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**Datasheet for the decision
of 9 February 2022**

Case Number: T 2488/17 - 3.2.02

Application Number: 10192818.2

Publication Number: 2457497

IPC: A61B3/00, A61F9/00, A61B3/113,
A61B3/13, A61B3/15, G06T7/00

Language of the proceedings: EN

Title of invention:
Method and apparatus for multi-level eye registration

Applicant:
Alcon Inc.

Headword:

Relevant legal provisions:
EPC Art. 53(c), 54, 84, 111(1), 123(2)
RPBA 2020 Art. 11, 12(2)

Keyword:
Exceptions to patentability - (no)
Claims - clarity (yes)
Amendments - added subject-matter (no)
Remittal - (yes)

Decisions cited:

Catchword:



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Case Number: T 2488/17 - 3.2.02

D E C I S I O N
of Technical Board of Appeal 3.2.02
of 9 February 2022

Appellant: Alcon Inc.
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Representative: Katérle, Axel
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 22 May 2017
refusing European patent application No.
10192818.2 pursuant to Article 97(2) EPC**

Composition of the Board:

Chairman M. Alvazzi Delfrate
Members: D. Ceccarelli
C. Schmidt

Summary of Facts and Submissions

- I. The applicant has appealed against the Examining Division's decision, posted on 22 May 2017, to refuse European patent application No. 10 192 818.2. Claim 1 of the main request and of auxiliary requests 1 to 5 was considered to be seeking protection for methods for treatment of the human body by surgery practised on the human body. Auxiliary requests 6 and 7 were not allowed on the grounds of there being added subject-matter in claim 1.

- II. In the statement of grounds of appeal, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of one of the main request and auxiliary requests 1 to 5, all of which were filed with the statement of grounds of appeal. As an auxiliary measure, oral proceedings were requested.

- III. The Board summoned the appellant to oral proceedings and provided its preliminary opinion in a communication dated 11 May 2021. The Board raised objections against the main request and auxiliary requests 1 to 4, but explained that auxiliary request 5 appeared to overcome the objections of exception to patentability and added subject-matter, on which the impugned decision was based. The board envisaged remitting the case to the Examining Division for consideration of auxiliary request 5.

- IV. By letter dated 21 December 2021, the appellant withdrew the main request and auxiliary requests 1 to 4. It also withdrew its request for oral proceedings on the condition that the Board maintained its preliminary

view on auxiliary request 5 and remitted the case accordingly.

V. Claim 1 of auxiliary request 5 reads as follows:

"An eye registration system comprising:

 a first diagnostic device;

 a surgery device, and

 a computing device,

the eye registration system being configured for:

 obtaining a first initial reference eye image by the first diagnostic device of the eye registration system and defining a reference coordinate system, wherein the eye has no suction ring being placed on it when said first image is taken;

 obtaining a second eye image by the surgery device of the eye registration system, said second eye image being obtained in a pre-surgery phase, wherein the eye has no suction ring being placed on it when said second image is taken;

 performing, by the computing device of the eye registration system, a first registration between said first eye image and said second eye image to obtain a first registration result;

 obtaining a third eye image by said surgery device, said third eye image being obtained after a suction ring has been placed on the eye;

 performing, by the computing device, a second registration between said second eye image and said third eye image to obtain a second registration result;

 combining, by the computing device, said first and second registration results to obtain a combined registration result to thereby obtain a registration between said initial reference eye image obtained by said diagnostic device and said third eye image obtained by said surgery device after the suction ring

has been placed on the eye, wherein said first eye image taken by said diagnostic device and said third eye image taken by said surgery device are taken under significantly different eye conditions which can negatively affect a direct registration between said first eye image and said third image, wherein

the computing device is configured to perform the registration by identifying one or more eye features in the two eye images, which are to be registered to thereby determine the coordinate relationship between the two pictures;

the computing device is configured to use limbus and sclera features for registering the first initial reference eye image taken by said diagnostic device and the second eye image taken by said surgery device;

the computing device is configured to use iris and/or pupil features for registering the second eye image taken by said surgery device and the third eye image taken by said surgery device."

VI. The appellant's arguments, where relevant to the present decision, can be summarised as follows.

Auxiliary request 5 comprised only one system claim, which corresponded to claim 4 of auxiliary request 6 in the examination proceedings. The examining Division had raised unjustified clarity and novelty objections against this claim in an *obiter dictum*.

Reasons for the Decision

1. The invention relates to an eye registration system comprising a first diagnostic device, a surgery device and a computing device.

Eye registration is performed to determine a coordinate system for an eye, typically with respect to a suction ring applied to the eye. The coordinate system is then used in ophthalmic surgery to treat the eye with automatic means, which achieve treatment positioning precision which is far greater than can be achieved manually (page 1, lines 21 to 24, of the application as filed). A typical treatment involving the placement of a suction ring is laser surgery, for example to correct myopia, hyperopia or astigmatism.

According to claim 1 of auxiliary request 5, the system is configured for obtaining a first initial reference eye image by the first diagnostic device and defining a reference coordinate system, with the eye having no suction ring placed on it when the first image is taken.

The system is also configured for obtaining a second eye image, in a pre-surgery phase, by the surgery device, the second eye image being obtained with the eye having no suction ring being placed on it.

The system is also configured for performing, by the computing device, a first registration between the first eye image and the second eye image to obtain a first registration result.

The system is also configured for obtaining a third eye image by the surgery device, the third eye image being obtained after a suction ring has been placed on the eye.

The system is also configured for performing, by the computing device, a second registration between the second eye image and the third eye image to obtain a

second registration result.

Finally, the system is also configured for combining, by the computing device, the first and second registration results to obtain a combined registration result and to obtain a registration between the initial reference eye image obtained by the diagnostic device and the third eye image obtained by the surgery device after the suction ring has been placed on the eye. The registration is performed by identifying various eye features in the eye images.

Since the first eye image taken by the diagnostic device and the third eye image taken by the surgery device are taken under significantly different eye conditions, performing multiple registration steps, which are then combined, provides a more accurate determination of a coordinate system for the eye and its constituent parts (page 4, lines 18 to 20, of the application as filed). This may increase accuracy and improve the performance of a subsequent automated treatment of the eye.

2. Auxiliary request 5 comprises a single apparatus claim, essentially based on claim 4 of former auxiliary request 6, which was considered during the oral proceedings before the Examining Division. The Examining Division did not base the impugned decision on any objection against claim 4 of former auxiliary request 6.

Auxiliary request 5 was filed with the statement of grounds of appeal and clearly overcomes the objection of exception to patentability under Article 53(c) EPC, on which the impugned decision was based, as it does not comprise a method claim.

Auxiliary request 5 also overcomes the objection of added subject-matter under Article 123(2) EPC, on which the impugned decision was also based. This objection was directed to the presence of a disclaimer in a method claim. No disclaimers are present in claim 1 of auxiliary request 5.

Hence, auxiliary request 5 overcomes all the objections on which the impugned decision was based.

3. In an obiter dictum (points 15 and 16 of the impugned decision), the Examining Division held that some features of claim 4 of former auxiliary request 6 were not clear and that the remaining features of the claim lacked novelty.

The Board notes that the impugned decision was not based on objections under Articles 54 and 84 EPC.

Moreover, it is the Board's view that the clarity concerns of the Examining Division are not justified.

Claim 1 of auxiliary request 5 is directed to an eye registration system configured, *inter alia*, for obtaining images of the eye with or without a suction ring being placed on it.

The Examining Division noted that the suction ring being placed on the eye was not part of the claimed system. However, this is not decisive, since the suction ring is only mentioned in order to define functional features which the claimed eye registration system must be suitable for achieving. Partly defining a claim by functional features is common practice and does not compromise the clarity of the claim in the

present case.

As regards the reference in the claim to "significantly different eye conditions which can negatively affect a direct registration", which was commented upon by the Examining Division, this is merely explanatory wording relating to the presence or not of the suction ring. It is the presence or the absence of the suction ring which, inherently, affects the eye conditions and the direct registration as defined in the claim.

In its analysis of the novelty of the subject-matter of claim 1 of auxiliary request 5, the Examining Division disregarded the features which it had deemed unclear. Hence, the Examining Division's finding of a lack of novelty is based on false premises. Under these circumstances, it is not appropriate for the Board to review this finding. The examination of novelty is to be performed anew.

4. The grounds on which the decision under appeal was based have been reviewed by the Board in view of the respective requirements of the EPC. The Examining Division did not deal with other requirements of the EPC, in particular in relation to novelty and inventive step, the consideration of which by two instances is appropriate.

For these reasons, and in view of the primary object of the appeal proceedings being to review the decision under appeal in a judicial manner (Article 12(2) RPBA 2020), the Board holds that special reasons within the meaning of Article 11 RPBA 2020 are present for remitting the case to the Examining Division for further prosecution, in accordance with Article 111(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:



D. Hampe

M. Alvazzi Delfrate

Decision electronically authenticated