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**Datasheet for the decision  
of 2 August 2010**

**Case Number:** T 0301/10 - 3.4.02

**Application Number:** 05803704.5

**Publication Number:** 1836487

**IPC:** G01N 29/00

**Language of the proceedings:** EN

**Title of invention:**

Interactive ultrasound-based depth measurement for medical applications

**Applicant:**

Jetguide Ltd.

**Headword:**

-

**Relevant legal provisions:**

EPC Art. 94(3)

**Relevant legal provisions (EPC 1973):**

EPC Art. 56, 96(2)

EPC R. 67

**Keyword:**

"Inventive step (yes)"

"Refusal of application after a single communication -  
procedural violation (no)"

**Decisions cited:**

T 0162/82, T 0300/89, T 0726/04

**Catchword:**

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Case Number: T 0301/10 - 3.4.02

**D E C I S I O N**  
of the Technical Board of Appeal 3.4.02  
of 2 August 2010

**Appellant:** Jetguide Ltd.  
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**Decision under appeal:** Decision of the Examining Division of the  
European Patent Office posted 26 November 2009  
refusing European patent application  
No. 05803704.5 pursuant to Article 97(2) EPC.

**Composition of the Board:**

**Chairman:** A. G. Klein  
**Members:** F. J. Narganes-Quijano  
B. Müller

## Summary of Facts and Submissions

I. The appellant (applicant) has lodged an appeal against the decision of the examining division refusing European patent application No. 05803704.5 (based on the International application No. PCT/IL2005/001210 published with the International publication No. WO 2006/072933).

In its decision the examining division referred to documents

D1 : US-A-2002/0120197

D2 : US-A-5755571

and held that the subject-matter of claim 1 then on file did not involve an inventive step in view of the ultrasonic detection device disclosed in document D1 and the teaching of document D2 relating to the improved acoustic coupling characteristics associated with the use of water as an ultrasonic transmitting medium (Article 56 EPC 1973).

II. With the statement setting out the grounds of appeal the appellant requested setting aside of the decision and the grant of a patent.

The appellant also requested the reimbursement of the appeal fee on the grounds that the decision under appeal was issued prematurely and consequently amounted to a procedural violation (as also maintained in its letter dated 1 March 2010 addressed to the "Director General and Directorate-General 3 - T0301/10-342").

The appellant further requested that no decision to uphold the refusal of the application be issued without him being given an opportunity to be heard.

- III. In a communication the Board drew the attention of the appellant to some deficiencies in the description and gave a preliminary opinion on the issue of the request for reimbursement of the appeal fee.

The Board also invited the appellant to clarify whether its request for an opportunity to be heard also encompassed oral proceedings under Article 116 EPC 1973 possibly for the sole purpose of discussing the alleged procedural violation.

- IV. In reply to the Board's communication the appellant filed with its letter dated 22 June 2010 amended pages 1 to 11 of the description and a set of claims 1 to 5 replacing the description and the set of claims on file and requested the grant of a patent on the basis of these replacement application documents together with the remaining application documents on file, i.e. drawing sheets 1/7 to 3/7 and 5/7 to 7/7 of the application as published and amended drawing sheet 4/7 filed with the letter dated 18 September 2008.

As regards the request for reimbursement of the appeal fee, the appellant contested the preliminary view of the Board on this issue and stated that, having already put its case in writing, no oral proceedings were requested for this issue alone.

V. Claim 1 of the appellant's request reads as follows:

"A device (81) for determining the internal structure of a bone along a path directed into the bone, the device comprising:

a nozzle (87) fluidically connected to a liquid reservoir (50) for providing a liquid jet directed at the bone in the direction of the path;

an ultrasonic transducer (68) for generating ultrasonic waves through the liquid jet and for detecting echoes traversing back through the jet of the ultrasonic waves caused by changes in the acoustical impedance in the bone characterizing changes in the structure of the bone along the path; and

an analyzer (37) for interpreting the echoes into meaningful information relating to the location of the structural changes along the path."

The appellant's request also includes dependent claims 2 to 5 all referring back to claim 1.

VI. The arguments submitted by the appellant in support of its requests can be summarized as follows:

*Inventive step*

The examining division assumes without justification that the acoustic coupling in document D1 is in need of improvement. In document D2 there is a need for water because ultrasounds do not travel well through air. However, sound travels very well through solids and the transducer of document D1 is in direct contact with the bone. It is therefore difficult to see why there should be any air gap between the transducer and the bone that

would benefit from the presence of a couplant such as water. In addition, document D2 is only concerned with sound reflections from within the pocket flooded with water and all that is being measured is the depth of this pocket; there is no measure of the structure of the bone or tooth. By contrast, in the claimed invention it is sound reflections within the bone that are under investigation and the water jet is only used as the conduit for transmitting the ultrasounds to and from the bone. In any case, the combination of documents D1 and D2 would not produce a device as claimed.

None of the prior art documents suggests the use of a liquid jet as an acoustic probe or guide acoustically coupled to the bone at one end and to a transducer at its other end and that can direct acoustic energy to the bone area to be analysed using ultrasonic waves travelling through the jet.

*Procedural violation*

Article 96(2) EPC requires that the applicant be given ample opportunity to overcome the objections raised. Therefore, a decision to refuse should only be issued when there is no further argument to be considered regarding patentability and when there is no likely amendment that would render the claims patentable. The last response contained serious attempts at overcoming all the objections raised by the examining division and appears to have been successful in every respect but one.

The whole point of the invention is that it relies on echoes travelling through the water jet. When this point was apparently given little weight in the first communication, it was emphasized by the recitation of "traversing back through the jet". Even if the examining division regarded it as an amendment of a "purely linguistic nature", it should have re-examined the prior art references in respect of the amended feature, it being noted that none of the references discloses this feature.

The response did not contain the usual request for oral proceedings because it was felt that the application was in order for grant. That belief was entirely justified for the reasons subsequently set out in the statement of grounds of appeal. The fact that the examining division disagreed with the arguments presented by the appellant, or did not understand them, did not entitle it to refuse the application without giving the appellant a further opportunity to explain its position regarding inventive step.

The cited prior art does not provide an adequate reason to restrict claim 1, but in any case there is clearly a possibility to restrict the claimed invention. In view of this, one can hardly maintain that the possibility for amendment has been exhausted during the prosecution of the application. The expression "as often as necessary" in Article 96(2) EPC is synonymous with "as many times as necessary", and "often" therefore itself implies more than once; in addition, "necessary" in this context means necessary for the applicant to present its case in full and necessary for the examining division to arrive at a full understanding of

the invention so that it can make an informed decision. This is not a subjective test of whether the examining division thought it understood the invention, but an objective test of whether it did in fact have a full understanding of the invention. The fact that the examining division maintained the same objection shows that it did not understand the arguments that had been presented to it.

### **Reasons for the Decision**

1. The appeal is admissible.
  
2. *Amendments*

The Board is satisfied that the application documents as amended according to the present request of the appellant comply with the formal requirements of the EPC, and in particular with those set forth in Article 123(2) EPC. As a matter of fact, the examining division already found that the set of claims amended according to the request considered in the contested decision and corresponding, apart from minor amendments of a formal nature, to the present set of claims satisfied the requirements of Article 123(2) EPC. Furthermore, the description has been revised and brought into conformity with the invention defined in the claims as presently amended and the pertinent prior art has been appropriately acknowledged in the introductory part of the description (Article 84, second sentence and Rule 27(1), paragraphs (b) and (c) EPC 1973).



3. *Inventive step*

3.1 In its decision the examining division held that the subject-matter of claim 1 did not involve an inventive step over the disclosure of documents D1 and D2. The appellant has not disputed the finding of the examining division that document D1 constitutes the closest state of the art. This document discloses a device for determining the internal structure of a bone along a predetermined path comprising an ultrasonic transducer for generating ultrasonic waves directed towards the bone along the path and an analyzer arranged to detect echoes of the ultrasonic waves caused by changes in the acoustical impedance in the bone characterizing changes in the structure of the bone and to interpret the echoes into information relating to the location of the structural changes of the bone (abstract and paragraphs [0006] to [0009] together with Figures 1 and 2 and the corresponding description).

As held by the examining division in its decision, the device defined in claim 1 differs from that disclosed in document D1 in the provision of a nozzle fluidically connected to a liquid reservoir for providing a liquid jet directed at the bone in the direction of the path, whereby both the ultrasonic waves generated by the transducer and the corresponding echoes detected by the analyzer are transmitted through the liquid jet.

3.2 Document D2 discloses a periodontal structure mapping device coupled to a dental handpiece, the device being arranged to generate ultrasonic waves for the measurement of the distance between the cemento-enamel junction and the bottom of the periodontal pocket

(abstract together with column 1, line 51 *et seq.* and column 3, lines 22 to 62) and comprising a conduit arranged to inject pressurized water into the periodontal pocket (Figures 4 to 7 and the corresponding description).

In its decision the examining division held that the aforementioned teaching of document D2 rendered obvious the distinguishing feature mentioned above.

However, the use of water is specifically disclosed in document D2 in a particular context, namely in connection with the operation of the device with ultrasonic waves of a high frequency that are poorly transmitted in the air-containing periodontal pocket space, and it is in this specific context that the document teaches injecting pressurized water into the periodontal pocket space in order to completely fill the space with water and thus improve the forward and backward transmission characteristics of the ultrasonic waves through the pocket space (column 4, lines 25 to 38, column 7, line 35 to column 8, line 12, and column 9, lines 2 to 23). In contrast to this, the operation of the device of document D1 requires, as submitted by the appellant, that the ultrasonic transducer is in direct physical contact with the bone to be examined (Figure 2 and the corresponding description) and - contrary to the view expressed by the examining division - there is no air space therebetween requiring improved ultrasonic wave transmission in the sense disclosed in document D2.

Furthermore, in document D2 it is the length of the periodontal pocket space itself which is measured and

the document is silent as to any measurement of the structure of the underlying bone and, in addition, the document teaches filling the periodontal pocket space with water without however directing the stream of water to any particular position. In these circumstances, the Board does not see any reason why the skilled person would have considered the application of the teaching of document D2 to the device disclosed in document D1 and, in addition, such an approach would possibly result in the provision of means for supplying water in a pressurized state around the point of contact between the transducer and the bone, but - contrary to the examining division's view - would not result in the claimed non-contact determination arrangement requiring an ultrasonic-wave coupling directivity such that, in use, the ultrasonic waves generated by the transducer are directed toward the bone through a liquid jet and the echoes produced by the internal structure of the bone transmitted back through the same liquid jet for detection so that - as explained by the appellant, see point VI above - the liquid jet itself operates as an "acoustic probe".

3.3 The remaining documents on file are less pertinent than documents D1 and D2.

3.4 In view of the above considerations, the Board concludes that the subject-matter of present claim 1, as well as that of dependent claims 2 to 5 appendant thereto, involves an inventive step over the available prior art within the meaning of Article 56 EPC 1973.

4. The Board is also satisfied that the application documents amended according to the present request and

the invention to which they relate meet the remaining requirements of the EPC within the meaning of Article 97(1) EPC. The Board therefore concludes that the decision under appeal is to be set aside and a patent be granted on the basis of the application documents amended according to the present request of the appellant.

5. *Request for reimbursement of the appeal fee*

The appellant has requested the reimbursement of the appeal fee on the grounds that the refusal of the application after one single official communication amounted to a procedural violation.

5.1 The relevant facts can be summarised as follows:

a) In the official communication pursuant to Article 94(3) EPC dated 19.06.2008 the examining division referred to the objections raised in the European search opinion accompanying the extended European search report dated 11.03.2008 and issued according to Rule 62(1) EPC. In this opinion it was held *inter alia* that the subject-matter of claim 1 did not involve an inventive step (point 3 of the opinion).

b) In its reply dated 18.09.2008 the appellant filed amended application documents. In particular, claim 1 was amended by insertion of reference signs relating to the drawings and by the insertion of the expression "traversing back through the jet" in the resulting amended claimed feature "an ultrasonic transducer (68) for generating ultrasonic waves through the liquid jet and for detecting echoes traversing back

through the jet of the ultrasonic waves [...]" (emphasis added). In its reply the appellant also submitted counterarguments in response to the view of the examining division that the subject-matter of claim 1 did not involve an inventive step.

c) The examining division then refused the application by the decision dated 26.11.2009 now under appeal. In its decision the examining division

- held that the insertion in claim 1 of the expression "traversing back through the jet" constituted an amendment of a "purely linguistic nature" (point 4 of section "Facts and submissions"),

- noted that no oral proceedings were requested by the appellant (point 5 of section "Facts and submissions"), and

- held that claim 1 did not involve an inventive step, gave reasons identical to those already given in the European search opinion, and found the counterarguments of the appellant insufficient to challenge its view on the issue of inventive step (see respectively points 1, 1.1 and 1.2 of section "Reasons for the decision").

5.2 The Board first notes the following:

i) The insertion of the expression "traversing back through the jet" in claim 1 subsequently rejected by the examining division - although representing in the Board's view more than just an amendment of "a purely linguistic nature" as held by the examining division - appears to have the sole effect of specifying explicitly a feature that was implicit - or at least was considered by the examining division as

manifestly implicit - in the subject-matter of the unamended claim. Consequently, the amendment to claim 1 did not have any impact on the claimed subject-matter as construed by the examining division by reference to the European search opinion, not at least to the extent of affecting the examining division's assessment of inventive step of the claimed invention. It follows that, contrary to the submissions of the appellant, there was no need for the examining division to re-examine the amended claimed subject-matter as its previous assessment of inventive step was already based on a construction of the unamended subject-matter in which the transducer detected echoes traversing back through the liquid jet.

ii) As noted by the examining division in its decision, the appellant did not request oral proceedings.

iii) The reasons given by the examining division for the refusal consisted of those previously notified to the appellant by reference to the European search opinion, and in its decision the examining division also reasoned why the counterarguments submitted by the appellant were, in its opinion, not persuasive.

Consequently the decision was sufficiently reasoned within the meaning of Rule 111(2) EPC and, in addition, was based on grounds on which the appellant already had an opportunity to comment (Article 113(1) EPC 1973).

5.3 The appellant has submitted that the circumstances of the case did not justify a refusal after only one exchange of letters and that consequently the refusal

constituted an abuse of process contrary to Article 96(2) EPC. The appellant appears to refer here to Article 96(2) EPC 1973 and the Board understands these submissions as referring to the corresponding article of the EPC 2000 applicable in the present case (see Article 1 of the Decision of the Administrative Council of 28 June 2001 on the transitional provisions under Article 7 of the Act revising the European Patent Convention of 29 November 2000, published in OJ EPO, Special edition No. 1 2007, 197), i.e. Article 94(3) EPC which, as far as the issues raised by the appellant are concerned, has the same text as the earlier article, i.e. that in case "the examination [...] reveals that the application or the invention to which it relates does not meet the requirements of this Convention, the Examining Division shall invite the applicant, [...] as often as necessary, to file his observations" (emphasis added).

According to the established case law developed in relation to Article 96(2) EPC 1973 and also applicable, as far as the issues raised by the appellant are concerned, to Article 94(3) EPC, the expression "as often as necessary" in this article indicates that the examining division has a discretion which has to be exercised objectively in the light of the circumstances of the case (see for instance decisions T 162/82 (OJ EPO 1987, 533), point 12 of the reasons, T 300/89 (OJ EPO 1991, 480), point 9.1, and T 726/04, point 7). Thus, as far as the alleged procedural violation is concerned, the question to be addressed by the Board is whether the examining division, by not inviting the appellant again to comment on the same assessment previously communicated to it before contemplating the

refusal of the application, exercised its discretion under Article 94(3) EPC in an incorrect way.

In the present case, nothing in the appellant's response to the first communication brought the examining division to change its mind in respect of the issue of inventive step since, apart from the amendment referred to above which had no effect on the examining division's assessment of the claimed subject-matter (paragraph 5.2-i) above), the counterarguments put forward by the appellant failed to convince the examining division that the claimed subject-matter did involve an inventive step. In these specific circumstances - and irrespective of the fact that the substantive assessment of the case by the examining division is not being followed by the present Board, see point 3 above - it became legitimate for the examining division to reject the application without issuing a further communication.

In addition, contrary to the appellant's submissions, neither Article 94(3) EPC alone nor this article in conjunction with the remaining procedural requirements of the EPC (and in particular with those of Article 113(1) EPC 1973) require that the applicant be given a repeated opportunity to comment on the argumentation of the examining division so long as the decisive objections against the grant of a patent remain the same insofar as the grounds for these objections have been presented to the applicant, completely and in due time (see for instance T 162/82 *supra*, point 13 of the reasons, and T 726/04 *supra*, point 7). The Board also does not agree that because the expression "as often as necessary" is synonymous



with "as many times as necessary", the word "often" itself implies more than once; rather, "as many times" also includes one single instance.

The further argument of the appellant that there was still a possibility of restricting the claimed invention and that one can hardly maintain that the possibility for amendment has been exhausted during the examination procedure cannot be followed by the Board. The Boards sees no legal basis in the EPC and no general procedural principle that would support the view that a rejection cannot be issued if there are still ways of restricting the claimed subject-matter or before all possibilities for amendment have been "exhausted" as appears to be the position of the appellant. On the contrary, it is incumbent upon the appellant to maintain unamended or to amend - optionally on an auxiliary basis - the application documents upon which examination is to be carried out and a decision eventually to be reached (Articles 94 and 97 EPC together with Article 113(2) EPC 1973) (see T 300/89 *supra*, point 9.1), and not upon the examining division to prolong the examination procedure beyond the procedural framework set out in the EPC (see in this respect Article 123(1) together with Rule 86(3) EPC 1973) until the applicant opts for amending the application and eventually "exhausts" all possibilities for amendment, as this would seriously undermine the principle of procedural economy.

As regards the submissions of the appellant that it was necessary for the examining division to issue a further communication in order to acquire a full understanding of the invention, the Board notes that the examining

division manifestly found itself in a position to form an opinion on the substantive issues under consideration and in particular on the counterarguments presented by the appellant. In these circumstances, the question of whether the examining division was objectively right in believing that it did in fact have a full and correct understanding of the invention and the further question of whether or not the examining division's understanding of the substantive matters of the case was correct or is shared by the appellant or by the present Board constitute by their very nature a matter of judgment on substantive issues and, contrary to the appellant's submissions, they are immaterial to the procedural question of whether a further communication was necessary within the meaning of Article 94(3) EPC.

The Board acknowledges that the amendments made to the application documents in response to the first communication overcome other objections raised by the examining division by reference to the European search opinion (claims excluded from patentability by Article 53(c) EPC 1973 and inconsistent use of reference signs in the description and drawings) and can certainly be qualified, as submitted by the appellant, as a serious attempt to overcome the corresponding objections raised by the examining division. However, none of these amendments had an impact on the subject-matter of claim 1 or on the examining division's assessment of inventive step (paragraph 5.2-i) above), and therefore the appellant's submissions in this respect have no effect on the issues under consideration.

As regards the appellant's submission that no oral proceedings were requested because it was "felt that the application was in order for grant", the Board notes that this is no excuse for having failed to request oral proceedings because, first, unless otherwise expressly stated, it is generally assumed that the application documents on file at each stage of the examination procedure are from the point of view of the applicant in order for grant (see Article 97(1) EPC together with Article 113(2) EPC 1973) and, second, pursuant to Article 116(1) EPC 1973 it is incumbent upon the appellant to request or not oral proceedings - possibly only on an auxiliary basis - in accordance with the circumstances (see T 300/89 *supra*, point 9.2).

In these circumstances, the Board is unable to identify any reason to conclude that the examining division had exercised its discretion under Article 94(3) EPC in an incorrect way.

- 5.4 In view of the above considerations, the Board does not see any reason to consider that in the circumstances of the present case the refusal of the application immediately after the reply to the first and sole official communication of the examining division constituted a violation of Article 94(3) EPC or of any other procedural principle enshrined in the EPC. In addition, the Board is unable to identify any other procedural violation in the first-instance proceedings (point 5.2 above, last paragraph), let alone a substantial procedural violation that would justify the reimbursement of the appeal fee under Rule 67 EPC 1973 as requested by the appellant.

## Order

### For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the department of first instance with the order to grant a patent on the basis of the following application documents:
  - claims 1 to 5 filed with the letter dated 22 June 2010,
  - description pages 1 to 11 filed with the letter dated 22 June 2010 and
  - drawing sheets 1/7 to 3/7 and 5/7 to 7/7 of the application as published and drawing sheet 4/7 filed with the letter dated 18 September 2008.
3. The request for reimbursement of the appeal fee is refused.

The Registrar:

The Chairman:

G. Nachtigall

A. G. Klein