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**Datasheet for the decision
of 17 September 2014**

Case Number: T 0129/14 - 3.2.02
Application Number: 04729259.4
Publication Number: 1618843
IPC: A61B5/055, G01R33/3415,
G01R33/561, G01R33/54,
G01R33/56
Language of the proceedings: EN

Title of invention:
MAGNETIC RESONANCE IMAGING METHOD AND APPARATUS

Applicant:
HITACHI MEDICAL CORPORATION

Headword:

Relevant legal provisions:
EPC Art. 82, 113(1)
EPC R. 44, 103(1)(a), 137(5), 164(2)
Guidelines for examination Section F, Chapter V-7 and V-9

Keyword:
Unity of invention - lack of unity a posteriori (no)
Unity of invention - single general inventive concept (yes)
Reimbursement of appeal fee -
substantial procedural violation (yes)

Decisions cited:
G 0002/92, T 0631/97, W 0008/91, T 0747/06

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

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Case Number: T 0129/14 - 3.2.02

**D E C I S I O N
of Technical Board of Appeal 3.2.02
of 17 September 2014**

Appellant: HITACHI MEDICAL CORPORATION
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Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 28 August 2013
refusing European patent application
No. 04729259.4 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 28 August 2013, to refuse European patent application No. 04 729 259.4.
- II. The application is derived from an international application published as WO 2004/093682. The international search report was drawn up by the Japan Patent Office in accordance with the PCT.
- III. Upon entry into the European phase, the Search Division considered that the application did not comply with the requirements of unity of invention and drew up the supplementary European search report only for the parts of the application relating to claims 1, 5, 14 and 15 as originally filed, which it considered to constitute the unitary group of inventions first mentioned in the claims. Claims 2 to 4, 6 to 13 and 16 were considered to relate to a second group of inventions, and claims 17 to 20 were considered to relate to a third group of inventions, each non-unitary with the others.
- IV. After examination, the Examining Division refused the application based on Article 82, Rules 44 and 164(2) EPC and opinion G 2/92, holding the claims filed with letter dated 27 July 2011, which constituted the appellant's sole request, to be inadmissible because they related to a group of inventions not covered by the supplementary European search report. More particularly, the Examining Division held that the claims as originally filed defined two groups of non-unitary inventions, i.e. claims 1, 5, 14 and 15 on the one hand, and claims 2 to 4, 6 to 13 and 16 to 20 on the other hand. Independent claims 1 and 15 of the appellant's request related to the second, non-searched

group of inventions.

V. Claims 1 to 4 and 17 as originally filed read as follows:

"1. A magnetic resonance imaging method, comprising:

an entire image forming step of repetitively performing a unit region processing step including a unit region measuring step of measuring echo signals from a subject corresponding to a unit region having an origin of a k-space and a specific width from a low spatial frequency region to a high spatial frequency region, and a unit region image forming step of forming an image of the unit region from echo signals corresponding to the unit region, while changing an angle of rotation of the unit region about the origin of the k-space, so that an entire image is formed by fusing plural unit region images, the magnetic resonance imaging method being characterized in that, in the unit region measuring step, measurements of the echo signals are skipped in at least one unit region.

2. The magnetic resonance imaging method according to Claim 1, characterized in that:

in the unit region measuring step, a multiple receiver coil formed by combining plural receiver coil units is used to acquire echo signals at each receiver coil unit; and

in the unit region image forming step, the unit region image is formed using the echo signals at each receiver coil unit.

3. The magnetic resonance imaging method according to Claim 2, characterized in that:

in the unit region image forming step, the unit region image from which aliasing artifacts are removed is formed by using sensitivity distribution data of each receiver coil unit.

4. The magnetic resonance imaging method according to Claim 3, characterized in that:

the unit region comprises plural parallel trajectories; and

a measurement of echo signals corresponding to at least one trajectory among the parallel trajectories is skipped in the skipped measurements.

17. A magnetic resonance imaging apparatus, comprising:

signal receiving means for receiving echo signals from a subject;

measurement control means for measuring the echo signals according to a specific sequence;

signal processing means for performing image reconstruction computation using the echo signals; and

overall control means for controlling the measurement control means and the signal processing means,

the measurement control means being provided with a sequence, according to which a measurement of echo signals corresponding to a unit region formed of plural parallel trajectories on a k-space is repeated by changing an angle of rotation of the unit region about an origin of the k-space,

the signal processing means including unit region image forming means for forming a unit region image from echo signals for each unit region, and entire image forming means for forming an entire image from respective unit region images,

wherein the magnetic resonance imaging apparatus is characterized in that:

the signal receiving means includes a multiple receiver coil formed by combining plural receiver coil units to receive the echo signals at each receiver coil unit;

the measurement control means measures the echo signals at each receiver coil unit by skipping one or more parallel trajectories in one or more unit regions; and

the unit region image forming means forms the unit region image from which aliasing is removed, from the echo signals at each receiver coil unit measured by skipping and sensitivity distribution data of each unit region and each receiver coil unit."

Claim 5 to 16 are dependent on claim 1 and claims 18 to 20 are dependent on claim 17.

VI. Claim 1 of the appellant's request filed with letter dated 27 July 2011, which was held inadmissible by the Examining Division, reads as follows (additions compared to claim 1 as originally filed are underlined by the Board):

"1. A magnetic resonance imaging method, comprising:

an entire image forming step of repetitively performing a unit region processing step including a unit region measuring step of measuring echo signals from a subject corresponding to a unit region having an origin of a k-space and a specific width from a low spatial frequency region to a high spatial frequency region, and

a unit region image forming step of forming an image of the unit region from echo signals

corresponding to the unit region, while changing an angle of rotation of the unit region about the origin of the k-space, so that an entire image is formed by fusing plural unit region images,

the magnetic resonance imaging method being characterized in that,

in the unit region measuring step, measurements of the echo signals are skipped in at least one unit region and a multiple receiver coil formed by combining plural receiver coil units is used to acquire echo signals at each receiver coin unit; and

in the unit region image forming step, the unit region image is formed using the echo signals at each receiver coil unit and the unit region image from which aliasing artifacts are removed is formed by using sensitivity distribution data of each receiver coil unit."

This claim basically incorporates features of original dependent claims 2 and 3.

Claim 15 of the appellant's request held inadmissible by the Examining Division is identical to claim 17 as originally filed.

Dependent claims 2 to 14 and 16 to 18 correspond to original dependent claims 4 to 16 and 18 to 20, renumbered accordingly.

VII. The notice of appeal was received on 7 November 2013 and the appeal fee was paid on the same day. The statement setting out the grounds of appeal was received on 7 January 2014.

VIII. The appellant requested:

- a) that the decision under appeal be set aside, a search of the originally filed claims or of the claims filed with letter dated 27 July 2011 be conducted and a patent be granted,
- b) that the appeal fee be reimbursed in accordance with Rule 103(1) EPC,
- c) that oral proceedings be appointed in case the Board intended to dismiss request (a),
- d) that the Board communicate its opinion prior to oral proceedings, if any.

IX. The appellant's arguments may be summarised as follows:

An independent claim could not lack unity with its own dependent claims, because they necessarily shared the common general concept of the independent claim. This was explained in the Guidelines for Examination in the EPO, F-V, 7 and 9, and was supported by a number of decisions of the boards of appeal, such as W 8/91, W 6/98 and W 40/07 and T 747/06.

Claim 17 as originally filed was an independent apparatus claim comprising apparatus features reflecting all the technical features of independent method claim 1 as originally filed. In addition, claim 17 included further technical features corresponding to those of dependent claims 2 to 4. Hence, the invention claimed in 17 also comprised the common general concept of the subject-matter of claim 1 and could not lack unity with it.

It followed that the Examining Division was wrong in its assessment of unity of invention.

Furthermore, this wrong assessment of unity of invention had the effect of a death sentence on the present application, since as soon as a novelty-destroying document for the subject-matter of claim 1 as originally filed was found the search could be stopped and any possible amendment would be held inadmissible under Rule 137(5) EPC in conjunction with Article 82 EPC and Rule 44(1) EPC.

By ignoring the well-established examination practice on unity and depriving the appellant of virtually any option for pursuing the present application, the Examining Division had committed a substantial procedural violation justifying the reimbursement of the appeal fee.

Reasons for the Decision

1. The appeal is admissible.
2. As far as relevant for the present appeal, Rule 164(2) EPC stipulates that "[w]here the examining division finds that [...] protection is sought for an invention not covered by the [...] supplementary European search report, it shall invite the applicant to limit the application to one invention covered by the [...] supplementary European search report."

This rule does not explicitly refer to any assessment of unity of invention subsequent to that made by the

European Patent Office at the time of drafting the supplementary European search report.

However, in the European grant procedure the Examining Division becomes responsible for examining unity of invention of the entire application, which includes a duty to review the unity assessment that led to the drafting of the supplementary European search report.

This conclusion is in line with the findings of opinion G 2/92 and decision T 631/97 (especially points 3.6 and 3.9.2 of the Reasons) concerned with corresponding legal provisions in force at that time.

3. Hence, in the present case, a precondition for holding claims inadmissible with reference to Rule 164(2) EPC and for basing a refusal of the application on this rule, is that the assessment of unity of invention made by the European Patent Office at the time of drafting the supplementary European search report was correct, at least as far as the identification of the unitary group of inventions first mentioned in the claims is concerned.

It follows that it was the duty of the Examining Division, in its decision to refuse the application, to provide reasons why such a lack of unity was present.

The Examining Division reviewed the Search Division's assessment of lack of unity of the claims as originally filed under point 1 of the Reasons of the impugned decision.

4. The application as originally filed included 20 claims.

Claim 1 is an independent claim directed to a magnetic

resonance imaging method with a specific interpolation algorithm to obtain an image from discrete measurements in a region of interest. In particular, in the image formation process some of the discrete measurements are selectively skipped and the data associated with them are ignored in order to obtain an image more rapidly. According to the specific application of the method, the resulting loss of accuracy would still be acceptable. Claims 2 to 16 are dependent on claim 1.

Claim 17 is an independent apparatus claim for carrying out the method according to claim 1 and corresponds to claim 4 in terms of apparatus features. Claims 18 to 20 are dependent on claim 17.

5. *Unity of invention with regard to the originally filed claims*

5.1 Article 82 EPC states: "The European patent application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept."

It is therefore to be deduced that unity of invention is lacking only if the application relates to a group of inventions forming more than one general inventive concept.

5.2 Rule 44(1) EPC specifies that a group of claimed inventions fulfils the requirements of Article 82 EPC "only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features", i.e. the features defining a contribution over the prior art.

5.3 According to the established case law of the boards of appeal, and as also explained in the Guidelines for Examination in the EPO, F-V, 7, a lack of unity may be evident "a priori", i.e. before considering the state of the art revealed by the search, or "a posteriori", i.e. after taking that state of the art into consideration. In both cases an analysis of the technical problem underlying each invention is required.

5.4 In the impugned decision, the Examining Division held that claims 1, 5, 14 and 15 as originally filed defined a first group of inventions and claims 2 to 4, 6 to 13 and 16 to 20 as originally filed defined a second group of inventions, non-unitary with the first one.

In its assessment the Examining Division adopted an "a posteriori" approach, since it took into consideration document US-A-5,243,284 (D1), revealed by the supplementary European search.

It went on to affirm that the subject-matter of claims 1, 5, 14 and 15, i.e. the first group of claimed inventions, lacked novelty over document D1. As a consequence, the problem to be solved "was the same as the one already known from D1".

However, for each group of claimed inventions, the Examining Division should have identified special technical features and established a respective technical problem solved **over** document D1, i.e. the prior art considered in its assessment. This is not only clear from the established case law of the boards of appeal, but also directly derivable from the wording of Rule 44(1) EPC, which explicitly mentions, for each claimed invention, "a contribution [...] over the prior

art".

Since the technical problem solved by the first group of claimed inventions was not established over document D1 - and could not have been in view of the fact that document D1 was considered to be novelty-destroying for the claims of this group - the assessment of unity of invention presented in the impugned decision is, for this reason alone, not correct.

5.4.1 Claim 1 and its dependent claims 2 to 16

The Board cannot agree with the reasoning of the impugned decision that independent claim 1 may lack unity with its dependent claims 2 to 4, 6 to 13 and 16.

Normally, a dependent claim has all the features of its independent claim. If the independent claim comprised one or more special technical features defining a contribution over the prior art under consideration, the dependent claim would also comprise those same special technical features. Hence they would form a single general inventive concept within the meaning of Article 82 EPC. If the independent claim did not comprise any special technical features defining a contribution over that prior art, e.g. because its subject-matter was not novel, then it would not form any inventive concept. Hence, again no more than one general inventive concept within the meaning of Article 82 EPC - possibly defined by the additional features of the dependent claim - would result.

As also argued by the appellant, this is in line with what is explained in the Guidelines for Examination in the EPO, F-V, 9, explicitly for the "a priori"

approach, and implicitly - the question of the presence of an inventive link is only mentioned between different dependent claims - for the "a posteriori" approach.

It is therefore concluded, contrary to the impugned decision, that dependent claims 2 to 16, in particular claims 2 to 4, 6 to 13 and 16, are unitary with claim 1.

5.4.2 *Independent claims 1 and 17*

Article 82 and Rule 44 EPC do not rule out that different independent claims of different categories will be unitary when so linked as to form a single general inventive concept.

As also recognised by the Examining Division in the impugned decision, original claim 17 corresponds to original claim 4 in terms of apparatus features and is unitary with the latter (points 1.4 and 1.5.2 of the Reasons).

Since, as explained above, claim 4 is linked to claim 1 so as to form a single general inventive concept, the same applies between claim 17 and claim 1.

It follows that claim 17 and also its dependent claims 18 to 20 are unitary with claims 1 to 16.

5.5 Hence, claims 1 to 20 relate to a group of inventions so linked as to form a single general inventive concept within the meaning of Article 82 EPC. As a consequence, the requirements of this article are met by the originally filed claims.

5.6 Therefore, the supplementary European search report should have been established on the basis of all the originally filed claims and the appellant has the right to obtain such a report.

5.7 For these reasons, the decision under appeal is to be set aside.

6. *Admissibility of the appellant's request in particular with regard to Rule 164(2) EPC*

Since the claims to be searched at the time of drafting of the supplementary European search report related to a group of inventions so linked as to form a single general inventive concept and should all have been searched, the claims according to the appellant's request filed with letter dated 27 July 2011, which are based on a combination of originally filed claims, should not have been held inadmissible with reference to Rule 164(2) EPC.

Moreover, these claims were filed at an early stage of the examination proceedings and other reasons not to admit them were neither given in the impugned decision nor are otherwise apparent.

Hence, the appellant's request filed with letter dated 27 July 2011 is to be admitted.

7. *Remittal to the department of first instance*

Since no search has been carried out for the subject-matter of the claims of the appellant's request filed with letter dated 27 July 2011, the Board is not in a position to conduct any meaningful assessment of patentability.

Furthermore, in point 5. of the statement setting out the grounds of appeal, the appellant itself requested remittal to the department of first instance for such a search to be carried out.

For these reasons the Board makes use of the discretion conferred to it by Article 111(1) EPC and decides to remit the case to the department of first instance for further prosecution.

8. *Reimbursement of the appeal fee*

According to Rule 103(1) (a) EPC, "The appeal fee shall be reimbursed [...] where the Board of Appeal deems an appeal to be allowable, if such reimbursement is equitable by reason of a substantial procedural violation".

Based on the reasons given in points 5. to 6. above, the impugned decision is to be set aside. It follows that the appeal is allowable within the meaning of Rule 103(1) (a) EPC.

In its assessment of unity of invention, not only did the Examining Division deviate from the established case law of the boards of appeal and the practice explained in the Guidelines for Examination in the EPO, F-V, 7 and 9, but it also failed to provide substantial reasons for this deviation, especially as far as dependent claims 2 to 4, 6 to 13 and 16 as originally filed were concerned.

Moreover, it also completely ignored the appellant's arguments repeatedly presented on the basis of decisions of the boards of appeal and the Guidelines

for Examination in the EPO. The only comment concerning these arguments is an unreasoned criticism of the headnote of decision W 8/91, which "did not appear to be supported by any of the actual content of said decision".

In the Board's view this goes against the appellant's fundamental right to be heard, as enshrined in Article 113(1) EPC. This provision not only gives the appellant an opportunity to present submissions and comments, but also requires that these are duly considered and that a reasonable attempt is made to understand them before a decision is taken. Therefore, it was the Examining Division's duty to show that it had considered the appellant's opinion, at least by commenting its main aspects in the final decision.

Hence, in line with the findings of decision T 747/06 (point 2.3.4 of the Reasons), the Board concludes that the Examining Division committed a substantial procedural violation.

This substantial procedural violation gave rise to the appellant's need to file an appeal in order to preserve its rights. Hence, the reimbursement of the appeal fee is equitable within the meaning of Rule 103(1)(a) EPC.

Accordingly, the appellant's request that the appeal fee be reimbursed is allowed.

9. Since the appellant's requests that the decision under appeal be set aside and that the appeal fee be reimbursed are allowable, there is no need for the Board to consider the subsidiary requests for oral proceedings and for a communication prior to oral proceedings.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside and the case is remitted to the department of first instance for further prosecution.
2. The appeal fee is to be reimbursed.

The Registrar:

The Chairman:



D. Hampe

E. Dufrasne

Decision electronically authenticated