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Datasheet for the decision of 30 April 2026

Case Number: T 0678/24 - 3.2.02

Application Number: 20203250.4

Publication Number: 3791820

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Language of the proceedings: EN

Title of invention:
HIGH DENSITY ELECTRODE MAPPING CATHETER

Patent Proprietor:
St. Jude Medical, Cardiology Division, Inc.

Opponent:
D Young & Co LLP

Headword:

Relevant legal provisions:
EPC Art. 76(1)

Keyword:
Divisional application - added subject-matter (yes)

Decisions cited:

Catchword:

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Boards of Appeal

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Case Number: T 0678/24 - 3.2.02

D E C I S I O N
of Technical Board of Appeal 3.2.02
of 30 April 2026

Appellant: (Opponent)	D Young & Co LLP 3 Noble Street London EC2V 7BQ (GB)
Representative:	D Young & Co LLP 3 Noble Street London EC2V 7BQ (GB)
Respondent: (Patent Proprietor)	St. Jude Medical, Cardiology Division, Inc. One St. Jude Medical Drive St. Paul, Minnesota 55117-9983 (US)
Representative:	Boult Wade Tennant LLP Salisbury Square House 8 Salisbury Square London EC4Y 8AP (GB)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted/ electronically transmitted on 13 March 2024 concerning maintenance of the European Patent No. 3791820 in amended fo rm.**

Composition of the Board:

Chairman	A. Martinez Möller
Members:	S. Böttcher
	Y. Podbielski

Summary of Facts and Submissions

I. The opponent filed an appeal against the decision of the opposition division that the patent as amended according to the main request filed on 8 December 2023 met the requirements of the EPC.

II. Oral proceedings before the Board took place on 30 April 2026.

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

The respondent requested that the appeal be dismissed or that the patent be maintained on the basis of one of auxiliary requests 1 to 39 filed with the reply to the statement of grounds of appeal.

IV. Claim 1 of the main request reads as follows.

"An integrated electrode structure comprising:
a catheter shaft (107, 824) comprising a proximal end and a distal end, the catheter shaft (107, 824) defining a catheter shaft longitudinal axis (aa, a'a');
a flexible tip portion (110, 500, 540, 660, 700, 740, 780, 822) located adjacent to the distal end of the catheter shaft (107, 824) and adapted to conform to a tissue, the flexible tip portion (110, 500, 540, 660, 700, 740, 780, 822) comprising
a flexible framework formed from a planar substrate;
a first inboard arm (104, 164, 230, 310, 506, 554, 670, 708), second inboard arm (105, 165, 231, 311, 508, 546, 672, 710), first outboard arm (103, 164, 312, 504, 542, 582, 706), and second outboard arm (106, 313, 510, 548, 588, 674, 712), each of the first and second inboard

and outboard arms defining a planar top surface and a planar bottom surface, the bottom surface being parallel with the top surface;
and
a first planar array of microelectrodes (102, 146-1, 146-2, 146-3, 163-1, 163-2, 163-3) patterned onto each of the top surfaces of the inboard and outboard arms and a second planar array (102, 146-1, 146-2, 146-3, 163-1, 163-2, 163-3) of microelectrodes patterned onto each of the bottom surfaces of the inboard and outboard arms;
wherein the first array of microelectrodes (102, 146-1, 146-2, 146-3, 163-1, 163-2, 163-3) is parallel with the second array of microelectrodes (102, 146-1, 146-2, 146-3, 163-1, 163-2, 163-3)."

Claim 1 of auxiliary requests 1 to 39 includes at least all the features of claim 1 of the main request.

V. The arguments of the appellant can be summarized as follows.

Main request - Article 76(1) EPC

The parent application did not directly and unambiguously disclose a first and a second array of microelectrodes as defined in claim 1 of the main request. Paragraph [0182] described the embodiment of figures 19A and 19B disclosing a flexible array of microelectrodes, rather than two arrays. An array had a technical meaning, and the first array would have to be somehow distinguishable from the second array. No such distinction was disclosed in the parent application. Even if the plurality of microelectrodes could be "conceptually" subdivided into two groups (as argued by the respondent), the specific subdivision into a first

array comprising all the microelectrodes on the top surface of the arms and a second array comprising all the microelectrodes on the bottom surface of the arms could not be directly and unambiguously derived from the parent application.

The term "patterned" used in claim 1 was not synonymous with "disposed" and did not simply mean "arranged in a pattern" as considered by the opposition division and the respondent. The term "patterned" rather related to a particular way of depositing the microelectrodes on the surfaces. The parent application disclosed patterned microelectrodes only in the specific embodiment of claim 4, stating that "each of the plurality of microelectrodes is patterned onto the flexible framework". However, by its dependency to claims 1 and 2, this claim required that the patterned microelectrodes were longitudinally aligned in rows parallel to the catheter shaft longitudinal axis and each of the microelectrodes was coupled with a respective one of a plurality of conductive traces. The isolation of the term "patterned" from this embodiment constituted an unallowable intermediate generalisation.

Hence, claim 1 included subject-matter extending beyond the content of the parent application as originally filed, thereby infringing Article 76(1) EPC.

VI. The arguments of the respondent can be summarized as follows.

The meaning of the word "array" was "a large group of things". The recitation in claim 1 of the first and second arrays of microelectrodes simply indicated that the electrodes could conceptually be divided into two groups: those on the top surface and those on the

bottom surface. The microelectrodes on the top surface formed an array (there was a group of microelectrodes on the top surface that had been positioned in a particular way) and the microelectrodes on the bottom surface formed an array (there was a group of microelectrodes on the bottom surface that had been positioned in a particular way). The conceptual subdivision of the microelectrodes based on whether they were on the top surface or the bottom surface did not change the technical teaching conveyed by the parent application.

The ordinary meaning of the verb "to pattern" was "to form a pattern on something". Hence, the term "patterned onto" as used in claim 1 meant that the microelectrodes were disposed in a pattern, i.e. as an array, on the top and bottom surfaces of the arms. This term did not relate to a method of depositing the microelectrodes on the surface. It could be derived directly and unambiguously from figure 19A and paragraph [0182] of the parent application that the microelectrodes were disposed on the arms, whereby a pattern was formed. Thus, it was not necessary to refer to claim 4 of the parent application and to the question whether claim 4 disclosed patterned microelectrodes only in combination with other features. Moreover, the term "patterned" was not intrinsically linked to the presence of conductive traces, as in paragraph [0091] the conductive traces were presented as optional features.

Hence, claim 1 did not infringe Article 76(1) EPC.

Reasons for the Decision

1. Subject-matter of the patent

The patent relates to a mapping catheter for cardiac medical procedures. The catheter has a flexible tip portion that forms a flexible array of microelectrodes 502 in a planar or "paddle" configuration. The planar array comprises four side-by-side, longitudinally extending arms which can form a flexible framework. The microelectrodes are disposed on planar top and bottom surfaces of the arms (paragraph [00182] and Figure 19A of the patent).

The catheter can be used in diagnostic, therapeutic, and/or mapping procedures. For example, the microelectrodes can be used for electrophysiological studies, pacing, cardiac mapping, and ablation.

2. Main request - added subject-matter

2.1 The patent is based on a divisional application of the parent application published as WO 2017/070559 A1.

2.2 It was in dispute whether there is direct and unambiguous support in the parent application as filed for the features:

- the flexible tip portion comprises a first array of microelectrodes on each of the top surfaces of the arms and a second array of microelectrodes on each of the bottom surfaces of the arms (referred to as objection (c) in the Board's preliminary opinion), and

- the microelectrodes are patterned onto the surfaces (referred to as objection (d) in the Board's

preliminary opinion).

2.3 The parent application does not directly and unambiguously disclose a first and a second array of microelectrodes.

The parent application rather discloses that all the microelectrodes form a flexible array which comprises the four arms (paragraphs [0082], [00182]). Hence, as can also be derived from claim 28 of the parent application, both the microelectrodes on the top surfaces and the microelectrodes on the bottom surfaces of the arms belong to one and the same array.

The respondent argued that an array could be understood as a group of things. However, even if this is accepted, it has to be discernable that the things belong to one group. If there are two separate arrays as defined in claim 1 of the main request, the separate arrays have to be identifiable. No such distinction is derivable from the parent application.

Contrary to the respondent's view, the arrangement of microelectrodes cannot be conceptually subdivided into two arrays. That the microelectrodes on the top surface belong to one group, namely the first array, and the microelectrodes on the bottom surface belong to another group, namely the second array, inherently introduces new technical information which cannot be derived directly and unambiguously from the parent application.

2.4 The parent application does not directly and unambiguously disclose that the microelectrodes are patterned onto the surfaces.

The parent application refers to patterned

microelectrodes only in claim 4 specifying that "each of the plurality of microelectrodes is patterned onto the flexible framework". However, this does not support the respondent's view of the term "patterned" meaning that a pattern of microelectrodes is formed, as a single microelectrode cannot form a pattern.

In the description of the parent application the term "patterned" is used only in connection with "patterned conductive traces" which are disposed on the flexible framework (see, for example, paragraphs [0091], [0099] and [0100]). In this context, this term relates to a particular way of depositing the microelectronic elements on the surfaces via processes such as tracing, masking and etching, as described in paragraph [0099] (last but one sentence).

Hence, the features of claim 1 referring to an array of microelectrodes being patterned onto a surface have to be interpreted in such a way that the microelectrodes are disposed on the surfaces by a certain process.

As correctly argued by the appellant, claim 4 of the parent application requires, by dependency to claims 1 and 2, that the patterned microelectrodes are longitudinally aligned in rows parallel to the catheter shaft longitudinal axis and each of the microelectrodes is coupled with a respective one of a plurality of conductive traces, thus defining inextricably related aspects of the microelectrodes' arrangement and disposal. The omission of these features in claim 1 of the main request constitutes an unallowable intermediate generalisation.

2.5 Hence, claim 1 includes subject-matter extending beyond the content of the parent application as originally filed and therefore does not meet the requirements of Article 76(1) EPC.

3. Auxiliary requests - added subject-matter

Claim 1 of all auxiliary requests includes the features "a first planar array of microelectrodes patterned onto each of the top surfaces of arms" and "a second planar array of microelectrodes patterned onto each of the bottom surfaces of the arms". Hence, at least the first objection above was not resolved by any of the auxiliary requests.

Consequently, none of the auxiliary requests meets the requirements of Article 76(1) EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The patent is revoked.

The Registrar: The Chairman:

G. Magouliotis A. Martinez Möller

Decision electronically authenticated