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**Datasheet for the decision
of 8 March 2022**

Case Number: T 1479/17 - 3.5.04

Application Number: 12701777.0

Publication Number: 2668638

IPC: G06T11/00

Language of the proceedings: EN

Title of invention:

SPECTRAL IMAGING

Applicant:

Koninklijke Philips N.V.
Philips Intellectual Property & Standards GmbH

Headword:

Relevant legal provisions:

EPC Art. 111(1), 84
RPBA 2020 Art. 11, 13(2)

Keyword:

Remittal of the case to first-instance department (no)
Auxiliary requests II, II', II'', III to VI - Admittance under
Article 13(2) RPBA 2020 (yes)
All requests - Clarity (no)

Decisions cited:

T 0731/17, T 1966/16

Catchword:



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Case Number: T 1479/17 - 3.5.04

D E C I S I O N
of Technical Board of Appeal 3.5.04
of 8 March 2022

Appellant:
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Appellant:
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Decision under appeal:

**Decision of the Examining Division of the
European Patent Office posted on 2 February 2017
refusing European patent application
No. 12701777.0 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair B. Willems
Members: B. Le Guen
B. Müller

Summary of Facts and Submissions

- I. The appeal is against the decision to refuse European patent application No. 12 701 777.0, published as international application WO 2012/101537 A1.
- II. The examining division, exercising its discretion under Rule 137(3) EPC, decided not to admit the main request then on file into the examination proceedings because it gave rise to new objections under Article 123(2) EPC. It also decided not to admit the first to fifth auxiliary requests then on file into the examination proceedings because they gave rise to new objections under Article 83 EPC.

As none of the requests submitted by the applicants was admitted into the examination proceedings, the application was refused under Article 97(2) EPC "for failure to comply with Article 113(2) EPC".

- III. The applicants ("appellants") filed notice of appeal. With the statement of grounds of appeal, they re-filed the sets of claims and description pages of all the requests that had formed the basis of the decision under appeal (main request and auxiliary requests I to V). The appellants also filed a set of claims and description pages according to auxiliary request VI.

The appellants provided arguments as to why the requests met the requirements of sufficiency of disclosure (Article 83 EPC), clarity (Article 84 EPC), novelty and inventive step (Article 52(1) EPC in combination with Articles 54(1) and 56 EPC).

The appellants requested that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of the main request or, alternatively, on the basis of the claims of one of auxiliary requests I to VI, all requests having been filed with the statement of grounds of appeal.

The appellants further requested that the board "remit the case to the first instance in accordance with Article 111 EPC, if novelty and inventive step or other issues, which ha[d] not been discussed in first instance proceedings, w[ould] become relevant during appeal proceedings, because otherwise the applicant might be deprived of discussing, for instance, novelty and inventive [step] in two instances" (see the statement of grounds of appeal, page 3, point II.1.4; emphasis in the original text).

- IV. On 12 March 2021, the board issued a summons to oral proceedings. In a communication under Article 15(1) RPBA 2020 (see OJ EPO 2019, A63) dated 21 May 2021, the board introduced the following document into the appeal proceedings on the basis of Article 114(1) EPC:

D3: US 2004/0264626 A1

The board also gave the following preliminary opinion.

- (a) It appeared that the examining division had fully examined the main request and auxiliary requests I to V during the first-instance proceedings and, in doing so, had implicitly admitted them into the proceedings. Thus, the board did not have discretion not to admit these requests into the appeal proceedings.

- (b) The board was minded to take into account auxiliary request VI under Article 12(4) RPBA 2007 since its claims appeared to be identical to those of auxiliary request V.
- (c) All requests met the requirements of Article 83 EPC.
- (d) The main request met the requirements of Article 123(2) EPC.
- (e) There were no "special reasons" within the meaning of Article 11 RPBA 2020 for remitting the case to the first-instance department.
- (f) Claims 1, 12 and 15 of all requests lacked clarity (Article 84 EPC) for multiple reasons. In particular, the step of "*generating a value quantifying an amount of a target specific contrast material in a region of interest of the spectral projection image*", present in claim 1 of all requests, was unclear.
- (g) The subject-matter of claim 1 of the main request and of auxiliary requests I and II lacked inventive step (Article 56 EPC) in view of the disclosure of document D3.
- (h) The subject-matter of claim 1 of auxiliary requests III, IV, V and VI lacked inventive step (Article 56 EPC) in view of the disclosure of document D3 combined with the common general knowledge of the person skilled in the art.

V. By means of a communication from the board's registrar, dated 14 January 2022, the appellants were informed

that the oral proceedings scheduled for 8 March 2022 would be held by videoconference.

- VI. With a letter dated 7 February 2022, the appellants filed amended claims and amended description pages according to auxiliary requests I, II, II', II'' and III to X.

The appellants submitted that the claims and the description of auxiliary requests I and VII to X were identical to the claims and the description of auxiliary requests II to VI filed with the statement of grounds of appeal.

The appellants provided a basis for the claims of auxiliary requests II, II', II'' and III to VI, as well as arguments as to why these requests should be admitted into the appeal proceedings.

The appellants further provided arguments as to why the independent claims of all requests were clear and why the subject-matter thereof involved an inventive step.

The appellants requested that the decision under appeal be set aside and that a European patent be granted on the basis of the claims of the main request on which the decision was based or, alternatively, on the basis of the claims of one of auxiliary requests I, II, II', II'' and III to X filed with their letter dated 7 February 2022, in this order of preference.

- VII. On 8 March 2022, the oral proceedings before the board were held by videoconference.

The appellants' final requests were that the decision under appeal be set aside and that

- the case be remitted to the department of first instance in accordance with Article 111 EPC in case issues had to be discussed which were not discussed during the first-instance proceedings or, alternatively

- a European patent be granted on the basis of the claims of the main request filed with the statement of grounds of appeal dated 17 May 2017 or on the basis of the claims of one of auxiliary requests I, II, II', II'' and III to X, all auxiliary requests filed with the letter dated 7 February 2022.

At the end of the oral proceedings, the chair announced the board's decision to dismiss the appeal.

VIII. Claim 1 of the **main request** reads as follows:

"A method, comprising:

analyzing a spectral projection image of a portion of a subject;

generating a value quantifying an amount of a target specific contrast material in a region of interest of the spectral projection image; and

generating a signal indicative of a presence of the target in response to the value satisfying a predetermined threshold level."

IX. Claim 1 of **auxiliary request I** differs from claim 1 of the **main request** in that the first step of the claimed method reads as follows (added features are underlined):

"analyzing a spectral projection image being a scout image of a portion of a subject".

X. Claim 1 of **auxiliary request II** reads as follows:

"A method, comprising:

decomposing projection data, which is acquired during a contrast enhanced projection scan of the subject, into at least a K-edge component representative of a K-edge material;

reconstructing the K-edge component to generate the spectral projection image;

generating a value quantifying an amount of a target specific contrast material in a region of interest of the spectral projection image, wherein the spectral projection image is a scout image of a portion of a subject, wherein the target specific contrast material includes the K-edge material and wherein the value represents pixel intensity; and

generating a signal indicative of a presence of the target in response to the value satisfying a predetermined threshold level, wherein the signal indicates a presence of the K-edge material when the value satisfies the predetermined threshold level."

XI. Claim 1 of **auxiliary request II'** reads as follows (features added to claim 1 of **auxiliary request II** are underlined):

"A method, comprising:

decomposing projection data, which is acquired during a contrast enhanced projection scan of the subject, into at least a K-edge component representative of a K-edge material;

reconstructing the K-edge component to generate the spectral projection image;

analyzing the spectral projection image, wherein the spectral projection image is a portion of a subject and the analyzing includes: generating a value quantifying an amount of a target specific contrast material in a region of interest of the spectral projection image, wherein the spectral projection image is a scout image of a portion of a subject, wherein the target specific contrast material includes the K-edge material and wherein the value represents pixel intensity; and

generating a signal indicative of a presence of the target in response to the value satisfying a predetermined threshold level, wherein the signal indicates a presence of the K-edge material when the value satisfies the predetermined threshold level."

XII. Claim 1 of **auxiliary request II**' reads as follows (features added to or deleted from claim 1 of **auxiliary request II** are underlined or ~~crossed-out~~):

"A method, comprising:

decomposing projection data, which is acquired during a contrast enhanced projection scan of the subject, into at least a K-edge component representative of a K-edge material;

reconstructing the K-edge component to generate the spectral projection image;

generating a value quantifying an amount of a target specific contrast material based on ~~in a region of interest of~~ the spectral projection image, wherein the spectral projection image is a scout image of a portion of a subject, wherein the target specific contrast material includes the K-edge material and wherein the value represents pixel intensity; and

generating a signal indicative of a presence of the target in response to the value satisfying a predetermined threshold level, wherein the signal indicates a presence of the K-edge material when the value satisfies the predetermined threshold level."

XIII. Claim 1 of **auxiliary request III** reads as follows (features added to or deleted from claim 1 of **auxiliary request II** are underlined or ~~crossed-out~~):

"A method, comprising:

decomposing projection data, which is acquired during a contrast enhanced projection scan of the subject, into at least a K-edge component representative of a K-edge material;

reconstructing the K-edge component to generate the spectral projection image;

generating a value quantifying an amount of a target specific contrast material in a region of interest of the spectral projection image, wherein the spectral projection image is a scout image of a portion of a subject, wherein the target specific contrast material

includes the K-edge material and wherein the value represents pixel intensity;~~and~~

generating a signal indicative of a presence of the target in response to the value satisfying a predetermined threshold level, wherein the signal indicates a presence of the K-edge material when the value satisfies the predetermined threshold level; and

generating a recommendation that recommends a course of action for the subject based on one or more rules and one or more threshold values, wherein the one or more rules are based on a size of an area including an amount that exceeds a threshold value."

- XIV. Claim 1 of **auxiliary request IV** differs from claim 1 of **auxiliary request III** in that it further includes the following text before the full-stop:

", wherein the recommendation invokes automatic scheduling a subsequent medical or imaging examination for the subject".

- XV. Claim 1 of **auxiliary request V** reads as follows (features added to or deleted from claim 1 of **auxiliary request IV** are underlined or ~~crossed-out~~):

"A method, comprising:

decomposing projection data, which is acquired during a contrast enhanced projection scan of the subject, into at least a K-edge component representative of a K-edge material;

reconstructing the K-edge component to generate the spectral projection image;

generating a value quantifying an amount of a target specific contrast material in a region of interest of the spectral projection image, wherein the spectral projection image is a scout image of a portion of a subject, wherein the target specific contrast material includes the K-edge material and wherein the value represents pixel intensity;

generating a signal indicative of a presence of the target in response to the value satisfying a predetermined threshold level, wherein the signal indicates a presence of the K-edge material when the value satisfies the predetermined threshold level, wherein the target specific contrast material targets ruptured plaque in the cardiovascular system and the signal indicates a presence of ruptured plaque when the value satisfies the predetermined threshold level;~~and~~

generating a recommendation that recommends a course of action for the subject based on one or more rules and one or more threshold values wherein the one or more rules are based on a size of an area including an amount that exceeds a threshold value, wherein the recommendation invokes automatic scheduling a subsequent medical or imaging examination for the subject; and

displaying the spectral projection image, the area and the recommended region of interest."

- XVI. Claim 1 of **auxiliary request VI** differs from claim 1 of **auxiliary request IV** in that the penultimate step of the claimed method reads as follows (features added to claim 1 of **auxiliary request IV** are underlined):

"generating a recommendation that recommends a course of action for the subject based on one or more rules and one or more threshold values wherein the one or more rules are based on a size of an area including an amount that exceeds a threshold value, wherein the recommendation invokes automatic scheduling a subsequent medical or imaging examination for the subject, wherein the recommendation invokes automatic scheduling a subsequent medical or imaging examination for the subject".

XVII. Claim 1 of **auxiliary request VII** reads as follows (features added to or deleted from claim 1 of the **main request** are underlined or ~~crossed out~~):

"A method, comprising:

analyzing a spectral projection image of a portion of a subject;

generating a value quantifying an amount of a target specific contrast material in a region of interest of the spectral projection image; ~~and~~

generating a signal indicative of a presence of the target in response to the value satisfying a predetermined threshold level; and

generating a recommendation that recommends a course of action for the subject based on one or more rules and one or more threshold values, wherein the one or more rules are based on a size of an area including an amount that exceeds a threshold value."

XVIII. Claim 1 of **auxiliary request VIII** differs from claim 1 of **auxiliary request VII** in that it further includes the following text before the full-stop:

" , wherein the recommendation invokes automatic scheduling a subsequent medical or imaging examination for the subject".

XIX. Claim 1 of **auxiliary requests IX and X** differs from claim 1 of **auxiliary request VIII** in that the first step of the claimed method reads as follows (added features are underlined):

"analyzing a spectral projection image being a scout image of a portion of a subject".

XX. The arguments of the appellants concerning their **request for remittal of the case to the first-instance department** are the following.

If novelty and inventive step or other issues not discussed during the first-instance proceedings became relevant during the appeal proceedings, not remitting the case to the first-instance department would deprive the appellants of the possibility of discussing these issues in two instances. It would also be at odds with the primary object of the appeal proceedings which, according to Article 12(2) RPBA 2020, was to review the decision under appeal in a judicial manner. This was confirmed by the case law of the Boards of Appeal, in particular by the decisions reached in appeal cases T 731/17 (points 7.2 and 7.3 of the reasons) and T 1966/16 (point 2.2 of the reasons).

XXI. The arguments of the appellants concerning the **admittance of auxiliary requests II, II', II'' and III to VI** can be summarised as follows.

The amendments made to the claims in accordance with auxiliary requests II, II', II'', III and IV addressed clarity objections raised for the first time in the board's communication pursuant to Article 15(1) RPBA 2020.

The amendments made to the claims in accordance with auxiliary requests V and VI addressed the inventive-step objection raised for the first time by the board with reference to newly introduced document D3.

XXII. The arguments of the appellants regarding the **clarity** of the feature reading "*in a region of interest of the spectral projection image*", present in **all requests except auxiliary request II''**, insofar as relevant for the present decision, can be summarised as follows.

The person skilled in the art reading claim 1 with a mind willing to understand would have interpreted the expression "*in a region of interest of the spectral projection image*" as implying that a region of interest was pre-defined by a user (for example the physician). In any case, claim 1 was simply to be understood as meaning that the generation of a value quantifying an amount of a target-specific contrast material was limited to a region of interest. How this region was determined was not important. The fact that the region of interest was not specified in the claim only meant that the claim was broad, not that it was unclear. The expression "region of interest" could be the whole image. Moreover, the person skilled in the art would have understood that: the region of interest mentioned

in the claim was not the recommended region of interest shown in figure 4 of the patent application; and it was not to be equated to the tissue of interest mentioned in the paragraph bridging pages 7 and 8 as well as in the second full paragraph on page 12 of the description of the application either. The tissue of interest was simply the tissue specifically targeted by the contrast material.

XXIII. The arguments of the appellants regarding the **clarity** of the feature "*generating a value quantifying an amount of a target specific contrast material*", present in **all requests**, insofar as relevant for the present decision, can be summarised as follows.

The feature "*generating a value quantifying an amount of a target specific contrast material*" was broad but not unclear. The person skilled in the art reading claim 1 with a mind willing to understand would have understood that the "*value quantifying an amount of a target specific contrast material*" could only refer to how much pixel intensity attributed to the target-specific contrast material was present in the (region of interest of the) spectral projection image. This amount could be computed locally or globally, as specified on pages 8 and 12 of the description. It could be based on pixel intensities or levels of contrast. It could even be represented by the value of a single pixel since a single pixel could also indicate the presence of a ruptured plaque.

Claim 1 of auxiliary requests II, II', II'' and III to VI specified that the value quantifying an amount of a target-specific contrast material represented pixel intensity. This excluded the consideration of levels of contrast.

Reasons for the Decision

1. The appeal is admissible.
2. *Request for remittal to the first-instance department (Article 111(1) EPC)*
 - 2.1 Article 111(1) EPC provides that "*[f]ollowing the examination as to the allowability of the appeal, the Board of Appeal shall decide on the appeal. The Board of Appeal may either exercise any power within the competence of the department which was responsible for the decision appealed or remit the case to that department for further prosecution.*"
 - 2.2 According to Article 11, first sentence, RPBA 2020 (applicable pursuant to Article 25(1) RPBA 2020), "*[t]he Board shall not remit a case to the department whose decision was appealed for further prosecution, unless special reasons present themselves for doing so*".
 - 2.3 It is established case law that in *ex parte* proceedings the boards are restricted neither to examination of the grounds for the contested decision nor to examination of the facts and evidence on which the decision under appeal is based (see G 10/93, Reasons, point 3, and Case Law of the Boards of Appeal of the European Patent Office, 9th edition, 2019, ("Case Law"), V.A.3.3).

It is also established case law that there is no absolute right to have issues decided at two instances. Article 111(1), second sentence, EPC, leaves it to the board's discretion to decide on an appeal either by

exercising any power conferred on the department of first instance or by remitting the case to that department. In the interests of procedural economy, the board may decide the case even if a decisive issue has not been dealt with by the department of first instance (see Case Law, V.A.7.2.1).

- 2.4 In appeal cases T 731/17 and T 1966/16, referred to by the appellants (see point XX. above), the board did not find itself in a position to decide whether the pending requests met certain requirements of the EPC.
- 2.5 In the case in hand, the board affirms its preliminary opinion set out in its communication under Article 15(1) EPC (see point IV.(a) above): the examining division had fully examined the main request and auxiliary requests I to V during the first-instance proceedings and, in doing so, had implicitly admitted them into the proceedings. Thus, the board did not have discretion not to admit these requests into the appeal proceedings. As a consequence, the appeal is allowable within the meaning of Article 111(1), first sentence, EPC. In exercising its discretion under Article 111(1), second sentence, EPC, the board takes into account that it is in a position to decide whether the claims of the pending requests meet the requirements of Article 84 EPC. Thus, it considers that it would run counter to procedural economy to remit the case to the department of first instance for further prosecution. The board sees no "special reasons" within the meaning of Article 11 RPBA 2020 for remitting the case to the first-instance department either. Against this backdrop, the appellants' request for remittal is not granted.

3. *Main request and auxiliary requests I, VII, VIII, IX, X
- Clarity (Article 84 EPC)*

3.1 Article 84 EPC provides that the claims are to define the matter for which protection is sought and that they must be clear.

A claim lacks clarity if the exact distinctions which delimit the scope of protection cannot be learnt from it. The meaning of the essential features should be clear to the person skilled in the art from the wording of the claims alone (see Case Law, II.A.3.1).

3.2 Claim 1 of the main request and claim 1 of auxiliary requests I, VII, VIII and IX, X comprise a step of "*generating a value quantifying an amount of a target specific contrast material in a region of interest of the spectral projection image*".

3.3 For the reasons given under points 3.4 and 3.5 below, the exact distinctions which delimit the scope of protection cannot be learnt from claim 1 of the respective requests because the meaning of the features "*in a region of interest of the spectral projection image*" and "*generating a value quantifying an amount of a target specific contrast material*" is not clear from the wording of the claim alone.

3.4 *The expression "in a region of interest of the spectral projection image"*

3.4.1 Is is unclear whether the expression "*in a region of interest of the spectral projection image*" implies a step of determining a region of interest in the spectral projection image prior to generating a value quantifying an amount of a target-specific contrast

material. The nature of the region of interest is not clear either.

- 3.4.2 The paragraph bridging pages 7 and 8 of the description states that "[i]n one instance, the analyzer 140 quantifies (e.g., generates a numerical value for) the amount of contrast material in connection with the **tissue of interest** based on the K-edge image and generates a signal indicative of the quantified amount. The quantified amount may include a global value representing **all of the tissue of interest** and/or one or local values representing **predetermined sub-portions of the tissue of interest**" (emphasis added by the board).

The board disagrees with the appellants' view that the person skilled in the art reading claim 1 "with a mind willing to understand" would have understood that the region of interest was not the tissue of interest mentioned in that passage (see point XXII. above). The main example of tissue of interest given in this application is the ruptured plaque (see page 4, last full paragraph; page 7, second full paragraph; page 9, second and third full paragraphs; etc.). The last full paragraph of page 7 of the description discloses that the contrast material may include a contrast agent with nano-particles which have an affinity to the target. However, none of the examples of nano-particles listed in this paragraph seem to have the high specificity required to solely target ruptured plaques. Thus, there would have been reasons to exclude regions in the image showing tissue which is not the tissue of interest but to which the contrast agent nevertheless has an affinity, i.e. to set one or multiple regions of interest corresponding to the tissue of interest in the spectral projection image.

Therefore, one way of interpreting the expression "*region of interest*" is as relating to (the sub-portions of) the tissue of interest. This interpretation implies steps of identifying a region corresponding to (the sub-portions of) that tissue of interest prior to generating a value quantifying an amount of a target-specific contrast material.

- 3.4.3 Page 11 of the description specifies that "*[a]t 206, a spectral scout/pilot scan protocol is identified for scanning the patient. This act may include identifying at least a begin scan location of the patient. This can be determined via moving the subject support 108 to a location in the examination region 106 such that **the region of interest** of the patient will be scanned*" (emphasis added by the board).

According to that passage, the region of interest corresponds to the portion of the subject selected for scanning. This is another way of interpreting the expression "*in a region of interest of the spectral projection image*". Unlike the interpretation set out in the previous point, this interpretation does not require a step of determining a region of interest in the spectral projection image.

- 3.4.4 The board is not convinced by the appellants' argument that claim 1 is just broad.

The concept of the "mind willing to understand" means that illogical or technically nonsensical interpretations should be ruled out, not that broad terms should be interpreted more narrowly (see Case Law, II.A.6.1). The board sees no reason to consider the two possible interpretations of the expression "*in*

a region of interest of the spectral projection image" identified under points 3.4.2 and 3.4.3 above as illogical or technically nonsensical.

It is established case law that the clarity of a claim is not diminished by the mere breadth of a term of art contained in it, *"if the meaning of such term - either per se or in the light of the description - is unambiguous for a person skilled in the art"* (Case Law, II.A.3.3). In the case in hand, the expression *"in a region of interest of the spectral projection image"* is ambiguous because it can be interpreted in different ways, each having a different impact on the matter for which protection is sought. Thus, the requirement for the claim to be considered broad but not unclear is not met.

3.5 *The expression "generating a value quantifying an amount of a target specific contrast material"*

3.5.1 The natural understanding of the expression *"amount of a target specific contrast material in a region of interest"* would be as referring to **how much** target-specific contrast material is present in the region of interest. How much target-specific contrast material is present could be quantified, for example, by the number of pixels of the region of interest having a value (e.g. grey level) indicative of the presence of the target-specific contrast material, or by the total or average pixel intensity in the region of interest.

3.5.2 However, claims 16 and 17 of the application as filed equate the value quantifying this amount to *"a level of contrast in one of a plurality of regions of interests (302, 304, 306) for a same tissue of interest"* and *"a summation of respective levels of contrast in a*

plurality of regions of interests (302, 304, 306) for a same tissue of interest" respectively. The expression "level of contrast" would normally be understood as a difference in value between two or more different colours (or grey levels). It is not clear how such a difference could be indicative of **how much** target-specific contrast material there is in a region of interest of a spectral projection image. Thus, the person skilled in the art would not normally consider such an embodiment to be encompassed by the claim. This means that the patent application in hand assigns to the expression "*value quantifying an amount*" a special meaning which is not clear from the wording of the claim alone. The board finds that, in such a case, the clarity requirement cannot be met (see point 3.1 above, second paragraph).

- 3.5.3 The board also finds the term "generating" unclear. This term would normally have been understood as implying some calculations based on pixel values. However, the application in hand discloses a single "*example use-case scenario*" of the invention (see page 11, third paragraph onwards of the description). In that scenario, a "*spectral scout/pilot scan protocol*" is launched at step 206 (see page 11, second to last paragraphs). At step 214, "*the amount (global and/or local) of contrast material in the tissue of interest is determined based on the projection image*" (see page 12, third full paragraph). At step 216, "*[f]or example, ... ruptured plaque is identified as voxels having amounts of contrast material that satisfy a predetermined threshold level*" (emphasis added by the board). Since a spectral scout/pilot scan rather than a volume scan was launched at step 206, the example for step 216 is to be interpreted as meaning that ruptured plaque is

identified as pixels (rather than voxels) having amounts of contrast material that satisfy a predetermined threshold level. This means that an amount of a target-specific contrast material can be determined by simply reading out the value of pixels. Thus, it is unclear what calculations are implied by the term "generating".

- 3.5.4 None of the interpretations discussed under points 3.5.1 to 3.5.3 above are illogical or technically nonsensical. Moreover, these interpretations show the ambiguity of the expression "*generating a value quantifying an amount of a target specific contrast material*". For these reasons, the board is not convinced by the appellants' argument that this expression is just broad (see point XXIII. above).
- 3.6 In view of the above, the board comes to the conclusion that the main request and auxiliary requests I, VII, VIII, IX and X do not meet the requirements of Article 84 EPC.
4. *Auxiliary requests II, II', II'', III, IV, V and VI - Admittance (Article 13(2) RPBA 2020)*
- 4.1 Auxiliary requests II, II', II'', III, IV, V and VI were filed after notification of the summons to oral proceedings. Since this notification was issued after the date on which the RPBA 2020 entered into force, Article 13(2) RPBA 2020 applies to the question of whether to admit these requests into the appeal proceedings (see Article 25(1) and (3) RPBA 2020).
- 4.2 According to Article 13(2) RPBA 2020, any amendment to a party's appeal case made after notification of a summons to oral proceedings must, in principle, not be

taken into account unless there are exceptional circumstances which have been justified with cogent reasons by the party concerned.

- 4.3 In the case in hand, the board accepts that the fact that objections were raised for the first time in the board's communication (see point XXI. above) represent exceptional circumstances justifying the admittance of auxiliary requests II, II', II'', III, IV, V and VI into the appeal proceedings. Thus, the board, exercising its discretion pursuant to Article 13(2) RPBA 2020, admits these requests into the appeal proceedings.
5. *Auxiliary requests II, II', III, IV, V, VI - Clarity (Article 84 EPC)*
- 5.1 Unlike claim 1 of the main request and auxiliary request I, claim 1 of auxiliary requests II, II', III, IV, V and VI specifies that the value quantifying an amount of a target-specific contrast material in a region of interest of the spectral projection image "*represents pixel intensity*".
- 5.2 This amendment does not address the clarity issue raised under point 3.4 above.
- 5.3 Moreover, the board disagrees with the appellants' view that the expression "*represents pixel intensity*" excludes the consideration of levels of contrast (see point XXIII. above, second paragraph). Since a level of contrast is computed based on pixel intensities, it can also be considered as representative of pixel intensity. Therefore, this amendment does not overcome the clarity issues raised under point 3.5 above.

5.4 In view of the above, the board comes to the conclusion that auxiliary requests II, II', III, IV, V and VI do not meet the requirements of Article 84 EPC.

6. *Auxiliary requests II'' - Clarity (Article 84 EPC)*

6.1 Claim 1 of auxiliary request II'' specifies that the value quantifying an amount of a target-specific contrast material is generated "*based on the spectral projection image*". Thus, unlike claim 1 of the other requests, claim 1 does not refer to a region of interest.

6.2 This amendment does not address the clarity issues raised under point 3.5 above. Therefore, the board comes to the conclusion that auxiliary request II'', does not meet the requirements of Article 84 EPC.

7. *Conclusion*

Since none of the requests on file is allowable, the appeal must be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chair:



K. Boelicke

B. Willems

Decision electronically authenticated