Internal distribution code:

(A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

Datasheet for the decision of 19 October 2023

Case Number: T 2090/19 - 3.5.06

Application Number: 13715903.4

Publication Number: 2826002

IPC: G06N5/02, G06N5/04

Language of the proceedings: EN

Title of invention:
AN INNOVATION EXPERT SYSTEM, IES, AND ITS PTR DATA STRUCTURE, PTR-DS

Applicant:
Sigram Schindler Beteiligungsgesellschaft mbH

Headword:
IES expert system/SCHINDLER

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

Keyword:
Claims - clarity - main request (no)
First and second auxiliary request - admittance under Article 12(4) RPBA 2007 (no) - could have been filed in first instance proceedings

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
Office européen des brevets

Beschwerdekammern

Boards of Appeal

Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 2090/19 - 3.5.06

D E C I S I O N
of Technical Board of Appeal 3.5.06
of 19 October 2023

Appellant: (Applicant)	Sigram Schindler Beteiligungsgesellschaft mbH Inselstrasse 24-26 14129 Berlin (DE)
Representative:	Sigram Schindler Beteiligungsgesellschaft mbH Inselstrasse 24-26 14129 Berlin (DE)
Decision under appeal:	**Decision of the Examining Division of the European Patent Office posted on 14 February 2019 refusing European patent application No. 13715903.4 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chair	A. Jimenez
Members:	T. Alecu
	M. Domingo Vecchioni

Summary of Facts and Submissions

I. The appeal is against the decision of the Examining Division. The application was refused inter alia for lack of clarity (Article 84 EPC).

II. The Appellant requested with the statement of grounds of appeal that the decision of the Examining Division be set aside and that a patent be granted on the basis of claim 1 of the main request, or on the basis of claim 1 of one of two auxiliary requests. The main request is identical to the one underlying the decision under appeal. The first and second auxiliary requests were filed with the statement of grounds of appeal. The first auxiliary request corresponds to a previous version of the main request (filed on 15 April 2016).

III. In a communication accompanying a summons to oral proceedings the Board informed the Appellant that it tended to confirm the decision of the Examining Division that the main request lacked clarity. It also questioned the admittance of the auxiliary requests (Article 12(4) RPBA 2007).

IV. The decision was announced in oral proceedings held in the absence of the Appellant, duly summoned but not appearing (Article 15(3) RPBA 2020).

V. Claim 1 of the main request defines:

A computer-implemented method for generating for a "given pair of technical teaching TT.O and corresponding reference set of prior art document.i, PTR" a data structure "PTR-DS" for use by an expert

system, the computer system executing the method having a processor for generating and a memory for storing PTR-DS, the method comprising:
▪ receiving a document.0 with marked-up items ("doc.0-MUs") of information disclosing a technical teaching TT.0, receiving a reference set ("RS") of document.i with marked-up items ("doc.i-MUIs") disclosing technical teachings TT.i, i=1,2,3,.., and writing all document.i, i=0,1,2, ... , and their marked-up items ("MUIs") - any one called a "subject matter item" - into the PTR-DS;
▪ receiving a context document ("document.CT"), comprising an authority's directives consisting of documents of a National Patent System with marked-up items ("doc.CT-MUIs") of their wordings, and writing document.CT and its marked-up items ("MUIs") - any one called a "legal item" - into the PTR-DS;
and creating further items of both kinds by the execution of this method as determined by its following steps:
(a) identifying for a claim of TT.0 and its underlying document.0"
.1 one element and generating a set comprising it, and writing said set into the PTR-DS;
.2 a property of said element and generating a set comprising it, and writing said set into the PTR-DS;
.3 at least one creative binary independent concept - such that the conjunction of their mirror predicates describes said property - generating for each and only this one a set comprising it, and writing any said set into the PTR-DS;
(b) generating for any set generated in (a) a set of doc.0-MUIs disclosing its element and writing said set into the PTR-DS;
(c) generating for any set generated in (b) a set of items of doc.CT-MUIs ("I.CTs") justifying it and

writing said set into the PTR-DS;
repeating the steps (d)-(f) for any document.i, i>0, and therein with any item peer to one generated in (a).1 or (a).3:
(d) generating a set comprising of TT.i either an element peer to one in step (a), 1 - if this peer element is not existent, replace it by a dummy peer element - or a binary independent concept of TT.i peer to one in step (a).3 - if it is not existent or not equal to its peer in TT.0, replace it by a dummy peer concept - and writing said set into the PTR-DS;
(e) generating for any set generated in (d) a set of doc.i-MUIs disclosing in doc.i the item replaced in (d) and writing said set into the PTR-DS;
(f) generating for any set generated in (e) a set of I.CTs justifying it and writing said set into the PTR-DS;
(g) generating the set of all anticipation combinations ("AC") based on the replacements of (d) and writing it into the PTR-DS;
(h) generating for any AC generated in (g) the set of a shortest sequences of Q 1-concept creations ("1-CCs") such that AC/mod(Q 1-CC) anticipates TT.0, and writing said set into the PTR-DS;
(i) generating for any sequence of Q 1-CCs generated in (h) a set of I.CTs justifying it and writing said set into the PTR-DS;
(j) generating for sets generated in (a)-(i), a concatenation of which represents a test T, a set of argument chains as to this T, whereby any chain is limited to comprising sets from (a)-(i) as links, which are joined together by natural language fragments,
(k) generating for any set generated in (a)-(j) a real-time-access set, if it is needed for guaranteeing that this set's retrieval and presentation is terminated in dialog-real time and writing said set into the PTR-DS.

VI. Claim 1 of the first auxiliary request defines

A computer-implemented method for generating for a "given pair of new technical teaching TT.0 and corresponding reference set of prior art document.i, PTR" a data structure "PTR-DS" for use by an expert system, the computer system executing the method having a processor for generating and a memory for storing PTR-DS, the method comprising:

▪ *receiving a document.0 with marked-up items ("doc.O-MUIs") of information disclosing a new technical teaching TT.0, receiving a reference set ("RS") of documents with marked-up items ("doc.i-MUIs") disclosing technical teachings TT.i, i=1,2,3,.., and writing all document.i, i=0,1,2, ... , and their marked-up items ("MUIs") - any one called a "subject matter item" - into the PTR-DS;*

▪ *receiving a context document ("document.CT"), comprising an authority's directives consisting of legal information with marked-up items ("doc.CT-MUIs") of their wordings, and writing document.CT and its marked-up items ("MUIs") - any one called a "legal item" - into the PTR-DS;*

and creating further items of both kinds by the execution of this method as determined by its following steps:

(a) identifying of TT.0 of a claim of document.0

.1 one element and generating a set comprising it, and writing said set into the PTR-DS;

.2 a property of said element and generating a set comprising it, and writing said set into the PTR-DS;

.3 at least one creative binary independent concept - such that the conjunction of their mirror predicates describes said property - generating for each and only

this one a set comprising it, and writing any said set into the PTR-DS;
(b) generating for any set generated in (a) a set of doc.0-MUIs disclosing its element and writing said set into the PTR-DS;
(c) generating for any set generated in (b) a set of items of doc.CT-MUIs ("I.CTs") justifying it and writing said set into the PTR-DS;
repeating the steps (d)-(f) for any document.i, i>0, and therein with any item peer to one generated in (a).1 or (a).3:
(d) generating a set comprising of TT.i either an element peer to one in step (a), 1 - if this peer element is not existent, replace it by a dummy peer element - or a binary independent concept of TT.i peer to one in step (a).3 - if it is not existent or not equal to its peer in TT.0, replace it by a dummy peer concept - and writing said set into the PTR-DS;
(e) generating for any set generated in (d) a set of doc.i-MUIs disclosing in doc.i the item replaced in (d) and writing said set into the PTR-DS;
(f) generating for any set generated in (e) a set of I.CTs justifying it and writing said set into the PTR-DS;
(g) generating the set of all anticipation combinations ("AC") based on the replacements of (d) and writing it into the PTR-DS;
(h) generating for any AC generated in (g) the set of a shortest sequences of Q 1 -concept creations ("1-CCs") such that AC/mod(Q 1-CC) anticipates TT.0, and writing said set into the PTR-DS;
(i) generating for any sequence of Q 1-CCs generated in (h) a set of I.CTs justifying it and writing said set into the PTR-DS;
(j) generating for sets generated in (a)-(i), a concatenation of which represents a test T, a set of

argument chains as to this T, whereby any chain is limited to comprising sets from (a)-(i) as links, which are glued together by natural language fragments,
(k) generating for any set generated in (a)-(j) a real-time-access set, if it is needed for guaranteeing that this set's retrieval and presentation is terminated in dialog-real time and writing said set into the PTR-DS.

VII. Claim 1 of the second auxiliary request defines

A computer-implemented method for generating, for a creativity/inventivity embodied by a innovation/TT.0 alias invention over prior art, RS, indicated by the number of independent thoughts indispensably needed for finding TT.O when starting the search for it from RS as a solution of "Problem of TT.0 and RS, PTR", a data structure "PTR-DS" for use by an expert system, the computer system executing the method having a processor for generating and a memory for storing PTR-DS, the method comprising:
▪ receiving a document.0 with marked-up items ("doc.0-MUIs") of information disclosing a technical teaching TT.0 having a claim, receiving a reference set ("RS") of document.i with marked-up items ("doc.i-MUIs") disclosing technical teachings TT.i, i=1,2,3,.. which potentially anticipate TT.0, and writing all document.i, i=0,1,2, ... , and their marked-up items ("MUIs") - any one called a "subject matter item" - into the PTR-DS;
▪ receiving a context document ("document.CT"), with marked-up items ("doc.CT-MUIs") of their wordings, taking into account all of a patent law and its precedents/examination-directives, and writing document.CT and its marked-up items ("MUIs") - any one called a "legal item" - into the PTR-DS;

and creating further items of both kinds by the execution of this method as determined by its following steps:
(a) identifying of TT.0 of a claim of document.0
.1 one element, being a keyword of the claim's wording, and generating a set comprising it, and writing said set into the PTR-DS;
.2 a property of said element and generating a set comprising it, and writing said set into the PTR-DS;
.3 at least one creative binary independent concept - such that the conjunction of their mirror predicates describes said property - generating for each and only this one a set comprising it, and writing any said set into the PTR-DS, wherein the creative independent concept is an independent thought, and the binary concept enables exactly describing and/or analyzing all properties of all the elements of claimed inventions, as required by patent jurisdiction;
(b) generating for any set generated in (a) a set of doc.0-MUIs disclosing its element and writing said set into the PTR-DS;
(c) generating for any set generated in (b) a set of items of doc.CT-MUIs ("I.CTs") justifying it and writing said set into the PTR-DS;
repeating the steps (d)-(f) for any document.i, i>0, and therein with any item peer to one generated in (a).1 or (a).3:
(d) generating a set comprising of TT.i either an element peer to one in step (a).1 - if this element peer to one in step (a).1 is not existent, replace it by a dummy element peer to one in step (a).1 - or a binary independent concept of TT.i peer to one in step (a).3 - if it is not existent or not equal to its peer in TT.0, replace it by a dummy concept peer to one in step (a).3 - and writing said set into the PTR-DS;

(e) generating for any set generated in (d) a set of doc.i-MUIs disclosing in doc.i the item replaced in (d) and writing said set into the PTR-DS;
(f) generating for any set generated in (e) a set of I.CTs justifying it and writing said set into the PTR-DS;
(g) generating the set of all anticipation combinations ("AC") based on the replacements of (d) and writing it into the PTR-DS;
(h) generating for any AC generated in (g) the set of a shortest sequences of Q 1 -concept creations ("1-CCs") such that AC/mod(Q 1-CC) anticipates TT.0, and writing said set into the PTR-DS;
(i) generating for any sequence of Q 1-CCs generated in (h) a set of I.CTs justifying it and writing said set into the PTR-DS;
(j) generating for sets generated in (a)-(i), a concatenation of which represents a test T, a set of argument chains as to this T, whereby any chain is limited to comprising sets from (a)-(i) as links, which are glued together by natural language fragments, wherein the argument chains comprise complete answers to any one of only finitely many meaningful questions as to indicating/justifying e.g. TT.0's creative/ inventive height over its prior art RS,
(k) generating for any set generated in (a)-(j) a real-time-access set, if it is needed for guaranteeing that this set's retrieval and presentation is terminated in dialog-real time and writing said set into the PTR-DS.

Reasons for the Decision

The application

1. The application relates to an Innovation Expert System (IES) and a corresponding data structure (PTR-DS), said to be supporting the derivation of "*all technical and legal facts alias relations between*" an innovation/ invention and the prior art, and "*leveraging on this analysis instantly recognizing and answering any reasonable query for any such relation*" (see page 1, second paragraph).

2. According to claim 1 of all requests the system relies on a set of documents in which the "*technical teaching*" (TT) is marked-up and on a set of context documents in which "*legal items*" are marked-up. For each TT (be it the innovation or part of the prior art), the system identifies its "*elements*", the "*properties*" of said elements, and "*at least one creative binary independent concept*", and also generates sets of such elements, properties and concepts comprising the identified ones. These are written into the PTR-DS together with the documents disclosing the sets and with a set of items "*justifying it*" derived from the context documents.

2.1 This structure is used to generate sets of anticipation combinations for the innovation to be analysed, together with a corresponding chain of arguments.

Clarity

3. The Examining Division was of the opinion (decision point 16) that the term "*technical teaching*" was not clearly defined for the skilled person, who was to be understood as a technically skilled person in the field of computer-implemented inventions. It stated inter alia (ibid. 16.1.4): "*The relation between a concept,*

an element and a technical teaching is not technically defined, and the relation to these other terms cannot serve as a basis of interpretation of the term 'technical teachings'". These terms themselves were also unclear (ibid. 16.3).

4. The Appellant argues (statement of grounds of appeal pages 3 to 5) inter alia that:

"A 'technical teaching' is disclosed by a document and comprised by an innovation alias invention, see page 1, 1st paragraph. The technical teaching comprises elements as keywords of a claim's wording, see page 4, point (a) in combination with page 41, point ii).

TT.o, i.e. the technical teaching of document.o, is indicated by the number of independent thoughts (alias creative/inventive concept, see below) indispensably needed for finding TT.o when starting the search for it from prior art document(s), see page 6, 3rd paragraph.

[..]

The determination of creative/inventive concepts based on logic and independent concept disaggregation is scientifically indispensable for any problem analysis. It hence enables determining an invention's creative/ inventive alias semantic height over pertinent ordinary skill and creativity ('posc') and prior art ('pa'); see page 51, penultimate paragraph.

A 'concept' has the fundamental role as (non)obviousness indicators for an invention, see page 35, 2nd paragraph, page 36, 4th paragraph. A 'creative/ independent concept' is synonymous to an independent thought, see page 9, first bullet point, page 38, 2nd

paragraph, page 40, penultimate paragraph, whereas a 'binary concept' is called 'binary' if the value of this concept is either true or false. For every binary concept of the invention a truth set can be defined which enables exactly describing and/or analyzing all properties of all the elements of claimed inventions, as required by patent jurisdiction, see page 8, 3rd paragraph.

[...]

The definition of the terms is clear and has not to be included into claim 1, since a patent may be its own dictionary, according to T 311/93, T 1321/04, T 1388/09."

5. The Board notes that the claim defines a scheme for comparing a "*technical teaching*" with technical teachings of provided prior art. The implementation of the claimed matter requires that the claimed features, in particular the method steps where items or facts are identified or generated by the computer, be clear to the skilled person. For this, it must be clear at least what the elements of a technical teaching are, and what the generation process entails.

6. In this case the Board notes in particular that, even when taking account of the description as argued by the Appellant:

(i) it is not clear which "*keywords of the claim's wording*", as the Appellant argues that the elements should be understood, may be "*identified*" as elements of a technical teaching;

(ii) it is not clear what the corresponding *properties* of these elements (thus of the keywords) may be;

(iii) it is not clear when is a *thought* or a *concept independent*, even if they are understood to be *synonymous*, as the Appellant argues;

(iv) even less is it clear how sets comprising the identified elements, properties or concepts may be "*generated*" therefrom or what it may mean that (presumably legal) items from the context documents *justify* such a set.

7. Thus the Board agrees with the Examining Division that claim 1 is not clear, Article 84 EPC.

Auxiliary requests

8. The Board remarks that auxiliary request 1 is identical to a request that has been filed at some point during examination (on 15 April 2016) but was ultimately not maintained in the first instance proceedings (replaced on 17 December 2018). Both this request and auxiliary request 2 could, and should, have been presented (again) at first instance, as they address objections discussed with the Appellant at length during the examination proceedings (namely clarity). The Appellant had the opportunity to present these requests but decided otherwise (see minutes of the oral proceedings before the Examining Division at point 3.49). The Board also does not see that these requests are suitable to solve the objection above. It therefore decides to exercise its discretion not to admit these requests (Article 12(4) RPBA 2007).

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chair:

L. Stridde A. Jimenez

Decision electronically authenticated