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**Datasheet for the decision
of 10 December 2019**

Case Number: T 1499/17 - 3.5.05

Application Number: 11874850.8

Publication Number: 2771830

IPC: G06F19/26, G06F19/12,
                               G06F19/24, G06F19/00

Language of the proceedings: EN

Title of invention:
PATHWAY RECOGNITION ALGORITHM USING DATA INTEGRATION ON
GENOMIC MODELS (PARADIGM)

Applicant:
The Regents of the University of California

Headword:
Pathway recognition/UC

Relevant legal provisions:
EPC Art. 84, 54, 56
RPBA Art. 12(4)

Keyword:
Claims - clarity (no)
Novelty - (no)

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Decisions cited:

Catchword:

Case Number: T 1499/17 - 3.5.05

D E C I S I O N
of Technical Board of Appeal 3.5.05
of 10 December 2019

Appellant: The Regents of the University of California
(Applicant)   1111 Franklin Street, 12th Floor
                          Oakland, CA 94607 (US)

Representative: Elkington and Fife LLP
                          Prospect House
                          8 Pembroke Road
                          Sevenoaks, Kent TN13 1XR (GB)

Decision under appeal: **Decision of the Examining Division of the**
                          European Patent Office posted on 6 February 2017
                          refusing European patent application No.
                          11874850.8 pursuant to Article 97(2) EPC.

Composition of the Board:

Chair   A. Ritzka
Members: E. Konak
               G. Weiss

Summary of Facts and Submissions

I.   The appeal is against the decision of the examining
        division to refuse the application for lack of clarity
        (Article 84 EPC) and lack of inventive step (Article 56
        EPC) with regard to the following document:

        D1: C. Vaske et al., "Inference of patient-specific
        pathway activities from multi-dimensional cancer
        genomics data using PARADIGM", Bioinformatics, Volume
        26, Issue 12, 2010, pages i237-i245.

II.   With its statement setting out the grounds of appeal,
        the appellant filed claims 1 to 7 of a main request.
        The appellant requested that the decision be set aside
        and a patent be granted based on this main request. It
        requested remittal of the case to the examining
        division for further prosecution and oral proceedings
        as auxiliary measures.

III.   In its preliminary opinion, the board raised objections
        under Articles 84 and 56 EPC. The board further
        informed the appellant that the request for remittal
        seemed not to be admissible (Article 12(4) RPBA).

IV.   The appellant did not reply to the summons to oral
        proceedings in substance, but merely informed the board
        that it would not be attending the oral proceedings.

V.   Oral proceedings were held before the board in the
        absence of the appellant.

VI.   Claim 1 of the main request reads as follows:

        "A pathway analysis ecosystem (100), comprising:

pathway element database (120) configured to store a
plurality of pathway elements (125), each pathway
element being characterized by its involvement in at
least one pathway and being selected from a protein or
nucleic acid;
a modification engine (110), communicatively coupled to
the pathway element database (120);
wherein the modification engine (110) is configured to
associate a first pathway element with at least one a
priori known attribute (133) selected from the group
consisting of a gene copy number, a transcription
level, a translation level, and a protein activity; and
wherein the modification engine (110) is configured to
associate a second pathway element with at least one
assumed attribute (137) selected from the group
consisting of a gene copy number, a transcription
level, a translation level, and a protein activity, and
wherein the kind and value of the assumed attribute
(137) is a function of a reference pathway; and
wherein the modification engine (110) is configured to
cross-correlate and assign an influence level (145) of
the first and second pathway elements for at least one
pathway using the known and assumed attributes (133),
(137), respectively, to form a probabilistic pathway
model (140); and
an analysis engine (160), configured to use the
probabilistic pathway model (140) to derive from a
plurality of measured attributes (173) of a plurality
of pathway elements (125) of a patient sample, the
plurality of measured attributes (173) being selected
from the group consisting of a mutation, a gene copy
number, a transcription level, a translation level, a
protein activity, and a protein interaction, the
dynamic pathway map (165) that can indicate deviations
from the probabilistic pathway model (140), and which
provides reference pathway activity information for a

particular pathway and which is specific with respect
to a normal tissue, a diseased tissue, an ageing
tissue, or a recovering tissue, wherein the analysis
engine (160) configures one or more output devices to
present the dynamic pathway map (165), and
wherein the pathway is within a regulatory pathway
network."

Reasons for the Decision

1.   Clarity (Article 84 EPC)

1.1   The term "[pathway analysis] ecosystem" used in claim 1
        is unclear. The appellant added this term to the claims
        during the examination proceedings, arguing that system
        claims are usually granted at the EPO and that it is
        clear that the claim pertains to a system for analysing
        pathways. The board does not agree with these
        arguments. In the European patent system, a claim for a
        system is understood as a claim for an apparatus.
        Whereas system or apparatus claims are a well-
        established claim category, claims for an "ecosystem"
        are unheard of. An "ecosystem" neither has an
        established meaning in the relevant art nor can be
        construed as an apparatus solely because it has the
        word "system" as a sub-string.

1.2   More crucially, the board agrees with the contested
        decision that it is not clear in claim 1 how the term
        "a priori known attribute" differs from the term
        "assumed attribute". These terms have no established
        meaning in the relevant art. The appellant's arguments
        to the contrary in the statement setting out the
        grounds of appeal do not convince the board. The
        appellant merely argued that the terms are sufficiently
        explained in paragraph [0161] of the description.

However, the requirement for clarity under Article 84 EPC concerns the claims, not the description. The claims have to be clear by themselves.

1.3   Therefore, claim 1 is not clear (Article 84 EPC).

2.   Novelty (Article 54(1) and (2) EPC)

2.1   The contested decision considered D1 to represent the closest prior art and the subject-matter of claim 1 to differ from the disclosure of D1 only in that "assumed" attributes are used for forming a probabilistic pathway model.

2.2   The appellant did not dispute this assessment but the examining division's assessment that the only distinguishing feature of claim 1 is unclear (see 1.2 above) and its conclusion that an unclear feature cannot be relied upon to establish an inventive step.

2.3   Paragraph [0161] of the description, on which the appellant relies for the definition of the disputed terminology, states that "a priori known attributes" are known from prior study and publication, whereas "assumed attributes" are not known but can be assumed with a reasonably good expectation of accuracy. However, its epistemological properties, i.e. whether its information content is known from prior publications or is assumed, cannot delimit the attribute feature processed in a system.

2.4   Therefore, the subject-matter of claim 1 is not new (Article 54(1) and (2) EPC).

3.   Request for remittal to the examining division

3.1   In the statement setting out the grounds of appeal, the
        appellant further requested remittal of the case to the
        examining division for further prosecution, but it did
        not substantiate this request. It is established case
        law of the boards of appeal that unsubstantiated
        requests cannot be considered in appeal proceedings
        (see "Case Law of the Boards of Appeal of the European
        Patent Office", 9th edition 2019, V.A.4.12.5,
        "Unsubstantiated requests"). Therefore, the board does
        not admit this request (Article 12(4) RPBA).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

K. Götz-Wein   A. Ritzka

Decision electronically authenticated