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Datasheet for the decision of 20 March 2026

Case Number: T 1855/23 - 3.5.06

Application Number: 19165526.5

Publication Number: 3520689

IPC: A61B5/02, A61B5/0215

Language of the proceedings: EN

Title of invention:
SYSTEM FOR ACQUIRING PHYSIOLOGICAL VARIABLES MEASURED IN A BODY

Applicant:
St. Jude Medical Coordination Center BVBA

Headword:
Acquiring physiological variables measured in a body/ST. JUDE MEDICAL COORDINATION CENTER

Relevant legal provisions:
EPC Art. 76(1)

Keyword:
Divisional application - added subject matter (after amendment no)

Decisions cited:
G 0001/06

Catchword:

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Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 1855/23 - 3.5.06

D E C I S I O N
of Technical Board of Appeal 3.5.06
of 20 March 2026

Appellant: (Applicant)	St. Jude Medical Coordination Center BVBA The Corporate Village Da Vincilaan 11-Box F1 1930 Zaventem (BE)
Representative:	Zacco Sweden AB P.O. Box 5581 Löjtnantsgatan 21 114 85 Stockholm (SE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 28 June 2023 refusing European patent application No. 19165526.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	M. Müller
Members:	A. Teale
	A. Jimenez

Summary of Facts and Submissions

I. This is an appeal against the decision, dispatched with reasons on 28 June 2023, to refuse European patent application No. 19 165 526.5 on the basis that the subject-matter of claim 1 extended beyond the content of the "earlier applications" termed the "parent", "grandparent" and "great-grandparent" applications below, Article 76(1) EPC. These applications are as follows:

Parent: EP 17176158.8, published as EP 3238613 A1.
Grandparent: EP 15200395.0, published as EP 3011898 A1.
Great-grandparent: EP 09170637.4, published as EP 2298162 A1.

II. A notice of appeal and the appeal fee were received on 24 August 2023, the appellant requesting that the decision be set aside and, as an auxiliary request, oral proceedings.

III. With a statement of grounds of appeal, received on 20 October 2023, the appellant filed claims according to a main request and auxiliary requests 1 to 3. The appellant requested that a patent be granted on the basis of said main request and auxiliary requests 1 to 3.

IV. In an annex to a summons to oral proceedings the board set out its preliminary opinion on the appeal as follows. Claim 1 of the main request and auxiliary request 2 contained added subject-matter over the parent application, contrary to Article 76(1) EPC, although not for the reasons given in the decision. However claim 1 of auxiliary requests 1 and 3 seemed to

comply with Article 76(1) EPC. If the appellant withdrew the main request and auxiliary request 2, then the board was inclined to remit the case to the examining division for further prosecution.

V. On 12 March 2026 two almost identical responses, differing only in the request regarding oral proceedings, were received from the appellant. With the second response, which stated that "This submission replaces the submission filed earlier today", the appellant submitted claims according to a new main request, stating that it "shall serve as basis for the further consideration of the board", that "All previous claim requests are hereby withdrawn" and that "The request for oral proceedings is hereby withdrawn, provided that the Board remits the case to the Examining Division on the basis of the newly filed amendments".

VI. The application is thus being considered in the following form:

Description:
pages 1 to 14, as originally filed.

Claims:
New main request: 1 to 5, received with the second response of 12 March 2026.

Drawings: 1/5 to 5/5, as originally filed.

VII. Claim 1 of the main request reads as follows:

"A blood pressure measurement and communication system comprising:

a first module (607) positioned along a wired connection between an aortic pressure sensor (608) and a monitoring device (605) and configured to:
receive a signal from the wired connection, said signal representing a measured aortic blood pressure value from the aortic pressure sensor (608), without changing the measured aortic blood pressure value, and provide a wireless signal representing the measured aortic blood pressure value to a receiver (604);
a second module (606) configured to:
receive a signal in a first signal format representing a measured distal blood pressure value from a distal pressure sensor (609) via a connection between the second module (606) and the distal pressure sensor (609), convert the signal in the first signal format representing the measured distal blood pressure value to a second signal format, and provide a wireless signal representing the measured distal blood pressure value to the receiver (604);
and the receiver (604), which is configured to wirelessly receive (i) the wireless signal representing the measured aortic blood pressure value measured by the aortic pressure sensor (608), and (ii) the wireless signal representing the measured distal blood pressure value measured by the distal pressure sensor (609), the receiver configured to:
calculate an FFR value based on at least the wirelessly received signal representing the measured aortic blood pressure value measured by the aortic pressure sensor (608) and the wirelessly received signal representing the measured distal blood pressure value measured by the distal pressure sensor (609), and display data based on the FFR value."

Reasons for the Decision

1. Admissibility of the appeal

In view of the facts set out at points I to III above, the appeal fulfils the admissibility requirements under the EPC and is consequently admissible.

2. Summary of the invention

2.1 Citations refer to the parent application as originally filed.

2.2 The invention relates to a system for use in cardiology to assess vascular "stenoses". Blood pressure is measured on a patient, proximally and distally to a stenosis, using two sensors, the distal measurement being performed by an *in vivo (internal)* sensor and the proximal measurement by an *external* aortic sensor. The measurements are used to determine the fractional flow reserve (FFR) caused by the stenosis; see page 1, line 6, to page 2, line 13, and page 7, lines 26 to 29. This case focusses on the aortic sensor channel.

2.3 The FFR (fractional flow reserve) of a stenosis is defined as the ratio of the distal blood pressure (Pd) to the aortic blood pressure (Pa); see paragraph bridging pages 1 and 2. In the (hypothetical) absence of the stenosis, the aortic blood pressure should be the same as the distal blood pressure. If there is a stenosis, then the distal blood pressure is correspondingly lower.

2.4 According to page 6, lines 2 to 6, the sensor signals are in the format accepted by the standard ANSI/AAMI BP22-1994. The board understands this standard, at

least as far as wired communication is concerned, to relate to analogue sensor signals.

2.5 Figure 2 illustrates the insertion of a distal sensor (214)(see figure 1) on a guide wire into the patient's femoral artery, situated in the leg. The sensor comprises a sensor element (114), for instance a pressure gauge, requiring electrical energy for its operation, and is connected to a signal transmitting cable (116), via which either an AC or DC supply voltage is fed to the sensor; see page 6, lines 24 to 33, and page 7, lines 21 to 25.

2.6 As illustrated in figure 3, in the past (see page 2, lines 6 to 19), the aortic and distal sensor signals (302, 303) were fed from the sensors to a smaller monitor (also termed an "eavesdropping" monitor or receiver) (304) and from there to a "cathlab monitor" (also termed a "central monitor" or "monitoring device"). The term "cathlab" stands for "catheterisation laboratory".

2.7 The invention addresses the problem that, in the past, the cathlab monitor was initially connected to the sensors directly and had to be disconnected from them in order to interpose the smaller monitor. This had the drawbacks of being inconvenient and requiring recalibration of the two sensor connections and the balancing of the smaller and cathlab monitors; see page 8, lines 1 to 12. The solution according to the invention is to allow the smaller monitor to be connected to the sensors in parallel with the cathlab sensor without disturbing the connections to the cathlab monitor; see page 2, lines 14 to 19.

2.8 The various embodiments of the invention differ in how the measurement signals, termed the "distal channel" (402-802) and "aortic channel" (403-803), are transmitted to the two display devices: be it by wire or wirelessly. In figure 4 both sensor signals (402, 403) are transmitted by wire to the eavesdropping receiver (404) and central monitor (405), but in figures 5, 6 and 7 some signals are transmitted by wire and the rest wirelessly. By setting out a "wired connection between the first module (607) and the monitoring device (608)" and providing "a wireless signal representing the measured aortic blood pressure value to a receiver (604)", claim 1 is restricted to the embodiments of figures 5 and 6.

2.9 According to the invention, a "first module" (also termed an "eavesdropping interface" or "communication interface") (507, 607) passes the aortic signal not only to the central monitor but also to the eaves-dropping receiver. The objective is to ensure that the same value of aortic measurements reach both display devices to simplify system calibration; see (regarding figure 6) page 10, lines 17 to 21. The objection under Article 76(1) EPC in the decision relates to the nature of the connection between the aortic channel (503, 603) and the "first module" (507, 607).

2.10 One embodiment of the communication interface (507, 607), in particular the connection between the aortic channel and the "first module", uses "at least one high impedance input" or a "high impedance interface" to electrically "tap into" the conductor in the aortic channel, understood by the board to imply a galvanic connection; see page 8, lines 30 to 32.

2.11 In an alternative embodiment of the communication interface (507, 607), the interface senses the magnetic and/or electric field in the vicinity of the aortic channel (503, 603), understood by the board to be a non-galvanic approach using inductive and/or capacitive coupling; see page 8, line 33, to page 9, line 35.

2.12 For both galvanic and non-galvanic embodiments it is stated that, as the eavesdropping interface is arranged with a high impedance input, the eavesdropping does not affect the signal carried over the aortic channel; see page 8, line 35, to page 9, line 2. Consequently there is no need for recalibration when the eavesdropping monitor is attached to the sensors. The description states this several times; see (regarding figure 5) page 9, lines 27 to 31, and (regarding figure 6) page 10, lines 17 to 21.

3. Extension beyond the content of the earlier application, Article 76(1) EPC

3.1 According to the reasons for the decision, the subject-matter of the claim 1 of the then main request extended beyond the content of the parent, grandparent and great-grandparent applications, contrary to Article 76(1) EPC. Although the applicant had argued that claim 1 was directed to the embodiment disclosed in figure 6 and page 10, lines 1 to 26, of the parent application, there was no basis in the parent application, in particular on page 8, lines 31 to 35, and in figure 4, for generalising the provision of a signal representing the measured aortic blood pressure value to cover ways of avoiding changing the measured aortic blood pressure value beyond the only way disclosed in the parent application (see page 10, lines 17 to 21), namely by using a high impedance input. The examining division

did not accept the applicant's argument that the skilled person would understand from page 8, lines 31 to 35, and figure 4 of the parent application that the connection could be made without using a high impedance connection. Moreover this passage related to another embodiment to that relied upon by the applicant. Claim 1 then on file set out a wired connection between the sensor and the first module, and only the "electrical tapping" option explicitly related to a wired connection; other methods sensed the electromagnetic field in the vicinity of the channel rather than involving a wired connection. Although page 9, lines 8 to 12, of the parent application disclosed, in relation to figure 4, the first module being pre-mounted on standard communication cables, there was no disclosure of how the connection with the cables was realised or whether the wired connections applied to both the electrical tapping and electromagnetic configurations. Put another way, the parent application did not disclose, directly and unambiguously, that the embodiment in figure 6 involved the reception of a signal through the sensor and the first module, the reception being provided by sensing the electromagnetic field around a wire of the connection and the first module being connected to the aortic pressure sensor.

3.2 The appellant has disputed the finding in the decision that the parent application taught that the connection could only be carried out using a high impedance connection. The alternative ways of connecting the first module, for instance on page 8, lines 31 to 35, and figure 4, were also applicable to each of the other systems, including the presently claimed embodiment of figure 6. The skilled person would understand that electric/magnetic field sensing was even less likely to affect the eavesdropped signal than a high-impedance

device, such as a resistor, because electric/magnetic field sensing required no direct contact with the channel.

3.3 The board observes that, in order for the filing date of 18 September 2009 to be valid, Article 76(1) EPC, the subject-matter of claim 1 must be directly and unambiguously disclosed in each of the parent, grandparent and great-grandparent applications. If however the subject-matter of claim 1 is not directly and unambiguously disclosed in any of the parent, grandparent and great-grandparent applications then the filing date is invalid; see G 1/06, headnote.

3.4 Claim 1 according to the present main request has the same wording as that of auxiliary request 1, discussed in the board's preliminary opinion and merely differing from that according to the main request in the decision in editorial amendments.

3.5 The objection under Article 76(1) EPC in the decision boils down to saying that there was no basis in the parent application for generalising the feature of the eavesdropping device presenting a high-impedance to the aortic channel (see page 8, lines 35 to 37) to the functional definition that the eavesdropping interface does not effect the signal carried over the aortic channel.

3.6 In a nutshell, the board takes the view that no generalisation has taken place, but that instead one definition has been replaced by another that, in the context of the application, is technically equivalent. The board agrees with the finding in the decision insofar as the parent application teaches that the connection of the communication interface (507, 607) to

the aortic channel (503, 603) can only be carried out using a high impedance connection; see page 8, lines 35 to 37. The board observes that the communication interface must present a high impedance to the aortic channel, otherwise it would load it and, as it carries analogue signals, change the measured values. However the board disagrees with the conclusion drawn in the decision from this finding, namely that a high impedance can only be realised by electrically tapping into the aortic channel, in other words making a galvanic connection, using a high-impedance device, such as a resistor; see page 8, lines 31 to 32. On the contrary, a high impedance connection can also be realised as a non-galvanic connection by sensing the magnetic and/or electric field in the vicinity of the aortic channel.

3.7 Instead of the high impedance device, such as a resistor, in the galvanic ("tapping") case (see page 8, lines 31 to 32), the skilled person would realise that the equivalent circuit of an arrangement for sensing an electric field would involve a series capacitor terminated in a high-impedance load, hence presenting a high impedance to the aortic channel. Analogously, that of an arrangement for sensing a magnetic field would involve a transformer terminated in a high-impedance load. In all these cases the communication interface presents a high impedance to the aortic channel, thus not changing the measured values, as stated on page 8, lines 35 to 37.

3.8 Hence the board finds that the functional definition, which is disclosed in the parent application (see page 9, lines 27 to 29, and [31]), is technically equivalent, in the context of the application, to the feature that the eavesdropping device presents a high-

impedance to the aortic channel, so that subject-matter has not been added by the amendment.

3.9 Moreover, in view of paragraph [31] of the grandparent and great-grandparent applications, the basis for the present wording of claim 1 is also contained in those applications. Consequently this objection does not invalidate the filing date of the present divisional application.

3.10 The board can see no other reason why claim 1 does not comply with Article 76)(1) EPC and concludes that the subject-matter of claim 1 is disclosed not only in the parent application, but also in the grandparent and great-grandparent applications (see figures 5 and 6 in both), and thus complies with Article 76(1) EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the examining division for further prosecution.

The Registrar: The Chairman:

L. Stridde M. Müller

Decision electronically authenticated