trend variables required by the claimed method contribute to inventive step of the claimed method -, the appellant's arguments that the claimed method would not involve an inventive step over document E5 are not persuasive.

3.1.4 The appellant also submitted that the claimed method would be obvious over document E5 in view of the disclosure of document E4 relating to a gas-insulated electrical switchgear in which a gas mixture of two components is monitored in terms of the relative proportions of the gas components determined from the measured values of three variables, namely pressure, temperature and density (paragraphs [0004], [0005], [0015], [0023] and [0024]).

However, in document E4 the gas mixture is - as submitted by the respondent - directly monitored according to the relative proportions of the components of the mixture, and in particular according to the ratio between the partial pressures of the gas components determined using the Beattie and Bridgeman equations on the basis of the measured values of the pressure, the temperature and the density of the gas mixture (paragraphs [0017] to [0023]), and document E4 does not disclose the derivation of trend variables as claimed for reasons analogous to those already set

forth in point 2.1.3 above, let alone trend variables for the partial pressures or concentrations as required by the claimed method. In particular, the appellant's argument that a trend can be obtained by a comparison of the actual value of a parameter with an average value of the parameter as specified in paragraph [0015] of the patent specification does not convince the board because, first, a mere comparison with an average value does not constitute a trend variable as defined in claim 1 and, second, the comparison defined in paragraph [0015] of the patent specification ("The trend variable(s) can [...] be derived by comparing a current value or set of values of the respective variable(s) with a running average of the respective variable(s)") relates specifically to a "running average" and there is no evidence of common general knowledge in this technical field relating to the comparison of the value of a variable parameter with a running average.

Therefore, assuming that the skilled person would have considered the application of the monitoring process disclosed in document E4 to the method of document E5 in order to solve the objective technical problem, the board does not see how the skilled person would have arrived at the claimed method and, in particular, at features M5a and/or M5b, M6 and M8.

3.1.5 For these reasons, the board is of the opinion that the method of claim 1 as granted does not result in an obvious way from document E5, taking into consideration the common general knowledge, or from the combination of document E5 with document E4.

3.2 Claim 1 - Document E6 as closest prior art

3.2.1 The appellant submitted that the method of claim 1 would be obvious over document E6 and the common general knowledge, and also over document E6 in combination with document E4, for the same reasons as those submitted in respect of document E5.

3.2.2 As already noted in point 2.4 above, document E6 does not disclose the derivation of trend variables as claimed. For these reasons, neither document E6 under consideration of the common general knowledge, nor the combination of document E6 with document E4 would result in a method as claimed for reasons analogous to those given in points 3.1.2 to 3.1.4 above in respect of document E5 in combination with the common general knowledge and in respect of document E5 in combination with document E4.

3.2.3 During the oral proceedings the appellant referred to the statement on page 1, last paragraph, lines 1 to 4 from the bottom, of document E6 relating to the determination of a trend after a measurement of 21 days and the comparison of the trend slope with a maximum allowable leak. This statement, however, does not pertain to the method disclosed in document E6 or to the common general knowledge, but to the specific disclosure of a document of the prior art acknowledged in the introductory section of document D6 and, in addition, the statement refers to the determination of a single global trend value in a predetermined period of time (i.e. 21 days), and not to the determination of a trend variable as claimed.

3.2.4 For these reasons, the board is of the opinion that the method of claim 1 as granted does not result in an obvious way from document E6 under consideration of the

common general knowledge, or from the combination of document E6 with document E4.

3.3 Claim 1 - Objection of lack of inventive step based on document E8 as closest prior art - Admittance

3.3.1 During the oral proceedings the appellant submitted for the first time during the appeal proceedings that the method of claim 1 as granted did not involve an inventive step over document E8 in combination with document E6 and the common general knowledge. The appellant stated that this objection was raised in response to the view expressed by the board during the oral proceedings that the claimed method was new over document E8, and that it had not previously raised an objection of lack of inventive step based on document E8 as closest prior art during the appeal proceedings in order not to weaken its position on the objection of lack of novelty over document E8.

The respondent submitted that the appellant's objection based on document E8 as closest prior art, and more particularly based on the specific combination of document E8 with document E6, had not been previously raised during the appeal proceedings, and that this objection should not be admitted into the appeal proceedings under Article 13(2) RPBA 2020.

3.3.2 The appellant's objection of lack of inventive step on the basis of document E8 as closest prior art was raised for the first time during the oral proceedings before the board and therefore constitutes an amendment to the appellant's case within the meaning of Article 13(2) RPBA 2020 (which, in accordance with Article 25 RPBA 2020, applies in the present case). According to this provision, the mentioned amendment "shall, in

principle, not be taken into account unless there are exceptional circumstances, which have been justified with cogent reasons" by the appellant.

The board first notes the following: The issues of novelty and of inventive step of the method of claim 1 over document E8 were addressed during the first-instance proceedings. The opposition division held in its decision that the claimed method was new over document E8 and involved an inventive step over document E8 as closest prior art in combination with document E4. The appellant contested in the statement of grounds of appeal that the claimed method was new over document E8, but did not raise any objection of lack of inventive step on the basis of document E8 as closest prior art. In its reply to the statement of grounds of appeal, the respondent contested the appellant's view that the claimed method was new over document E8 and also referred to the opposition division's finding that the claimed method involved an inventive step over document E8. In the communication under Article 15(1) RPBA 2020 annexed to the summons to oral proceedings, the board expressed the preliminary view that the claimed method was new over document E8, and the board's preliminary opinion was exclusively based on earlier submissions.

In these circumstances, the board considers that the conclusion it reached during the oral proceedings that the claimed method was new over document E8 was exclusively based on the parties' submissions in the statement of grounds of appeal and the reply and on the parties' arguments put forward at the oral proceedings. In particular, the appellant did not indicate any aspect that might have been new or surprising to it, but only relied on the board's conclusion at the oral

proceedings on the question of novelty in view of document E8. However, the board's conclusion based exclusively on earlier submissions made by the parties cannot be regarded as an exceptional circumstance within the meaning of Article 13(2) RPBA 2020.

In addition, the board considers that the appellant's submission that it had been convinced that the claimed method was not new over document E8 and subsequently refrained from raising the objection of lack of inventive step on the basis of document E8 as closest prior art in the appeal proceedings before the oral proceedings in order not to risk weakening its position on the issue of novelty does not constitute a cogent reason justifying exceptional circumstances within the meaning of Article 13(2) RPBA 2020. According to Article 12(3), first sentence, RPBA 2020 (largely corresponding to Article 12(2), first sentence, RPBA 2007), each party to appeal proceedings has to present its complete appeal case at the outset of the appeal proceedings. Therefore, the appellant should have raised its objection of lack of inventive step based on document E8 as the closest prior art in its statement of grounds of appeal and it should not have waited for the board to confront it with a negative conclusion on the appellant's objection of lack of novelty over document E8 at the oral proceedings.

In view of these considerations, the board exercised its discretion under Article 13(2) RPBA 2020 and decided not to take into account in the appeal proceedings the new objection of lack of inventive step based on document E8 in combination with document E6 and the common general knowledge.

3.4 In view of the foregoing, the board concludes that the method of claim 1 as granted, and therefore also the method of dependent claims 2 to 23 and the subject-matter of claims 24 to 27 as granted which refer back to the method of claim 1, involve an inventive step (Article 56 EPC).

4. *Main request (patent as granted) - Ground for opposition of insufficiency of disclosure (Article 100(b) EPC)*

In its decision the opposition division held that the ground for opposition under Article 100(b) EPC did not prejudice the maintenance of the patent as granted. During the appeal proceedings the appellant did not contest the opposition division's finding in this respect, and the board has no reason for taking a different stance.

5. The board concludes that none of the grounds for opposition raised by the appellant prejudices the maintenance of the patent as granted. Consequently, the decision of the opposition division to reject the opposition under Article 101(2), second sentence, EPC is to be upheld. Therefore, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

L. Gabor R. Bekkering

Decision electronically authenticated