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**Datasheet for the decision
of 8 July 2011**

Case Number: T 0209/08 - 3.5.05

Application Number: 03721272.7

Publication Number: 1618509

IPC: G06F 19/00

Language of the proceedings: EN

Title of invention:

Segmental coding method and apparatus

Applicant:

Konuralp, Cüneyt

Headword:

Segmental coding method and apparatus/KONURALP

Relevant legal provisions:

EPC Art. 56, 84, 123(2)

Relevant legal provisions (EPC 1973):

-

Keyword:

"Clarity and support by the description - yes, after amendment"

"Extension of subject-matter - no, after amendment"

"Inventive step - yes, after amendment"

Decisions cited:

J 0010/07

Catchword:

-



Case Number: T 0209/08 - 3.5.05

D E C I S I O N
of the Technical Board of Appeal 3.5.05
of 8 July 2011

Appellant:

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Representative:

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 2 August 2007
refusing European application No. 03721272.7
pursuant to Article 97(1) EPC 1973.

Composition of the Board:

Chair: A. Ritzka
Members: P. Corcoran
D. Prietzel-Funk

Summary of Facts and Submissions

- I. This is an appeal against the decision of the examining division to refuse the European patent application No. 03 721 272.7, originally filed as international application PCT/TR2003/000034 and published as WO 2004/097709 A1. The decision was announced in oral proceedings held on 15 May 2007 and written reasons were dispatched on 2 August 2007.
- II. The decision under appeal was based on a main and sole request comprising a set of claims 1 to 15 filed with the letter dated 11 January 2007. The examining division found that claims 1 and 10 of the request lacked an inventive step.
- III. Notice of appeal was received at the EPO on 10 October 2007 with the appropriate fee being paid on the same date. A statement setting out the grounds of appeal was received at the EPO on 12 December 2007. The appellant filed a new main request comprising claims 1 to 14 with said statement.
- IV. In a communication accompanying a summons to oral proceedings to be held on 8 July 2011 the board gave its preliminary opinion that the applicant's request was not allowable.
- V. The board raised objections under Articles 84 and 123(2) EPC. It was further noted that the "segmental coding and reporting method" disclosed in the application appeared to be a purely intellectual activity, preferably to be used for reporting the result of a medical diagnosis. The format of the "formulae"

underlying said method represented a logical syntax for data structures and, as such, appeared to constitute a mere presentation of information and thus to relate to subject-matter which, as such, was ineligible for patent protection having regard to the provisions of Articles 52(2) and 52(3) EPC.

The board expressed doubts as to whether the subject-matter of claim 1 went beyond the specification of a general purpose computerised database system which was used in a technically conventional manner to automate the management of reports whose cognitive information content was formatted in accordance with the aforementioned coding and reporting method. On this basis, the board had reservations as to whether an inventive step could be acknowledged in respect of the claimed subject-matter.

VI. The board made reference *inter alia* to the following document which it considered to be relevant to the question of inventive step:

D6: WO 01/11548 A.

D6 had been cited during oral proceedings before the department of first instance and was referred to in an *obiter dictum* of the decision under appeal.

VII. With a letter of reply dated 8 June 2011, the appellant filed a new main request and five auxiliary requests, each of said requests consisting of a single independent claim. Amendments to the description and drawings were also submitted and, in addition thereto, further documents (Appendix I to Appendix III) containing an angiogram and an associated diagram of the vascular system, a diagrammatic representation of a

heart with labels showing the different parts of the vascular system and a set of PowerPoint slides relating to the DICOM patient coordinate system referred to in D6.

VIII. At the oral proceedings held as scheduled on 8 July 2011, the appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the main request as filed during oral proceedings, said request consisting of a single independent claim (hereinafter referred to as claim 1). The auxiliary requests filed with the letter dated 8 June 2011 were withdrawn.

IX. The further application documents on which the appeal is based are as follows:

Description, pages:

1-17 as filed with the letter dated 8 June 2011;

Drawings, figures:

1-3 as filed with the letter dated 8 June 2011.

X. Claim 1 reads as follows:

"Computer apparatus for implementing a method of coding conditions and information embedded in a coronary angiogram and incorporating a program according to an algorithm for easing mapping, storing predetermined code tables for different fields of a formula, inputting information, creating said formulae, forming a final report, storing the report, outputting said report, drawing a customised diagram from said formulae, and searching a database having a plurality of said reports; wherein

- (a) a first of said tables (table 1) stores a plurality of condition codes and, in association with each of said condition codes, the name of the pathological condition to which the respective code relates;
- (b) a second of said tables (table 2) stores a plurality of location codes and, in association with each of said location codes, the name of the location to which the respective location code relates, said locations being
 - (i) the ostia and the primary, secondary, tertiary and quaternary branches therefrom,
 - (ii) grafts, and
 - (iii) extracoronary chambers;
- (c) a third of said tables (table 3) stores key symbols for defining spatial positions and, in association with said key symbols, the meanings of the respective key symbols; and
- (d) said fields of each formula comprise
 - (i) a first field which contains a said condition code to identify the condition to which the formula relates and a sequence number for said condition,
 - (ii) a second field which contains a said location code to identify the site of the condition identified in the first field, and

(iii) a third field which contains appropriate ones of said location codes and said key symbols for defining the spatial position of said condition within the site identified by the location code in the second field, the location codes and key symbols in the third field being such that said spatial position within the site identified in the second field is defined as being before, after or between marker points constituted by junctions of the site identified in the second field with other sites."

- XI. During the oral proceedings, the appellant's representative made oral submissions in support of the appellant's request.
- XII. The representative submitted *inter alia* that claim 1 sought protection for an apparatus which permitted the input and storage of data defining pathological conditions identified in a medical image in the form of a simple formula. In the given context of a computer-based implementation, the data structures based on the disclosed coding and reporting method could be regarded as involving technical considerations achieving a technical effect inasmuch as they provided a more compact form of data storage and obviated the need to interact with a digitised medical image when inputting a diagnostic report.
- XIII. With respect to D6, the representative submitted that said document disclosed the use of a coding system known as DICOM which was a Cartesian coordinate system

as evidenced by Appendix III submitted with the letter of 8 June 2011. In D6 the location of the pathological condition was coded in the form of a three-dimensional Cartesian co-ordinate which referenced the digital image on which the report was based. The claimed invention on the other hand effectively relied on a different kind of "coordinate system" for specifying the location of a pathological condition by reference to the native anatomical structure of the organ to which the medical image related.

Although D6 disclosed the assignment of an "anatomical:pathological code" to an image coordinate it did not indicate what the appropriate anatomical code would be in the context of a cardiovascular system. Moreover, using an "anatomical:pathological code" as disclosed in D6 would only allow a very coarse-grained specification of the location of a pathological condition, typically a specification of the affected organ. In contrast, the claimed invention permitted the recording of a very precise specification of the location of a pathological condition within the affected organ, i.e. the heart, by reference to adjoining branches and sub-branches of the cardiovascular system contained in a "third field" of the data structure as specified in claim 1.

The present invention thus relied on a specification of the location of the pathological condition in a format which was not explicitly linked to the medical image and the geometric coordinate system associated therewith. In this way, it was possible for diagnostic report data to be entered, stored and processed

separately from the medical image data (angiogram) on which the report was based.

According to the appellant, a medical practitioner would not require access to the original angiogram image in order to be able to interpret a diagnostic report formatted in this manner or to understand where the identified pathological conditions were located within the patient's cardiovascular system. The diagnostic report data could thus be transmitted, presented and analysed independently of the medical image which had been used as a basis for drawing up the report.

XIV. At the end of the oral proceedings the chair announced the board's decision.

Reasons for the Decision

1. Admissibility

1.1 The appeal complies with the provisions of Articles 106 to 108 EPC 1973 which are applicable according to J 0010/07, point 1 (cf. Facts and Submissions, item IV. above). Therefore it is admissible.

2. Articles 84 and 123(2) EPC

2.1 Claim 1 of the appellant's request is directed towards a computer apparatus for implementing a method of coding conditions and information embedded in a coronary angiogram and incorporating a program according to an algorithm for easing mapping, storing

predetermined code tables for different fields of a formula, inputting information, creating said formulae, forming a final report, storing the report, outputting said report, drawing a customised diagram from said formulae, and searching a database having a plurality of said reports.

- 2.2 The board judges that said claim is to be construed as seeking protection for a data processing system which incorporates software for facilitating the input, storage and management of diagnostic reports of pathological conditions identified in coronary angiograms wherein said diagnostic reports comprise "formulae" which have been encoded in the manner disclosed in the examples on p.10 l.28 et seq. of the present application.
- 2.3 The first part of claim 1 of the appellant's request is supported by the paragraph bridging pages 9 and 10 of the description as filed.
- 2.4 Clauses (a), (b) and (c) of claim 1 are supported respectively by Tables 1, 2 and 3 on pages 12 to 15 of the description as filed.
- 2.5 Clause (d) is supported by the formula set out in line 30 of page 7 and the description of the fields thereof from page 8, line 1 to page 9 line 11 of the description as filed. Further support is to be found in the example formulae at page 11 lines 10 to 14 and page 12 lines 4 and 5.

2.6 In the board's judgement, claim 1 defines the matter for which protection is sought in a manner which satisfies the requirements of Article 84 EPC.

2.7 In view of the fact that the passages of the description providing support for the claimed subject-matter form part of the application documents as originally filed, the board concludes that the requirements of Article 123(2) EPC are also complied with.

3. *Inventive step*

3.1 In the board's judgement, D6 represents the closest prior art to the subject-matter of claim 1. Said document discloses a data processing system which incorporates software for facilitating the input, storage and management of diagnostic reports of pathological conditions indentified in medical images (cf. D6: Abstract; p.3 l.12 - p.4 l.8).

3.2 D6 discloses that a diagnostic finding is recorded by positioning a cursor over a location in a digital image and clicking on a mouse button which causes the image coordinates corresponding to the cursor location to be stored (cf. D6: p.11 l.21 - p.12 l.7). In the preferred embodiments of D6, the image coordinates are three-dimensional Cartesian coordinates, i.e. X, Y and Z coordinates as illustrated in Figs. 7A to 7C of D6.

To complete the definition of a diagnostic finding, an anatomical: pathological code and, optionally, secondary attributes are assigned to the image coordinate and stored in a database (D6: p.12 l.7-10). The

anatomical:pathological code specifies an anatomical location and a pathological condition associated with that location (D6: p.10 l.10-12). The anatomical location is typically a anatomical organ associated with the type of radiological image under review (D6: p.12 l.19 - p.13 l.3). The secondary attributes are further data which may be optionally added to embellish or support the diagnosis (D6: p.14 l.15-16).

- 3.3 The system of D6 differs from the present invention in that the diagnostic report data of D6 is explicitly linked to a digital image being reviewed and each individual diagnostic finding is assigned to specific geometric image coordinates. Accordingly, the board takes the view that the diagnostic finding data of D6 can only be interpreted in a meaningful manner by reference to the associated digital image and this would require the digital image data to be stored and presented in association with the diagnostic finding data (cf. D6: Figs. 7A to 7C).
- 3.4 The apparatus of claim 1 relies on the input and storage of diagnostic findings in the format disclosed in the examples on p.10 l.28 et seq. of the application. The data entered and stored in this format is not explicitly linked to the coordinate system of the medical image (angiogram) under review and does not even require that this medical image be available in digital format.

In the context of the present invention, the location of the pathological condition is specified using a mapping system based on the native anatomical structure of the cardiovascular system of an individual patient

as illustrated in Figs. 1 and 2 (filed with the letter of 8 June 2011) and thus in a manner which is essentially independent of the medical image and the geometric coordinate system associated therewith.

- 3.5 Although the encoding of the diagnostic findings could, in principle, be carried out using conventional database structures, the board has been persuaded by the appellant's submissions (cf. Facts and Submissions, item XII. and XIII. above) that, in the given context, coding the diagnostic findings in the manner specified in claim 1 involves more than merely a difference in cognitive information content over D6.

A technical aspect comes into play inasmuch as the claimed apparatus permits a diagnostic report to be recorded, stored and processed independently of the medical image data (angiogram) to which the report relates.

In contrast to D6, a person entering a diagnostic report using the claimed apparatus is not required to interact with a digital image in order to select an image coordinate associated with each diagnostic finding. Moreover, in the context of a computer-based implementation, insofar as the data format used for recording the report is independent of the medical image data, the apparatus provides a more compact and flexible way of storing diagnostic reports such that they can be entered, stored, transmitted, presented and analysed separately from medical image data.

- 3.6 The board judges that starting from D6, it would not be obvious for the skilled person to consider providing an

apparatus in which the diagnostic findings relating to an angiogram were coded in the aforementioned manner. In particular, D6 neither discloses nor suggests that the recording of diagnostic findings can be accomplished other than by associating each diagnostic finding with a geometric coordinate of a digital image whereby the coordinate is specified by means of user interaction with the digital image.

- 3.7 The board makes the following additional observations concerning the undocumented prior art relating to so-called narrative reporting systems as acknowledged on p.2 1.4-21 of the present application. In such systems, diagnostic reports are entered and stored in unstructured format, i.e. as free text, typically using word-processing programs.

In view of the inherent disadvantages associated with entering and storing reports in unstructured format, it represents an obvious desideratum to provide a reporting system which uses a structured data format. However, in the board's judgement, the mere recognition of this desideratum does not in itself render it obvious to provide an apparatus employing the particular structured data format required by claim 1. In particular, the skilled person having regard to the disclosure of D6 would be led to use a structured data format in which each individual diagnostic finding was associated with a specific digital image coordinate specified by means of user interaction with the digital image.

- 3.8 For the sake of completeness the board notes that whereas the format of the "formulae" of the diagnostic

reporting method disclosed on p.7 l.25-30 of the application represents a logical syntax for data structures and, as such, has an abstract and intellectual character, the appellant's request does not seek protection for the disclosed "formulae" as such. Claim 1 is directed towards an apparatus which employs data structures based on said "formulae". The board judges that, in the given context, the purposive use of such data structures in the claimed apparatus has technical implications with respect to the entry, storage and processing of the diagnostic reports (cf. observations under 3.5 above). Moreover, having regard to the disclosure of D6, the board judges that it would not have been obvious for the skilled person to consider using a data format which permits the entry and storage of diagnostic findings independently of the medical images on which these findings are based.

- 3.9 In view of the foregoing the board concludes that the subject-matter of claim 1 is not rendered obvious by the available prior art.

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 with the order to grant a patent on the basis of the main request as filed during oral proceedings before the board, and the description pages 1 to 17 and figures 1 to 3 as filed with the letter of 8 June 2011.

The Registrar:

The Chair:

K. Götz

A. Ritzka