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**Datasheet for the decision  
of 27 January 2010**

**Case Number:** T 1186/06 - 3.3.07

**Application Number:** 94901465.8

**Publication Number:** 0668793

**IPC:** B01D 61/32

**Language of the proceedings:** EN

**Title of invention:**  
Apparatus for kidney dialysis

**Patentee:**  
Baxter International Inc.

**Opponents:**  
B. Braun Melsungen AG  
Fresenius Medical Care Deutschland GmbH

**Headword:**  
Dialysis/BAXTER

**Relevant legal provisions:**

-

**Relevant legal provisions (EPC 1973):**  
EPC Art. 56, 84

**Keyword:**  
"Request withdrawn before the opposition division and re-introduced before the Board (not admitted)"  
"Clarity (no)"  
"Inventive step (no)"

**Decisions cited:**  
T 0528/93, T 0838/02, T 0474/04

**Catchword:**

-



Case Number: T 1186/06 - 3.3.07

**DECISION**  
of the Technical Board of Appeal 3.3.07  
of 27 January 2010

**Appellant:** Baxter International Inc.  
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**Decision under appeal:** Decision of the Opposition Division of the  
European Patent Office posted 14 June 2006  
revoking European patent No. 0668793 pursuant  
to Article 102(1) EPC 1973.

**Composition of the Board:**

**Chairman:** S. Perryman  
**Members:** S. Wibergh  
D. Semino  
B. ter Laan  
H. Preglau

## Summary of Facts and Submissions

I. The present appeal by the patent proprietor is against the decision of the opposition division dated 14 June 2006 to revoke European patent No. 0668793.

II. The following documents will be referred to:

D8: US-A-4 898 578

D12: "CMS 08 - HANDBUCH", published by Fresenius AG, 4th edition 1988

D13': W. Friesdorf et al. (editors), "Ergonomie in der Intensivmedizin", 1990, pp. 115-124

D13: pp. 120-122 of D13'

*[D13 and D13', excerpts from the same book, will in the present decision be collectively referred to as D13.]*

D16: G. Rau, "Ergonomische Überlegungen bei der Gestaltung komplexer medizinischer Instrumentierung unter Einsatz von Mikroprozessoren", Biomedizinische Technik, Vol. 24, June 1979, pp.10-15

D17: Health Devices, December 1991, Vol.20, No.12, p.467 (originally filed by respondent 2 as "Anlage 17").

III. The appeal is the third one in the present opposition proceedings. The opposition division, revoking the patent in a first decision of 11 June 2002, decided that the subject-matter of claim 1 as granted as well as that of the auxiliary request was obvious having regard to a combination of D12 and D13. This decision was set aside by the Board for formal reasons (T 838/02). In a second revocation decision of

19 January 2004 the opposition division decided that the combination of D12 and D13 did not render the invention obvious but that D12 together with a prior use did. Also this decision was set aside by the Board for formal reasons (T 474/04). In a third decision of 16 March 2006, which is the decision under appeal, the opposition division again revoked the patent. That decision was taken on the basis of the appellant's main request to maintain the patent as granted or on the basis of two auxiliary requests. Auxiliary requests 1 and 2 corresponded to the third and first auxiliary requests, respectively, filed by the appellant by letter dated 15 February 2006. The opposition division again held that D12 together with the prior use rendered the invention according to the main request obvious. The subject-matter of claim 1 according to auxiliary request 1 lacked an inventive step over D12 together with D8, whereas claim 1 of auxiliary request 2 contained subject-matter not disclosed in the application as filed, and moreover extended the patent's scope of protection.

IV. In the statement setting out the grounds of appeal, dated 20 October 2006, the appellant filed auxiliary requests 1-4. Auxiliary requests 5-7 and auxiliary requests 8 and 9 were filed by two letters both dated 24 October 2006.

V. Claim 1 as granted reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a hemodialyzer and means for effecting extracorporeal

circulation of blood through a blood compartment of the hemodialyzer, characterized by

- (a) programmable memory;
- (b) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine for entering into the memory a time period and a target cumulative value of an operational parameter, to be achieved while operating the machine during the time period;
- (c) means for entering into the memory a proposed time-varying profile of the operational parameter to be executed by the machine during the time period, the profile being representable as a plot of co-ordinates on said touch screen in a region defined by an ordinate of values of the operational parameter and a time-based abscissa, the plot defining a profile cumulative value of the parameter being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;
- (d) means, responsive to the entered time period and entered proposed profile, for comparing the profile cumulative value with the target cumulative value;
- (e) means, responsive to said means defined in (d), for changing the proposed profile along the ordinate so that the profile cumulative value is made equal to the target cumulative value;
- (f) means for entering the changed profile into the memory in place of the proposed profile; and
- (g) means, responsive to said means defined in (f), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target cumulative value with [sic] the time period".

VI. Claim 1 according to auxiliary request 1 reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a hemodialyzer and means for effecting extracorporeal circulation of blood through a blood compartment of the hemodialyzer, characterized by

- (a) programmable memory;
- (b) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine and comprising a numeric keypad displayable on the touch screen for entering into the memory a time period and a target cumulative value of an operational parameter, to be achieved while operating the machine during the time period;
- (c) means for entering into the memory a proposed time-varying profile of the operational parameter to be executed by the machine during the time period, the profile being representable as a plot of co-ordinates on said touch screen in a region defined by an ordinate of values of the operational parameter and a time-based abscissa, the plot defining a profile cumulative value of the parameter being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;
- (d) means, responsive to the entered time period and entered proposed profile, for comparing the profile cumulative value with the target cumulative value;
- (e) means, responsive to said means defined in (d), for changing the proposed profile along the ordinate so that the profile cumulative value is made equal to the target cumulative value and the original shape of the profile is maintained;

(f) means for entering the changed profile into the memory in place of the proposed profile; and  
(g) means, responsive to said means defined in (f), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target cumulative value within the time period".

VII. Claim 1 according to auxiliary request 2 reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a hemodialyzer and means for effecting extracorporeal circulation of blood through a blood compartment of the hemodialyzer, characterized by

- (a) programmable memory;
- (b) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine for entering into the memory a time period and a target cumulative value of an operational parameter, to be achieved while operating the machine during the time period;
- (c) means for entering into the memory proposed time-varying profiles of the operational parameter to be executed by the machine during the time period, each profile being representable as a plot of co-ordinates on said touch screen in a region defined by an ordinate of values of the operational parameter and a time-based abscissa, the plot defining a profile cumulative value of the parameter being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;
- (d) means for storing profile templates;



- (e) means using the touch screen for displaying and activating a stored profile template;
- (f) means, responsive to the entered time period and entered proposed profile, for comparing the profile cumulative value with the target cumulative value;
- (g) means, responsive to said means defined in (f), for changing the proposed profile along the ordinate so that the profile cumulative value is made equal to the target cumulative value;
- (h) means for entering the changed profile into the memory in place of the proposed profile; and
- (i) means, responsive to said means defined in (h), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target cumulative value within the time period".

VIII. Claim 1 according to auxiliary request 3 reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a hemodialyzer and means for effecting extracorporeal circulation of blood through a blood compartment of the hemodialyzer, characterized by

- (a) programmable memory;
- (b) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine for entering into the memory a time period and a target ultrafiltration volume, to be achieved while operating the machine during the time period;
- (c) means for calculating a constant ultrafiltration rate from the entered time period and target ultrafiltration volume;

(d) means for entering into the memory a proposed time-varying profile of the ultrafiltration rate to be executed by the machine during the time period, in place of the constant rate, the profile being representable as a plot of co-ordinates on said touch screen in a region defined by an ordinate of values of the ultrafiltration rate and a time-based abscissa, the plot defining a profile ultrafiltration volume being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;

(e) means, responsive to the entered time period and entered proposed profile, for comparing the profile ultrafiltration volume with the target ultrafiltration volume;

(f) means, responsive to said means defined in (e), for changing the proposed profile along the ordinate so that the profile ultrafiltration volume is made equal to the target ultrafiltration volume;

(g) means for entering the changed profile into the memory in place of the proposed profile; and

(h) means, responsive to said means defined in (g), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target ultrafiltration volume within the time period".

IX. Claim 1 according to auxiliary request 4 reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a hemodialyzer and means for effecting extracorporeal circulation of blood through a blood compartment of the hemodialyzer, characterized by

- (a) programmable memory;
- (b) means for communicating with a data card having stored treatment parameters;
- (c) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine for entering into the memory a time period and a target cumulative value of an operational parameter from the data card, to be achieved while operating the machine during the time period;
- (d) means for entering into the memory a proposed time-varying profile of the operational parameter to be executed by the machine during the time period, the profile being representable as a plot of co-ordinates on said touch screen in a region defined by an ordinate of values of the operational parameter and a time-based abscissa, the plot defining a profile cumulative value of the parameter being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;
- (e) means, responsive to the entered time period and entered proposed profile, for comparing the profile cumulative value with the target cumulative value;
- (f) means, responsive to said means defined in (e), for changing the proposed profile along the ordinate so that the profile cumulative value is made equal to the target cumulative value and the original shape of the profile is at least substantially maintained;
- (g) means for entering the changed profile into the memory in place of the proposed profile; and
- (h) means, responsive to said means defined in (g), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target cumulative value within the time period".

X. Claim 1 according to auxiliary request 5 reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a hemodialyzer and means for effecting extracorporeal circulation of blood through a blood compartment of the hemodialyzer, characterized by

(a) programmable memory;

(b) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine and comprising a numeric keypad displayable on the touch screen for entering into the memory a time period and a target cumulative value of an operational parameter, to be achieved while operating the machine during the time period;

(c) means for thereafter entering into the memory a pre-stored, proposed time-varying profile of the operational parameter to be executed by the machine during the time period, the profile being representable as a plot of co-ordinates on said touch screen in a region defined by an ordinate of values of the operational parameter and a time-based abscissa, the plot defining a profile cumulative value of the parameter being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;

(d) means, responsive to the entered time period and entered proposed profile, for comparing the profile cumulative value with the target cumulative value;

(e) means, responsive to said means defined in (d), for changing the proposed profile along the ordinate so that the profile cumulative value is made equal to the

target cumulative value and the original shape of the profile is at least substantially maintained;

(f) means for entering the changed profile into the memory in place of the proposed profile; and

(g) means, responsive to said means defined in (f), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target cumulative value within the time period."

XI. Claim 1 according to auxiliary request 6 reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a hemodialyzer and means for effecting extracorporeal circulation of blood through a blood compartment of the hemodialyzer, characterized by

(a) programmable memory;

(b) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine for entering into the memory a time period and a target cumulative value of an operational parameter, to be achieved while operating the machine during the time period;

(c) means for entering into the memory proposed time-varying profiles of the operational parameter to be executed by the machine during the time period, each profile being representable as a plot of co-ordinates on said touch screen in a region defined by an ordinate of values of the operational parameter and a time-based abscissa, the plot defining a profile cumulative value of the parameter being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;

(d) means for displaying each proposed profile on the touch screen prior to entering a profile for operation;  
(e) means using the touch screen for entering a displayed proposed profile for operation;  
(f) means, responsive to the entered time period and entered proposed profile, for comparing the profile cumulative value with the target cumulative value;  
(g) means, responsive to said means defined in (f), for changing the proposed profile along the ordinate so that the profile cumulative value is made equal to the target cumulative value;  
(h) means for entering the changed profile into the memory in place of the proposed profile; and  
(i) means, responsive to said means defined in (h), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target cumulative value within the time period".

XII. Claim 1 according to auxiliary request 7 reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a hemodialyzer and means for effecting extracorporeal circulation of blood through a blood compartment of the hemodialyzer, characterized by

(a) programmable memory;  
(b) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine for entering into the memory a time period and a target ultrafiltration volume, to be achieved while operating the machine during the time period;

- (c) means for calculating a constant ultrafiltration rate from the entered time period and target ultrafiltration volume;
- (d) means for thereafter entering into the memory a pre-stored proposed time-varying profile of the ultrafiltration rate to be executed by the machine during the time period, in place of the constant rate, the profile being representable as a plot of co-ordinates on said touch screen in a region defined by an ordinate of values of the ultrafiltration rate and a time-based abscissa, the plot defining a profile ultrafiltration volume being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;
- (e) means, responsive to the entered time period and entered proposed profile, for comparing the profile ultrafiltration volume with the target ultrafiltration volume;
- (f) means, responsive to said means defined in (e), for changing the proposed profile along the ordinate so that the profile ultrafiltration volume is made equal to the target ultrafiltration volume;
- (g) means for entering the changed profile into the memory in place of the proposed profile; and
- (h) means, responsive to said means defined in (g), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target ultrafiltration volume within the time period".

XIII. Claim 1 according to auxiliary request 8 reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a

hemodialyzer and means for effecting extracorporeal circulation of blood through a blood compartment of the hemodialyzer, characterized by

- (a) programmable memory;
- (b) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine for entering into the memory a time period and a target ultrafiltration volume, to be achieved while operating the machine during the time period, the touch screen further being configured to display a first screen having a first button, which when touched allows the operator to access a second screen for displaying a proposed time-varying profile of ultrafiltration rate, and a second button, which when touched allows the operator to access a third screen for displaying a proposed time-varying profile of sodium concentration;
- (c) means using the touch screen for entering into the memory the proposed time-varying profile of the sodium concentration to be executed by the machine during the time period;
- (d) means for entering into the memory the proposed time-varying profile of the ultrafiltration rate to be executed by the machine during the time period the profile being representable as a plot of coordinates on said touch screen in a region defined by an ordinate of values of the ultrafiltration rate and a time-based abscissa, the plot defining a profile ultrafiltration volume being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;
- (e) means, responsive to the entered time period and entered proposed profile, for comparing the profile ultrafiltration volume with the target ultrafiltration volume;



(f) means, responsive to said means defined in (e), for changing the proposed profile along the ordinate so that the profile ultrafiltration volume is made equal to the target ultrafiltration volume;

(g) means for entering the changed profile into the memory in place of the proposed profile; and

(h) means, responsive to said means defined in (g), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target ultrafiltration volume within the time period".

XIV. Claim 1 according to auxiliary request 9 reads:

"Hemodialysis machine comprising means for circulating dialysate through a dialysate compartment of a hemodialyzer and means for effecting extracorporeal circulation of blood through a blood compartment of the hemodialyzer, characterized by

(a) programmable memory;

(b) a user/machine interface configured as a touch screen operably connected to the hemodialysis machine for entering into the memory a time period and a target ultrafiltration volume, to be achieved while operating the machine during the time period;

(c) means for calculating a constant ultrafiltration rate from the entered time period and target ultrafiltration volume;

(d) means for replacing the constant ultrafiltration rate by entering into the memory a pre-stored, proposed time-varying profile of the ultrafiltration rate to be executed by the machine during the time period, the profile being representable as a plot of co-ordinates on said touch screen in a region defined by an ordinate

of values of the ultrafiltration rate and a time-based abscissa, the plot defining a profile ultrafiltration volume being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa;

(e) means, responsive to the entered time period and entered proposed profile, for comparing the profile ultrafiltration volume with the target ultrafiltration volume;

(f) means, responsive to said means defined in (e), for changing the proposed profile along the ordinate so that the profile ultrafiltration volume is made equal to the target ultrafiltration volume;

(g) means for entering the changed profile into the memory in place of the proposed profile; and

(h) means, responsive to said means defined in (g), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target ultrafiltration volume within the time period".

XV. In a communication dated 30 October 2009, following a summons to oral proceedings, the Board drew the parties' attention to the fact that the opposition division had not admitted a number of documents filed by respondent 2 into the proceedings but stated that there was nevertheless a serious case for admitting in particular D16, disclosing a touch screen and mentioning a keypad, and D17, mentioning the "Drake Willock System 1000" referred to in the patent-in-suit. As to the issue of inventive step, it was noted that the respondents regarded D12 as the best starting point and sought to combine it with D16, D17, D8 and/or D13. With respect to the appellant's auxiliary requests the

Board pointed out that according to the Rules of Procedure of the Boards of Appeal requests which could have been presented in the first-instance proceedings might be held inadmissible by a Board of Appeal.

XVI. By letter dated 14 December 2009 the appellant stated that it would not be attending the oral proceedings but that it maintained its main request for maintenance of the patent as granted as well as the nine auxiliary requests.

XVII. Oral proceedings were held on 27 January 2010 in the absence of the appellant.

XVIII. The appellant's arguments can be summarized as follows:

- (a) Regarding the main request (see also the grounds of appeal in case T 474/04, dated 7 June 2004, points 4.1, 4.2 and 4.5), D8 disclosed a drug infusion system including a touch screen that could be used to input various infusion rate related parameters via a numerical keypad. D12 described a computer-controlled system for a hemodialysis machine that allegedly had all of the features of the claimed apparatus other than a touch screen. D13 concerned the field of drug delivery and disclosed the use of virtual slide controls for setting delivery time and drug dose which were manipulated by placing the finger on the screen so that it registered with a virtual button and then sliding the finger along the scale. Thus, the document disclosed the virtual equivalent of the known slide controls that one might find on a sound control panel. There was no

suggestion in D13 that the touch screen technology it described could be applied outside the field of drug delivery. D13 only disclosed the use of virtual slide controls for setting a single value, specifically delivery time and drug dose. Neither D13 nor D8 suggested to use virtual slide controls to create a time-dependent profile for an operational parameter that varied with time. Indeed, D13 did not even contemplate setting up a time-dependent profile of any kind. Furthermore, there was no suggestion in D12 or D13 as to how one would integrate a touch screen user/machine interface into a dialysis machine that would allow the user to input the data necessary to operate a complicated dialysis regimen. As D13 did not suggest how to set up a time-dependent profile for an operational parameter using a touch screen, it could not possibly lead the skilled person to use a touch screen in a hemodialysis apparatus where it was necessary to create time-dependent profiles for the various operational parameters. Even accepting that the combination of D12 with D13 was one that would be made by the skilled person, the realisation that the virtual slide controls taught in D13 could be used to set up a bar chart depicting the variation of a given operational parameter with time was clearly an inventive solution to the problem of creating time-dependent profiles that was not suggested in either D12 or D13. Until the present invention, touch screens merely offered an alternative way of inputting information by replacing conventional knobs and buttons with their virtual equivalents. In contrast, with the present invention the touch

screen was used to set up a profile for an operational parameter that depicted the variation of that parameter with time. This was an innovative application for a touch screen which went far beyond the mere replacement of an actual knob or button with a virtual knob or button. Neither D13 nor any other document cited in the opposition proceedings suggested such an application for a touch screen. Thus, neither D13 nor any other document cited in the opposition proceedings would have motivated the skilled person to develop a touch screen for a dialysis machine in which the various time-dependent profiles that governed the operation of the dialysis machine and so the dialysis treatment were created directly on the screen. The dialysis machine now claimed had met with critical acclaim winning a number of awards and had also had significant commercial success as a result of the advantages offered by the user-friendly touch screen. The principal advantage was the ease with which time-dependent profiles for the various operational parameters that characterised the dialysis treatment could be created at the start of a dialysis treatment and then modified during the course of that treatment. This advantage was not one that resulted from simply incorporating a known touch screen of the type taught in D13 with the dialysis system that was taught in D12.

- (b) As to the first auxiliary request, it contained, as a further feature of the claimed haemodialysis machine, a numeric keypad displayable on the touch screen. There was no teaching in D12 or any other

document that would have motivated the skilled person to disregard the process taught in D12, which, after all, related to the field of dialysis, and instead employ a data entry technique taught in a document (D8) from a more remote technical field.

The other auxiliary requests contained yet further features, such as means for storing profile templates and means for displaying and activating stored profile templates (second auxiliary request), means for calculating a constant ultrafiltration rate (third auxiliary request), means for communicating with a data card (fourth auxiliary request) and combinations of further features and more precise details (fifth to ninth auxiliary requests), none of which were suggested by any of the cited documents.

(c) Therefore, the claimed subject-matter was inventive.

XIX. The respondents' arguments can be summarized as follows (see in particular the letter dated 1 March 2007 of respondent 1, part I, point 3; and the comments made by respondent 2 in the oral proceedings before the opposition division on 19 January 2004 as reported in the minutes, end of paragraph 2.2):

(a) D12 and D13 concerned the same technical area, viz medical equipment. In order to simplify the method for inputting parameters used in D12 the skilled person would consider using the touch screen known from D13 for inputting the operation parameters

described in D12. Although according to D13 parameter values were not indicated in the region of the screen defined by the ordinate and the abscissa it was obvious that they could be, provided that a lower precision was acceptable. The skilled person would also have combined D12 and D13 for reasons of ergonomics. As the advantages of touch screens were known there was no reason for the skilled person to limit himself to virtual buttons.

- (b) Regarding the first auxiliary request, a numeric keypad was known from D8, D12 and also D16, so that the addition of that and further features could not render the claimed subject-matter inventive.

The same was valid for the additional features of the other auxiliary requests, some of which had not always been originally indicated as essential for the invention and several of which moreover lacked clarity. Also, a number of those features (eg in the fifth auxiliary request) bore no relationship to the use of a touch screen so that no synergistic effect existed. Therefore, the addition of further features did not render the claimed subject-matter inventive.

- (c) The respondents also protested against the high number of auxiliary requests.

XX. The appellant requests that the patent be maintained as granted or on the basis of auxiliary requests 1-4 filed with the grounds of appeal dated 20 October 2006 or on

the basis of auxiliary requests 5-9 filed by two letters both dated 24 October 2006.

XXI. Both respondents request that the appeal be dismissed.

## **Reasons for the Decision**

### *The appellant's main request*

#### 1. Construction of claim 1

Claim 1 contains the expression "the plot defining a profile cumulative value of the parameter being defined by touching the touch screen at a plurality of points within said region defined by the ordinate and the abscissa". Respondent 1 has suggested that this formulation does not necessarily imply that *all* parameter values are defined in this manner (letter dated 1 March 2007, paragraph bridging p. 12 and 13). The Board however interprets the claim in accordance with the description in the way that the claimed machine permits a complete plot to be defined by touching points within this region of the touch screen.

#### 2. Inventive step

2.1 D12 discloses a controlling unit intended for a conventional hemodialysis machine in accordance with the preamble of present claim 1. This controlling unit comprises:

(a) programmable memory (see eg p. 2.1-4, "Arbeitsspeicher");



(b) a user/machine interface operably connected to the hemodialysis machine for entering into the memory a time period and a target cumulative value of an operational parameter (ultrafiltration (UF); cf fig. 3.2.1, positions 3 and 7), to be achieved while operating the machine during the time period;

(c) means for entering into the memory a proposed time-varying profile of the operational parameter (cf fig. 3.2.2, profile 5) to be executed by the machine during the time period, the profile being representable as a plot of co-ordinates on a screen in a region defined by an ordinate of values of the operational parameter and a time-based abscissa, the plot defining a profile cumulative value of the parameter (ultrafiltration volume, p. 3.2-4, POS 8);

(d) means, responsive to the entered time period and entered proposed profile, for comparing the profile cumulative value with the target cumulative value; and

(e) means, responsive to said means defined in (d), for changing the proposed profile along the ordinate so that the profile cumulative value is made equal to the target cumulative value (cf p. 3.2-10, "7. Funktion": the cumulative value can be changed to a target value and the curve is accordingly adapted; therefore the current value and the target value must be compared);

(f) means for entering the changed profile into the memory in place of the proposed profile; and

- (g) means, responsive to said means defined in (f), for causing the machine to operate according to the changed shifted profile so as to enable the machine to achieve, while operating, the entered target cumulative value within the time period (since the changed profile controls the machine).
- 2.2 Therefore, as the respondents have argued and the appellant has not denied, the subject-matter now being claimed differs from D12 in that the screen is configured as a touch screen permitting a parameter profile to be defined by touching the touch screen at a plurality of points within the region defined by the ordinate and the abscissa. The technical problem to be solved with respect to D12 can therefore be seen in suggesting a more convenient way of inputting such a profile.
- 2.3 The skilled person in the present case is an engineer working in the area of medical equipment, in particular hemodialysis devices, having some knowledge of the corresponding areas of medicine.
- 2.4 As acknowledged in the patent specification (paragraph [0051]), touch screens were known at the date of priority and had been used in user interface applications for medical equipment. This is confirmed by the available prior art. D16 refers to the touch screen as a promising kind of input device ("Bedienelement der Zukunft", p. 12 penultimate paragraph), although at that time (1979) it was still regarded as "unconventional". In D13 an operator inputs data by moving his finger over a touch screen to the position corresponding to the desired value (fig. 4 on

p. 121). Its use, or intended use, in a dialysis apparatus is reported in D17 ("Drake Willock System 1000"). In the Board's view these documents demonstrate that the skilled person, although not himself an expert on touch screens but familiar with screen technology in general and capable of obtaining and understanding any necessary information about touch screens, would have considered replacing the conventional screen used in D12 by a touch screen. (This was also the view of the opposition division - cf the first decision, dated 11 June 2002, point 2.4, and the second decision, dated 19 January 2004, point 1.12.) The touch screen was used to input parameter values. The crucial question is therefore whether or not it was obvious to suggest that a profile be defined by touching the touch screen at a plurality of points within the region defined by the ordinate and the abscissa, ie by tracing the desired profile directly on the screen.

- 2.5 It was already known to provide a touch screen with virtual buttons and to use it as a keyboard (D16, p. 13, first paragraph and fig. 5; D8, col. 5, l. 23-26), and the appellant has argued that the prior art may at most have led the skilled person to provide the touch screen with such virtual cursor keys. This argument relies on the assumption that the skilled person would have limited himself to copying the prior art approach without considering its suitability for his particular application. In the Board's view, however, the skilled person would have been aware that a touch screen (of sufficient resolution) is rather like a piece of paper: in the same way as a diagram can be drawn on paper, a plot can be traced on the screen. Therefore he would have recognized that a touch screen could be used for

inputting a profile directly, without using virtual buttons. After all, a plot is nothing more than a series of dots, and the task of any touch screen is to detect the coordinates of indicated dots. In such circumstances the present invention must be regarded as a straight-forward application of touch-screen technology to a dialysis controller. Its user-friendliness and commercial success, invoked by the appellant, are nothing more than the consequence of using a touch screen having its known advantages. Therefore, the skilled person, looking for a way to facilitate the inputting of a profile in a hemodialysis machine, would consider using a touch screen and defining a profile by touching the touch screen at a plurality of points within the region defined by the ordinate and the abscissa.

- 2.6 The opposition division reached the same conclusion as the Board in their first decision of 11 June 2002 but a different one in the second decision of 19 January 2004. In the latter decision the opposition division instead took the view that "the full advantages and flexibilities of using touch screens were not known at the time of filing" (see its point 1.12). It is not clear to the Board what those full advantages might have been. If the opposition division simply wanted to say that it was not previously known to use a touch screen for inputting a complete profile (rather than discrete values) it is noted that this observation in itself is only an argument in favour of novelty and cannot explain why the invention would also involve an inventive step.

- 2.7 It follows that the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973).

*The appellant's auxiliary request 1*

3. Auxiliary request 1 adds to claim 1 of the main request the features that the original shape of the profile is maintained when the profile is adapted to the target cumulative value (feature (e)), and that a numeric keypad is displayable on the touch screen (feature (b)).

The first additional feature does not constitute a difference with respect to the closest prior art since it is mentioned on p. 3.2-10 of D12, "7. Funktion": "Dabei wird die Form des Profils beibehalten". The second feature is, as noted above, known from D16 and D8. Clearly keys, virtual as well as real, would be suitable for inputting numeric data.

Thus the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973). It is therefore not necessary to examine whether, as the respondents argue, the claim contains obscurities and subject-matter not present in the application as filed.

*The appellant's auxiliary request 2*

4. According to auxiliary request 2 profile templates can be stored for (subsequent) display and activation. These features do not constitute a difference with respect to the closest prior art since D12 mentions that up to ten stored profiles can be selected for display and repeated use (p. 3.2-11, "8. Funktion"). Thus the subject-matter of claim 1 does not involve an

inventive step (Article 56 EPC 1973). Again, it is not necessary to examine whether, as the respondents argue, the claim contains obscurities and subject-matter not present in the application as filed.

*The appellant's auxiliary request 3*

5. Claim 1 of auxiliary request 3 is identical to claim 1 of the "second auxiliary request" filed in the first-instance proceedings by letter dated 15 February 2006 but not pursued by the appellant at the oral proceedings before the opposition division. Because the appellant dropped it the opposition division could not decide on it. Were it to be reintroduced now, the Board would either have to remit the case for consideration by the opposition division, which would unduly prolong the proceedings, or examine the case itself as first instance, which is not the main task of a Board of Appeal. Clearly neither option is satisfactory. The respondents have argued that the request is inadmissible since it would be inequitable to let them suffer the consequences of actions over which they had no power. The Board agrees with this view and rejects the request as inadmissible (cf T 528/93 of 23 October 1996, point 1 of the reasons).

*The appellant's auxiliary request 4*

6. Claim 1 of auxiliary request 4 is identical with claim 1 of the "fourth auxiliary request" filed in the first-instance proceedings by letter dated 17 February 2006 but not pursued by the appellant at the oral proceedings before the opposition division. This

request is rejected as inadmissible for the same reasons as auxiliary request 3.

*The appellant's auxiliary request 5*

7. Claim 1 contains "means for thereafter entering into the memory a *pre-stored*, proposed time-varying profile of the operational parameter to be executed by the machine" (first part of feature (c); italics added). On the other hand, the final part of feature (c) states that "the plot defining a profile cumulative value of the parameter being *defined by touching the touch screen*" (italics added). It is however not clear how the profile that is to be executed by the machine could be both pre-stored and input manually, so that the claim already for that reason does not comply with Article 84 EPC 1973. It can therefore be left undecided whether the expression "at least substantially maintained" is obscure or whether the reference point for "thereafter" is ambiguous, as the respondents have argued.

*The appellant's auxiliary request 6*

8. Claim 1 contains "means for displaying each proposed profile on the touch screen prior to entering a profile for operation" and "means using the touch screen for entering a displayed proposed profile for operation". This is however similar to the procedure in D12: any proposed profile is of course displayed, and a profile is activated (ie "entered for operation") by pressing the START button (cf D12, paragraphs 3.5.3 and 3.5.4). If a touch screen is substituted for the display in D12 it will inevitably be used for inputting also this data.

9. Thus, the subject-matter of claim 1 does not involve an inventive step. There is consequently no need to decide whether the amendment concerning the plural form "time-varying profiles" contravenes Article 123(2),(3) EPC, as the opposition division held (cf the decision under appeal, point 7).

*The appellant's auxiliary request 7*

10. Claim 1 is identical with claim 1 of auxiliary request 3 but with two additional limitations: the words "thereafter" and "pre-stored" in feature (d). The reasons for rejecting auxiliary request 3 thus apply a *fortiori* to auxiliary request 7, which consequently is also not admitted.

*The appellant's auxiliary request 8*

11. Claim 1 has been amended to include the following features:
- "the touch screen further being configured to display a first screen having a first button, which when touched allows the operator to access a second screen for displaying a proposed time-varying profile of ultrafiltration rate, and a second button, which when touched allows the operator to access a third screen for displaying a proposed time-varying profile of sodium concentration", and
  - "means using the touch screen for entering into the memory the proposed time-varying profile of the sodium concentration to be executed by the machine during the time period".



Also in the closest prior art ultrafiltration rate is used as operational parameter with a time-varying profile, and the ultrafiltration volume is its cumulative value (see point 2.1 *supra*). Moreover, a sodium profile may be input (D12 p. 3.2-8, "4.Funktion"). It was obvious that a touch screen suitable for inputting a UF profile could also be used to define a sodium profile, which is similar. Since the ordinate is different for the two profiles it would clearly be convenient to provide separate screens for the respective inputting operations. Switching between screens using buttons is a conventional method (similar to the function choices in D12 which are validated by pressing START; see p. 3.2-5 and the first paragraph of p. 3.2-7).

Thus none of these additions required any inventive skill. It follows that the subject-matter of claim 1 does not involve an inventive step (Article 56 EPC 1973).

*The appellant's auxiliary request 9*

12. Claim 1 of auxiliary request 9 differs from claim 1 of auxiliary request 7 in that the expression

- "means for replacing the constant ultrafiltration rate by entering into the memory a pre-stored, proposed time-varying profile of the ultrafiltration rate to be executed by the machine during the time period"

replaces

- "means for thereafter entering into the memory a pre-stored, proposed time-varying profile of the ultrafiltration rate to be executed by the machine during the time period, in place of the constant rate".

This amounts to a mere reformulation of the claim not affecting its subject-matter. Therefore, auxiliary request 9 is rejected as inadmissible for the same reasons as auxiliary request 7.

## **Order**

**For these reasons it is decided that:**

The appeal is dismissed.

The Registrar:

For the Chairman:

S. Fabiani

B. ter Laan