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Datasheet for the decision of 1 April 2014

Case Number: T 1310/13 - 3.2.02

Application Number: 01991471.2

Publication Number: 1343411

IPC: A61B1/313, A61B1/07, A61B1/018, A61B5/00, G02B21/00, G02B23/24

Language of the proceedings: EN

Title of invention:
SPECTRALLY ENCODED MINIATURE ENDOSCOPIC IMAGING PROBE

Applicant:
THE GENERAL HOSPITAL CORPORATION

Headword:

Relevant legal provisions:
EPC Art. 123(2)
EPC R. 115(2)
RPBA Art. 15(3)

Keyword:
Amendments - added subject-matter (yes)
Oral proceedings - held in absence of appellant

Decisions cited:

Catchword:

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Case Number: T 1310/13 - 3.2.02

D E C I S I O N
of Technical Board of Appeal 3.2.02
of 1 April 2014

Appellant: (Applicant)	THE GENERAL HOSPITAL CORPORATION 55 Fruit Street Boston, MA 02114 (US)
Representative:	Lawrence, John Barker Brettell LLP 100 Hagley Road Edgbaston Birmingham B16 8QQ (GB)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 14 January 2013 refusing European patent application No. 01991471.2 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman: E. Dufrasne
Members: D. Ceccarelli
C. Körber

Summary of Facts and Submissions

I. The applicant has appealed the Examining Division's decision, dispatched on 14 January 2013, to refuse European patent application No. 01 991 471.2.

II. In the impugned decision, the Examining Division held that the main request and the first and second auxiliary requests did not comply with Article 123(2) EPC. Further, it did not admit a third and a fourth auxiliary request into the proceedings under Rule 137(3) EPC.

III. The notice of appeal was received on 14 March 2013 and the appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 23 May 2013.

IV. The Board summoned the appellant to oral proceedings and provided its provisional opinion in a communication dated 21 January 2014.

V. The appellant informed the Board that it would not attend the oral proceedings. These were held on 1 April 2014 in the appellant’s absence.

VI. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the 5th auxiliary request filed with letter dated 23 May 2013.

VII. Claim 1 of the appellant’s request reads as follows:

"An endoscopic probe (10) for spectrally encoding a sample, comprising:

a lens element (32) configured to provide there through electro-magnetic radiation;

a dispersive arrangement (34, 36, 38) configured to receive at least one portion of the electro-magnetic radiation and forward a dispersed radiation to at least one section of the sample (30) from which information is being obtained; and

means for scanning an image formed by the lens element (32) of the at least one section of the sample (30),

wherein the electro-magnetic radiation is provided by a wavelength tunable light source emitting a monochromatic radiation whose wavelength is scanned with time."

VIII. The appellant's arguments, provided in writing, are summarised as follows:

The subject-matter of claim 1 had already been discussed with the first examiner of the Examining Division by telephone on 8 November 2012, whereupon it had been indicated that it would be allowable since it met the requirements of the EPC.

Also the Board, in its communication dated 21 January 2014, had indicated that claim 1 of the 5th auxiliary request was patentable.

Therefore, the 5th auxiliary request was in a form allowable for grant.

Reasons for the Decision

1. The appeal is admissible.

2. Duly summoned, the appellant had informed the Board that it did not intend to attend the oral proceedings. The Board decided to continue the proceedings without that party according to Rule 115(2) EPC and to hold the oral proceedings as provided for in Article 15(3) RPBA. Accordingly, the appellant is treated as relying only on its written case.

3. The claimed invention relates to an endoscopic probe, especially for examining locations of the body which are inaccessible to conventional endoscopes, mainly because of the size of the latter. Specific applications include for example fetoscopy, paediatric endoscopy, coronary angioscopy, mini-laparoscopy, mammary ductoscopy, lacrimal ductoscopy and small joint visualisation (page 4, lines 13 to 16 of the application as filed).

   In particular, the present application identifies several problems in connection with conventional endoscopes composed of fibre-optic imaging bundles. In such endoscopes, individual optical fibres are incorporated in an imaging bundle, each providing a pixel of the image obtained by the endoscope. Each optical fibre is used to convey light, illuminate the place of interest, receive the reflected light coming from the place of interest and feed said light to an imaging device (for example a CCD camera). The resolution of such endoscopes is limited by the size of the individual optical fibres, which, according to the present application, could not be smaller than 10 µm in

diameter. The fill factor, i.e. a measure of the dead space between the single fibres, which is stated to be about 85%, also limits the resolution. Finally, crosstalk occurring between the single fibres in a bundle reduces the signal-to-noise level.

To address these problems, the present application describes a miniature endoscope with a single wave guide (possibly an optical fibre) and a system utilising spectral encoding. In such a system, electromagnetic radiation is fed to a dispersive element such as a grating, from which the radiation is directed towards a place of interest with different angles dependent on the wavelength. The result is that, if radiation with a certain bandwidth reaches a point of the grating, due to the different exit angles from the grating, a line segment is irradiated on the place of interest. The radiation reflected from the place of interest passes through the grating in the opposite direction and is fed back through the wave guide to an imaging device for detection. Some kind of modulation of the electromagnetic radiation permits the point of the segment from which the detected radiation originates to be distinguished. A mechanical scanning in a direction different from that of the line segment permits a 2-dimensional image of the place of interest to be obtained with a single optical fibre. The resolution will then depend on the grating and can be much higher than when a bundle of individual fibres is used. In particular, the claimed invention proposes to use a monochromatic radiation whose wavelength is scanned with time.

4. *Extension of subject-matter (Article 123(2) EPC)*

4.1 Claim 1 defines an endoscopic probe generally comprising "means for scanning an image".

The independent claims of the application as filed which defined an endoscopic probe comprising "means for scanning" are claims 1 and 27.

However, these claims 1 and 27 defined "means for scanning [a ...] sample with [...] focussed energy in direction different from [a ...] wavelength encoded axis". The application as filed clearly explains that it is due to the presence of a wavelength-encoded axis and of a scanning in the different direction that two-dimensional images can be obtained with an endoscopic probe (page 8, line 29, to page 9, line 7). Moreover, the description as filed explicitly discloses that "in order to obtain a two-dimensional image, one **must** perform a transverse scan in the conjugate direction" of the spectrally encoded scan line, which "can be implemented in many different embodiments, but **all** include a means of moving the spectrally encoded scan line" (page 9, lines 14 to 19 – emphasis added).

Leaving out the definition of a wavelength-encoded axis and of the means for scanning being capable of performing a scan in a direction different from that of the wavelength-encoded axis from the subject-matter of claim 1 presents the reader with the information that this feature is merely optional, in contrast with the disclosure of the application as filed.

Hence, subject-matter is introduced which extends beyond the content of the application as filed, in breach of Article 123(2) EPC.

4.2 The appellant's argument that the Board, in its communication dated 21 January 2014, had indicated that the subject-matter of claim 1 was patentable cannot be followed.

In that communication the Board explicitly formulated an objection under Article 123(2) EPC to the omission of the above-mentioned definition in claim 1 of the then pending main request (point 1.1.3 of the communication) and further stated that "[a]t least some of the objections under Article 123(2) [...] EPC as formulated with respect to the main request also apply to the [...] fifth auxiliary request" (point 2 of the communication). The objection in question was further offered as a point to be considered during the oral proceedings.

From the documents on file it cannot be asserted that the Examining Division had indicated that the 5th auxiliary request would be allowable either. In the minutes of the telephone conversation of 8 November 2012, referred to by the appellant, the minute writer simply referred to some features present in claim 1 of the 5th auxiliary request, but did not state that the Examining Division considered the claim as a whole to be in order for grant. On the contrary, it was explicitly indicated that claim 1 appeared to violate Article 123(2) EPC (point 5 of the minutes). Furthermore, preliminary opinions of the Examining Division in the procedure which led to the impugned decision are not binding in the appeal procedure before the Board.

5. At least for the above-mentioned reason, the application does not meet the requirements of the EPC.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

D. Hampe E. Dufrasne

Decision electronically authenticated