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D E C I S I O N
of 16 March 2004

Case Number: T 0916/03 - 3.2.2

Application Number: 95920465.2

Publication Number: 0788329

IPC: A61B 5/05

Language of the proceedings: EN

Title of invention:

Impedance imaging devices and multi-element probe

Applicant:

TRANSSCAN RESEARCH & DEVELOPMENT CO. LTD.

Opponent:

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Headword:

-

Relevant legal provisions:

EPC Art. 84, 123(2)

Keyword:

"Clarity (yes), new subject-matter (no)"

Decisions cited:

-

Catchword:

-



Case Number: T 0916/03 - 3.2.2

D E C I S I O N
of the Technical Board of Appeal 3.2.2
of 16 March 2004

Appellant: TRANSSCAN RESEARCH & DEVELOPMENT CO. LTD.
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IL-10550 Migal Haemek (IL)

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Decision under appeal: Decision of the Examining Division of the
European Patent Office posted 15 April 2003
refusing European application No. 95920465.2
pursuant to Article 97(1) EPC.

Composition of the Board:

Chairman: W. D. Weiß
Members: S. S. Chowdhury
A. Pignatelli

Summary of Facts and Submissions

I. This appeal is against the decision of the examining division dated 15 April 2003 to refuse European patent application No. 95 920 465.2.

The ground of refusal was that claim 1 of the main and auxiliary requests was not clear, and the claims of the second auxiliary request were not allowable under Article 123(2) EPC.

II. On 3 June 2003 the appellant (applicant) lodged an appeal against the decision, and paid the prescribed fee on 6 June 2003. On 13 August 2003 a statement of grounds of appeal was filed.

III. The appellant requests that the decision under appeal be set aside and that the application proceed on the basis of claims 1 to 21 filed with letter dated 3 February 2004. Oral proceedings were requested on an auxiliary basis.

IV. Claim 1 of this request reads as follows:

"Apparatus for impedance imaging of a breast of a body comprising: a multi-element probe comprising a plurality of sensing elements and adapted for mounting on one side of a breast; a source electrode adapted for mounting on the body; a first electrode adapted for mounting on the body, nearer the multi-element probe than the source electrode; and a source of electrical energy which provides a voltage between the source electrode and at least one element of the probe.".

Claims 2 to 21 are dependent on claim 1.

Reasons for the Decision

1. The appeal is admissible.

2. Both the questions of clarity and extension of subject-matter depend on the interpretation of the claims having regard to the supporting description, so that the Board's understanding of the relevant parts of the application are set out first.

As the examining division has stated, present claim 1 is based on claim 44 of the application as originally filed, which is an apparatus claim whose method counterpart is claim 59. The supporting disclosure for claim 44 is to be found on page 44, line 31 onwards with reference to Figure 16, which shows a breast 160 which is imaged by a probe 270, for example, the probe of Figures 1 to 3 or Figures 6A and 6B (page 44, lines 34 and 35).

The system according to this invention measures the impedance between the individual sensing elements of the probe and some reference point (typically the signal source point) at some other place on the body, and to avoid distortion in the field lines, the reference point is typically placed far from the sensor array (page 45, last two paragraphs). Furthermore, to reduce the baseline impedance contributed to the local impedance image by tissue between the remote signal source and the region near the probe, an additional

reference electrode is placed on the patient's body relatively near the multi-element probe.

Referring to Figure 16, this means that in this embodiment the imaging probe 270 (which may be the probe Figures 6A and 6B) is applied to the front of the breast, a signal source electrode is placed on the body remote from the breast, for example at the arm, and an additional reference electrode is placed nearer to the breast than the signal source electrode, for example at the front of the shoulder of the patient, in order to reduce the baseline impedance caused by intervening tissue.

It is to be noted that the reference electrode must be placed nearer to the breast than the signal source electrode if it is to perform the required function of reducing the baseline impedances, as described on page 46.

As described on page 46, last paragraph, this embodiment may operate with a single probe and does not require an electrode to be placed on a side of the breast substantially opposite the (multi-element) probe as defined in original claim 44. If, on the other hand, the probe used is the probe of Figures 1 to 3, as stated on page 44, lines 34 and 35, then only one of the multi-element probes 22 or 24 would be used since, given the position of the probe shown as 270 in Figure 16, it is impossible to position a second multi-element probe opposite the probe 270 shown in a manner so as to sandwich the breast therebetween. This is consistent with the fact that the imaging head of Figures 1 to 3 may possess only one multi-element

probe, as stated on page 23, lines 31 and 32, and page 48, first complete paragraph describes the operation with one multi-element probe followed by operation with the other multi-element probe, which shows that an image may be obtained with only one probe.

3. *Article 84 EPC*

Claim 1 defines a source electrode and a first electrode. Since the first electrode is stated to be nearer to the probe than the source electrode, the source electrode and the first electrode of claim 1 must be interpreted respectively as the remote electrode mentioned on page 45, lines 25 to 36 and the additional, nearer reference electrode mentioned on page 46, lines 26 and 27. This interpretation renders the claim entirely consistent with and supported by the description.

The expressions "adapted for mounting on one side of a breast" and "adapted for mounting on the body nearer the multi-element probe than the source electrode" are allowable in the present case. The examining division had objected to the use of a similar expression in an earlier version of the claim, namely "adapted for mounting on the body nearer the multi-element probe than the source electrode", saying that it defined a use of the device rather than a structural feature and rendered the apparatus claim unclear.

The Board sees no objection to the use of these expressions since they merely describe how the apparatus is used and may be ignored for the purposes

of assessing the scope of the claim, apart from the structural requirement that the electrodes must be suitable for the stated purpose. These expressions may be seen as defining features that are useful for facilitating the understanding of the claim. This is akin to an expression such as "an electrode for taking ECGs of the brain", which gives some information as to the nature and use of the electrode, and need not be objectionable in the context.

4. *Article 123(2) EPC*

As discussed in point 2. above, the application as originally filed disclosed, with reference to Figure 16 thereof, apparatus for impedance imaging of a breast of a body, comprising a multi-element probe, a source electrode adapted for mounting on the body, a first electrode adapted for mounting on the body nearer the multi-element probe than the source electrode, and a source of electrical energy which provides a voltage between the source electrode and at least one element of the probe, wherein no electrode is required to be placed on a side of the breast substantially opposite the multi-element probe. The omission of this feature, which was defined in original claim 44, is supported by the original disclosure, accordingly.

The examining division's argument that the application supports only the use of a device having a mammography-like construction disclosed for example in Figure 2 of the application is not tenable in view of the above facts, and for the further reason that the terminology of original claim 44 required a multi-element probe adapted for mounting on one side of the breast and an

electrode adapted for mounting on a side of the breast opposite the probe. If the intention had been to define a mammography-like construction then the claim would have defined two multi-element probes adapted for mounting on the breast opposite each other.

5. For the reasons given above claim 1 meets the requirements of Articles 84 and 123(2) EPC.

Given the above considerations the auxiliary request for oral proceedings need not be entertained.

Order

For these reasons it is decided that:

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

The Registrar:

The Chairman:

V. Commare

W. D. Weiß