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Datasheet for the decision of 21 September 2023

Case Number: T 1699/21 - 3.4.02

Application Number: 17169753.5

Publication Number: 3244191

IPC: G01N15/14, G06F17/14

Language of the proceedings: EN

Title of invention:
METHOD AND SYSTEM FOR CHARACTERIZING PARTICLES USING A FLOW CYTOMETER

Applicant:
Deutsches Rheuma-Forschungszentrum Berlin
A·P·E Angewandte Physik & Elektronik GmbH

Headword:

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

Keyword:
Remittal to the department of first instance - (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

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Case Number: T 1699/21 - 3.4.02

D E C I S I O N
of Technical Board of Appeal 3.4.02
of 21 September 2023

Appellant: (Applicant 1)	Deutsches Rheuma-Forschungszentrum Berlin Charitéplatz 1 10117 Berlin (DE)
Appellant: (Applicant 2)	A·P·E Angewandte Physik & Elektronik GmbH Plauener Strasse 163-165 / Haus N 13053 Berlin (DE)
Representative:	Hertin und Partner Rechts- und Patentanwälte PartG mbB Kurfürstendamm 54/55 10707 Berlin (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 15 March 2021 refusing European patent application No. 17169753.5 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman	R. Bekkering
Members:	A. Hornung
	T. Karamanli

Summary of Facts and Submissions

I. The applicant lodged an appeal against the decision of the examining division refusing European patent application No. 17169753.5 on the basis of Article 97(2) EPC because the main request and auxiliary request II then on file did not satisfy the requirements of Article 54(1) and (2) EPC, auxiliary request I then on file did not meet the requirements of Article 123(2) EPC and auxiliary request III then on file did not contain any text that was submitted and approved by the applicant on which the examining division could base its decision.

II. Oral proceedings before the board were held on 21 September 2023.

III. At the end of oral proceedings, the applicant stated that it requested that the decision under appeal be set aside and that a patent be granted, as a main request, on the basis of the claims of auxiliary request 1b filed by letter dated 21 August 2023, or, alternatively, on the basis of the claims of one of auxiliary requests 1c or 2*, both filed by letter dated 21 August 2023, or auxiliary request 2 filed with the statement of grounds of appeal, or auxiliary requests 2a, 2b or 3*, all filed by letter dated 21 August 2023, or auxiliary request 3 filed with the statement of grounds of appeal, or auxiliary request 4* filed by letter dated 21 August 2023, or auxiliary request 4 filed with the statement of grounds of appeal, or auxiliary requests 4a, 4b, 5*, all filed by letter dated 21 August 2023, or auxiliary request 5 filed with the statement of grounds of appeal, or auxiliary requests 5a, 5b, 6*, all filed by letter dated 21 August 2023, or auxiliary request 6 filed with the statement of grounds of

appeal, or auxiliary requests 6a, 6b, 6c, all filed by letter dated 21 August 2023, or auxiliary request 7 filed with the statement of grounds of appeal, or auxiliary requests 7a, 7b, 7c and 7d, all filed by letter dated 21 August 2023.

IV. The following documents, which were relied on in the first-instance examination proceedings, are referred to in the present decision:

D1: "Wavelet Analysis of Flow Cytometric Information", David W. Galbraith, 29 September 2001, retrieved from the Internet on 12 April 2017: URL:https://arizona.pure.elsevier.com/en/projects/wavelet-analysis-of-flow-cytometric-information; XP055364196;

D2: "Wavelet Analysis of Flow Cytometric Information", David W. Galbraith, 29 September 2001, retrieved from the Internet on 12 April 2017: URL:http://grantome/grantNIH/R21-CA082080-02; XP055364302;

D11: "Performance Analysis of a Dual-Buffer Architecture for Digital Flow Cytometry", Shiva Murthi et al., Cytometry Part A 66A, pages 109-118 (2005); XP002519271.

In addition, the board introduced the following document D12 into the proceedings:

D12: "Identification of Marine Microalgae by Neural Network Analysis of Simple Descriptors of Flow Cytometric Pulse Shapes", M.F. Wilkins et al., Ecological Informatics: Scope, Techniques and Applications, edited by Friedrich Recknagel, Springer Berlin / Heidelberg, 2006, pages 431 to 443; XP009534626

V. Claim 1 of auxiliary request 1b filed by letter dated 21 August 2023 (main request) reads as follows:

"A method for characterizing particles using a flow cytometer comprising:

a. passing of one or more particles in a fluid stream through a light beam of the flow cytometer,

b. detecting radiated light as one or more particles pass through the light beam,

c. generating a waveform which is a digital representation of the detected radiated light, and

d. transforming said waveform using one or more basis functions and obtaining one or more coefficients characterizing the waveform, the waveform is transformed by a wavelet transformation, the one or more basis functions are wavelets and the one or more coefficients characterizing the waveform are wavelet coefficients,

wherein the method comprises the step of determining at least one biological and/or physical property of the particles based upon the one or more coefficients characterizing the waveform by comparing the one or more coefficients of analyzed particles to a set of calibration coefficients previously obtained from calibration particles for which the at least one biological and/or physical property was known."

Claim 11 of auxiliary request 1b filed by letter dated 21 August 2023 (main request) reads as follows:

"Flow cytometry system comprising:
- a source for a fluid and particles,

- a fluid nozzle configured to generate a fluid stream comprising the particles,
- a light source configured to generate a light beam that illuminates the fluid stream comprising the particles,
- a detector configured to detect the radiated light of the particles, and
- a processing unit configured to generate a waveform based upon the detected radiated light,

characterized in that the processing unit is configured to transform said waveform using one or more basis functions and obtaining one or more coefficients characterizing the waveform that allow for determining at least one biological and/or physical property of the particles based upon the one or more coefficients characterizing the waveform, wherein the waveform is transformed by a wavelet transformation, the one or more basis functions are wavelets and the one or more coefficients characterizing the waveform are wavelet coefficients and wherein the processing unit is further configured to compare the one or more coefficients of analyzed particles to a set of calibration coefficients previously obtained from calibration particles for which the at least one biological and/or physical property was known".

Reasons for the Decision

1. Main request

1.1 Amendments

1.1.1 Claim 1 of the present main request has been amended with respect to claim 1 as originally filed by the addition of the following features F1 to F3:

F1: "the waveform is transformed by a wavelet transformation, the one or more basis functions are wavelets and the one or more coefficients characterizing the waveform are wavelet coefficients",

F2: "wherein the method comprises the step of determining at least one biological and/or physical property of the particles based upon the one or more coefficients characterizing the waveform",

F3: "by comparing the one or more coefficients of analyzed particles to a set of calibration coefficients previously obtained from calibration particles for which the at least one biological and/or physical property was known".

The board concurs with the applicant that support for these amendments is disclosed in the patent application as originally filed as follows:

- F1: see claim 2, page 4, lines 25 to 36 and page 5, lines 10 and 11, of the patent application as originally filed,

- F2: see page 8, lines 4 to 10, of the patent application as originally filed,

- F3: see page 3, lines 8 to 14 and page 14, lines 16 to 22, of the patent application as originally filed.

Therefore, claim 1 complies with the requirements of Article 123(2) EPC.

1.1.2 Claim 11 comprises device features corresponding to the method steps of claim 1. Present claim 11 has been amended with respect to claim 12 as originally filed in the same

way as present claim 1 has been amended with respect to claim 1 as originally filed.

Therefore, claim 11 complies with the requirements of Article 123(2) EPC for the same reasons as those given for claim 1.

1.2 Clarity

The board had raised clarity objections for the first time in the communication under Article 15(1) RPBA 2020 annexed to the summons to oral proceedings before the board. The board is satisfied that the amendments of claims 1 and 11 overcome the board's clarity objections.

Therefore, claims 1 and 11 meet the requirements of Article 84 EPC.

1.3 Novelty

Neither document D11 nor D12 discloses the feature of claims 1 and 11 according to which "the waveform is transformed by a wavelet transformation".

Therefore, the subject-matter of claims 1 and 11 is novel over documents D11 and D12 (Article 54(1) EPC).

2. Remittal

2.1 According to the appealed decision, the subject-matter of claim 1 of the main request then on file lacked novelty with respect to document D11. This objection is overcome, since the subject-matter of claim 1 of the present main request is novel over document D11.

2.2 In addition, the board is satisfied that claims 1 and 11 of the main request meet the requirements of Articles 123(2) and 84 EPC.

However, further requirements of the EPC remain to be examined, *inter alia* the requirements of Articles 84 and 123(2) EPC with respect to the dependent claims 2 to 10 and 12 to 14, the requirement of Article 54 EPC in view of the available prior art except D11 and D12, and the requirement of Article 56 EPC in view of the entire available prior art.

The significant scope of the pending examination of the application would thus require the board to go far beyond the primary object of the appeal proceedings to review the appealed decision in a judicial manner (Article 12(2) RPBA 2020). This constitutes a "special reason" within the meaning of Article 11 RPBA 2020. Therefore, the board considers it appropriate to remit the case to the examining division for further prosecution under Article 111(1), second sentence, EPC.

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 for further prosecution.

The Registrar: The Chairman:

L. Gabor R. Bekkering

Decision electronically authenticated