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D E C I S I O N
of 7 April 2006

Case Number: T 1153/02 - 3.5.01

Application Number: 97934919.8

Publication Number: 0912955

IPC: G06F 19/00

Language of the proceedings: EN

Title of invention:
Computerized medical diagnostic system utilizing list-based processing

Applicant:
First Opinion Corporation

Opponent:
-

Headword:
Diagnostic system/FIRST OPINION

Relevant legal provisions:
EPC Art. 52(4), 56, 113(1)

Keyword:
"Inventive step - no"
"Substantive procedural violation - no"

Decisions cited:
G 0010/93, G 0001/04

Catchword:
-

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Case Number: T 1153/02 - 3.5.01

D E C I S I O N
of the Technical Board of Appeal 3.5.01
of 7 April 2006

Appellant: First Opinion Corporation
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Decision under appeal: **Decision of the Examining Division of the European Patent Office posted 6 June 2002 refusing European application No. 97934919.8 pursuant to Article 97(1) EPC.**

Composition of the Board:

Chairman: S. Steinbrener
Members: R. Zimmermann
A. Pignatelli

Summary of Facts and Submissions

I. European patent application number 97934919.8 (international publication number WO-A-98/02836) claims a priority date of 12 July 1996 for a computerized medical diagnostic system and method.

II. The examining division refused the application in a decision given orally. According to the reasoned decision in writing dated 6 June 2002, the invention did not meet the requirement of inventive step, among others in the light of the following document:

D1: EP-A-0 531 889, published in 1993

III. The applicant lodged an appeal against the decision. The notice of appeal, including an order for payment of the appeal fee, was filed by the applicant on 13 August 2002; the written statement setting out the grounds of appeal was filed on 16 October 2002. The appellant requested that the decision under appeal be cancelled in its entirety and the patent be granted on the basis of either one of a main request and four auxiliary requests and that oral proceedings be held prior to any rejection of any one of those requests.

IV. In a communication pursuant to Article 110(2) EPC, the Board cited the following further prior art document:

D7: G. Gini et al.: "A Serial Model for Computer Assisted Medical Diagnosis", Int. J. Bio-Medical Computing vol. 11, 1980, pages 99 - 113,

and indicated that the diagnostic system disclosed in document D7 seemed to anticipate essential features of the present invention. The Board also referred to case G1/04 pending before the Enlarged Board of Appeal, the findings of which might be relevant for the present case.

V. In a letter dated 11 January 2006, the appellant filed new main and auxiliary requests 1 and 2, each directed to a computerised diagnostic method.

VI. The Board summoned the appellant to attend oral proceedings on 7 April 2006.

VII. In a subsequent letter dated 3 March 2006, additional auxiliary requests 3 to 5 were filed for a computerised diagnostic system. The appellant explained in its letter that the diagnostic method claims according to the main and first and second auxiliary requests were allowable in the light of Opinion G1/04 which had been issued recently, and that the new auxiliary requests 3 to 5 were an "apparatus version" of the preceding requests. A possible Article 52(4) objection would definitely not apply to the apparatus category of claims.

VIII. Claim 1 of auxiliary request 2, which is the most specific method claim and which is included in the definition of the independent method claims of the preceding requests, reads as follows:

Auxiliary request 2:
"1. A computerised diagnostic method, performed on a computer which stores

(a) at least one disease list comprising a plurality of human diseases;
(b) for each said disease, a symptom list comprising a plurality of symptoms; and
(c) for each said symptom, a question list comprising at least one question, at least some of said lists containing plural said questions,
comprising the steps of:
(i) repetitively presenting a plurality of said questions to an individual who is the patient, or proxy or assistant for the patient;
(ii) inputting patient data from the individual in response to each said question, and after each said step of inputting,

(iii) establishing the presence of a said symptom in dependence on the patient data;
(iv) storing, for each symptom, a symptom weight for each disease for which the symptom is on the disease list,
(iv) maintaining, for each said disease, an accumulated disease weight and, on establishing the presence of a said symptom, updating said weight for each disease for which the symptom is on the disease list based on the symptom weight;
(v) selecting a disease which is relatively likely to be diagnosed based on its disease weight;
(vi) selecting a symptom having the highest symptom weight from the disease list [sic!] of said disease;
(vii) selecting an un-asked question from the question list of said symptom, and asking said question;

(viii) comparing a said accumulated disease weight with a threshold;

(ix) generating potential diagnoses of one or more of said diseases based on said comparison; and
(x) outputting one or more of said potential diagnoses from the computer as a declared diagnosis;

wherein further questions are sequentially presented to a user to elicit further responses after a time interval, and a symptom at a first selected time of the diagnostic process is weighted differently than the symptom at a second selected time of the process."

IX. By a further letter of 31 March 2006, the appellant withdrew its request for oral proceedings and requested that the case be decided on the papers.

X. Oral proceedings were held before the Board as scheduled on 7 April 2006. The appellant did not appear at the oral proceedings.

XI. The arguments submitted by the appellant in writing may be summarized as follows:

Medical diagnosis consisted essentially of three stages, namely carrying out and recording of medical examinations and tests, determination of the symptoms, i.e. of the deviations of the examination and test data from the normal patterns and values, and the deductive medical decision phase, which necessarily involved a highly trained medical practitioner able to attribute the deviation to a particular clinical picture.

The invention was intended to provide a completely automated medical diagnostic system, which could not in fact operate in the same way as a physician did since computers were normally designed according to a von

Neumann architecture whereas the human brain was a massively parallel and associative system capable of constant learning from experience. Asking whether the automated diagnostic process corresponded to something which a human doctor would do was mistaken and did certainly not lead to an accurate assessment of the invention. The technical problem should be that proposed in the application, namely providing an automated medical diagnostic system which could interact directly with a patient to provide a diagnosis without medical intervention, and which was quick, efficient and accurate.

To elicit the diagnostic information from untrained patients without the intervention of a physician, the computer had to ask the patient a large number of simple and easy to answer questions. Keeping short the response time between successive questions and the total time for the diagnostic process, and managing nevertheless the complex set of data to provide an accurate diagnosis without medical intervention, presented a considerable challenge for IT specialists and required innovative solutions. These were the actual technical problems the invention solved and which were ignored by the examining division.

The claimed system, by separating diseases, symptoms and questions, by dynamically and selectively controlling the flow of questions and by scoring a symptom potentially for more than one disease, achieved a considerable lowering of the number of questions which had to be asked so that this number did no longer grow as a rapid function of the size of the list of diseases in the medical diagnostic database.

This functionality and the availability of such a system to a broad range of potential users was not known from the prior art.

Document D1 disclosed a computerized diagnostic system for use by nurses. The system worked on the basis of simple list processing and did not implement anything similar to the present dynamic control and scoring approach. Like the other prior art cited in the search report, it presupposed the involvement of a trained professional who was able to enter the findings and to interpret the results. If scoring and weighing were used, it was for entirely different reasons.

Document D7 was cited as a new document for the first time at the appeal stage in 2005. In first instance, new documents had been filed in 1999 and in 2001. The appellant did not previously encounter any other case where, in response to each argument filed, the EPO cited additional prior art. Examination in this fashion resulted in delay and expense to the applicant. It also gave the impression that a prior decision had been taken to refuse the application, regardless of the arguments put forward by the applicant.

Document D7, like much of the other cited prior art, concerned a system for assisting medical professionals to determine the appropriate sequence of tests in a diagnostic process where the tests were "costly and dangerous". The object was not diagnosis, but the assessment of the costs and danger of tests in order to minimise the financial cost and risk.

Neither the indications Y(es), N(o) and U(nnecessary) nor the additional levels mentioned in D7, such as "sometimes" or "often", did involve any scoring or thresholding procedures comparable to the ones of the present invention.

The present invention allowed a complex question or test associated to a symptom to be broken down into a group of simple questions, each of which could be understood by an untrained patient, and which could be asked several times in different guises to reduce misunderstanding. Each such question was given a different weight, so that the ascertainment of a symptom was reliably performed by accumulating the weights resulting from several such questions.

The present invention always worked on the "front-runner" disease when selecting the next symptom so that the weight values for one disease only had to be examined. This feature resulted in a significant increase of processing speed over D7 and in a shorter response time of the system to the user's answers in the dialogue session.

The second Auxiliary Request added to the first the functionality that questions could be asked after a time interval, and symptoms could be given different weights after that interval. Again, there was no suggestion of these features in the prior art.

Auxiliary requests 3, 4, and 5 were apparatus versions of the main request, auxiliary request 1, and auxiliary request 2, respectively.

According to the auxiliary requests, the system reviewed the remaining symptoms and selected the next to be asked in dependence upon the weights for the remaining symptoms. By providing a data structure which separated the data records for questions from those for symptoms, a given question asked in connection with a first symptom could add weight to another symptom, so that as questioning proceeded, some symptoms not yet selected could become more probable, indicating that further questions on such a symptom should be asked. By controlling the question flow according to the answers received, so as to work primarily on the "most likely" disease, then on the highest scoring symptom on that disease, then on the next question for that symptom, the present invention provided an efficient heuristic for getting to a rapid diagnosis without drowning the patient in a welter of unnecessary questions, taking an unfeasibly long time, or involving excessively large processing resources.

There was no indication in the cited art of allocating weights after each question and using the accumulated weights to vary the order of asking questions. Neither was there any indication of the use of separate lists for diseases, symptoms and questions. Lists per se were certainly well known data structures. But this was not relevant; good inventions had always come from transfer of things well known in one application into another application in a surprising or technically advanced way. A main goal of artificial intelligence had always been in the creation of true natural language discourses. The present invention had no such aim.

In paragraph 15 of the decision under appeal, the Examining Division stated that the use of scoring is "actually the most straightforward possibility; other, more sophisticated approaches to uncertainty and expert systems would be e.g. the use of a Bayesian network, or the Dempster-Shafer theory". This did not appear in the Minutes of Oral Proceedings, nor was it previously raised in writing, and thus constituted a ground on which the appellant had had not opportunity to comment, and thus a substantial procedural violation.

XII. The Board announced the decision on the appeal in the oral proceedings on 7 April 2006.

Reasons for the Decision

1. The appeal is admissible as it complies with the requirements of Articles 106 to 108 and Rules 1(1) and 64 EPC; however, the appeal is not allowable since the appellant's requests do not comply with the requirement of inventive step under Articles 52(1) and 56 EPC.

2. Claims 1 of the first three requests (main request and auxiliary requests 1 and 2) seek protection for computerised diagnostic methods, each request defining the method progressively narrower in scope. The appellant pointed out in its letter of 3 March 2006 that auxiliary requests 3 to 5 claim "apparatus versions" of the method claims. Indeed, the steps of the claimed methods, performed by means of a computer, and the corresponding features in system claims correspond one-to-one so that the different claim categories do not bear any significant difference to

the technical teaching of the claimed invention and are thus without relevance to the assessment of inventive step. Lack of inventive step in one of the method claims implies lack of inventive step in the corresponding system claim.

Furthermore, claim 1 of auxiliary request 2 is the independent method claim most narrowly defined and is included in the definitions of the preceding auxiliary requests. Lack of inventive step in this claim 1 thus implies lack of inventive step in claim 1 of the main request and in claim 1 of auxiliary request 1.

3. The method according to claim 1 of auxiliary request 2 is obvious in the light of prior art document D7, which discloses an interactive consultation and medical diagnostic system.

3.1 The Board considers document D7 as closer and more relevant to the invention claimed than document D1, which the examining division used as starting point for assessing inventive step. The appellant objected that the Board intended to consider this document since it had been introduced only at the appeal stage for the first time.

The Board understands that the citation of prior art late in the examination or appeal proceedings may cause inconveniences and should thus not be the rule. However, as clearly stated in decision G10/93 - Scope of examination in ex parte appeal / SIEMENS of 30 November 1994 (OJ EPO 1995, 172), point 3 of the Reasons, the boards are, in ex parte proceedings, restricted neither to examination of the grounds for

the contested decision nor to the facts and evidence on which the decision is based.

In the present case, the Board considers it necessary to cite document D7 since only this document clearly discloses the automated posing of diagnostic questions.

3.2 Moreover, the appellant objected that the user in document D7 was a physician whereas the invention primarily aimed at the lay person or ordinary consumer who had no qualification as a health professional at all. Document D7, therefore, was not relevant and would not be taken into consideration by the skilled person.

The Board does not accept this argument. The different qualification of users is not *per se* a reason for excluding prior art from consideration which would be otherwise relevant. The person skilled in the field of medical informatics and envisaging some kind of medical system for consumer application would certainly take into account an existing expert system used by health professionals at clinics or medical practices, for example, if it provides the required functionality.

3.3 Document D7 is clearly a promising starting point: the implementation of an interactive consultation and diagnosis model on a computer system proves that such a system is principally feasible despite the "hard" problems the task poses (see Document D7, page 99, Summary and page 100, lines 23 to 30, page 107, line 22 to page 108, line 10). Extending the group of users from qualified physicians to lay persons and ordinary consumers certainly aggravates the problems, but this does not mean that a significant change of the

principal design and features of the system becomes necessary. The information and the model presented in document D7 remain still relevant.

3.4 The diagnostic method disclosed in document D7 is implemented as an "experimental computer system" (see Document D7, page 100, lines 31 to 33).

The system stores at least one disease list (D, d_i, N, see Document D7, page 103, Table 1) comprising a plurality of human diseases (for example the variants of arthritis pseudogout, ankylosing spondylitis etc., see Document D7, page 112, Table 4).

Furthermore, the system stores for each said disease, a symptom list comprising a plurality of symptoms (S, s_j, M, see Table 1, loc. cit.) and, for each said symptom, a question list comprising at least one question (tests T, t_r, O, see Table 1, loc. cit., in connection with the interactive dialogue disclosed in chapter VI, pages 111 f.).

As shown in Table 4 (see document D7, page 112), the system repetitively presents a plurality of questions (e.g. "is arthritis present?") to an individual (a physician). It then collects the inputs (e.g. "yes") of patient data from the individual, e.g. for patient identification pd143, in response to each said question, and after each said step, it establishes the presence of a symptom in dependence on the patient data (after execution of the test, see for example second step in figure 4 concerning the search algorithm).

Document D7 (see in particular page 102, lines 12 to 36) proposes that "a scoring algorithm may be used to evaluate the tests according to their significance in the recognition process". In the experimental system proposed, "all observations are quantised and binarised so that tests may be only true, false or undetermined". These ternary values - true, false and undetermined - are used to define the disease-symptoms relations in the medical knowledge base MKB(i,j,k) by coding these values as Y, N, and U, and to record the outcomes of the diagnostic tests by setting the value v_j of the ternary "state st" (see page 106) equal to 1, -1 or 0.

The values Y, N, and U are used in the scoring algorithm (see page 108, line 36 to page 110, line 20 and the formulas on pages 109 and 110) by taking into account numerically the discrimination power of each symptom in relation to each single one of the diseases present in the individual knowledge base.

These values may thus be considered as (ternary) "weights" in the scoring algorithm so that in terms of the present claim it can be said that the medical knowledge base MKB stores, for each symptom, a symptom weight for each disease for which the symptom is on the disease list.

The system of document D7 determines, after each diagnostic test, which diseases are consistent with the observed test outcome and which are not. The system keeps track of the actual patient situation by updating the individual knowledge base and eliminating the diseases not consistent with the observed test outcome (see in particular page 108, lines 40 ff. and page 110,

lines 9 to 20). The result of a disease being compatible, or implicitly being incompatible, is thus maintained in the individual knowledge base.

This compatibility result is used in the scoring algorithm to the effect that the diseases compatible with all the tests already done score fully for selecting the next test to be executed, whereas the incompatible diseases provide a zero contribution (see the example given in Figure 5 on page 110). It has thus the function of a (binary) weight which for each disease is accumulated during the consultation and diagnosis process and which is updated each time the presence of a symptom on the disease list is established, based on the (ternary) value which encodes the weight of the symptom in respect to a particular disease.

By eliminating the incompatible diseases from the individual knowledge base, the system of document D7 selects the next symptom on the basis of the group of one or more diseases for which there is still a likelihood to be diagnosed.

The system selects the next symptom to be tested on the basis of an integral score (the "promise", see formulas on pages 109 and 110) which takes account, at the same time, the discrimination power of the symptom relative to each disease as well as the (binary) likelihood of the disease to be diagnosed.

The system executes any single test not more than once, and asks, for each test, only one question.

The system operates on the experimental assumption that the patient has possibly none but at most one disease (see Table 2, point 3). The disease is output which shows full compatibility with all the test results, i.e. the diagnosis is generated and output on the basis of the accumulated (binary) disease weight (see above), which is the result of the compatibility tests applied at each step of the search and scoring algorithm (see the last two steps in document D7, page 109, figure 4).

Finally, the dialogue displayed in table 4 on page 112 of document D7 contains the question "is chronic present?", which illustrates the normal practice of the physician to take account of the development in time of the physical condition of a patient in making a medical diagnosis.

3.5 Nevertheless various claim features are not directly and fully derivable from document D7. These features which distinguish the claimed method from the prior art may be summarized as follows (the lettering of the features are added for reference):

(A) The method allows to present the questions (directly) to the patient, or proxy or assistant for the patient, and to input the patient data (without medical intervention).

(B) At least some of the question lists contain plural questions.

(C) After each step of inputting patient data a disease is selected which is relatively likely to be diagnosed based on its disease weight.

(D) The next symptom to be considered is selected from the symptom list of said selected disease (as the Board construes the claim in the light of the A-publication, page 26, lines 8 to 10, page 27, lines 2 to 4, and page 28, line 22 to page 29, line 9). The symptom selected is the symptom having the highest weight in the symptom list of this disease.

(E) The question asked after each step of inputting patient data is an un-asked question selected from the question list of the next symptom to be considered.

(F) The accumulated disease weight is compared with a threshold for generating potential diagnoses.

(G) Further questions are sequentially presented to a user to elicit further responses after a time interval.

(H) A symptom at a first selected time of the diagnostic process is weighted differently than the symptom at a second selected time of the process.

3.6 In respect to the technical problem underlying the claimed invention the appellant submitted that the invention provided an automated medical diagnostic system which could interact directly with a patient without medical intervention, and which would be quick, efficient and accurate. Such a formulation of the technical problem, however, is inadequate for the following reasons:

First, it does not take into account document D7 which already discloses an automated medical diagnostic

system suitable to interact directly with a physician, and thus in principle also with a patient, to provide a diagnosis. This diagnostic system, although an experimental design, might be considered with some justification as quick, efficient and accurate.

Furthermore, the technical problem to the subject-matter of the claims is to the most part speculative since the features of the claimed method are neither necessary nor sufficient for achieving a quick, efficient and accurate diagnosis by direct interaction with the patient.

The alleged achievements actually depend decisively on the informational content of the medical knowledge base and in particular on the quality and level of the questions to be asked. Neither the medical knowledge nor the questions to be asked find any concrete expression in the claims. Even the description fails to give clear and complete information on the content of the medical knowledge base. The DSQ script appended to the description is "only to show formats and relationships" and may be incorrect or incomplete regarding the medical information (see the A-publication, page 32, lines 3 to 5). The exemplary question list displayed on page 42 of the A-publication is short and rudimentary. Some of the few questions displayed can possibly even not be answered by the layman without medical intervention since the term "plasmodia" used therein (see page 42, lines 19 and 20) is probably unknown to a wide circle of potential users.

The formulation of a problem does not become valid by defining the problem, or any other related result or effect, in the claim, be it explicitly or implicitly (like in present claim feature (i)), if the claim does not include all the features essential to the solution of the problem.

3.7 In default of such a clear causal relationship between the solution and the problem to be solved, a different formulation of the technical problem must be found on the objective basis of the claimed subject-matter and its difference to the pertinent prior art. In construing the claims for this purpose one must bear in mind that the application only gives a short and rather rudimentary example of a diagnostic question list and does not disclose any reliable and conclusive information in respect to the content of the medical knowledge base. The disclosure is rather limited to algorithms, data formats and relationships between data. The formulation of the technical problem must thus be based only on these last aspects of the invention, rendering irrelevant such arguments and considerations which were made by the appellant on the basis of features of the system which actually presuppose a concrete content of the medical knowledge base and a specific set of questions.

For example, feature A above - if the term patient is understood as an ordinary layman with no special medical knowledge - defines a speculative use of the claimed method which comes closer to a wishful thinking than to a concrete technical feature of the method claimed or the invention actually disclosed in the application. This feature and the alleged suitability

of the inventive method and system to be used by medically untrained patients must be ignored in the further assessment of inventive step.

The difference between asking a single or a plurality of questions to establish a symptom is rather meaningless if it is left in abstract generality which symptom is to be determined. Features B and E, therefore, define at best a plural tests - one symptom model as a mere alternative to the one test-one symptom model of document D7.

A similar situation exists with regard to features C, D, and F since selecting first a disease according to its weight has in abstract generality no direct causal consequence whatever, except for a change in the algorithm and in the data structure of the medical knowledge base to keep track of the momentary disease weight. These features thus merely provide the basis for a further alternative to the search and scoring algorithm of document D7.

Features G and H do not require any modification to the diagnostic system or of the steps which have to be taken in executing the diagnostic method at all; they could simply be implemented by including questions into the medical knowledge database which take into account the development of the disease in time. In the light of the description, but not by the terms of claim 1, they could be construed to mean that the medical knowledge base contains explicit data representing a time factor and the relevance of symptoms at different intervals in the development of a disease.

3.8 Document D7 describes an experimental system, but it also indicates various possible lines of improvements. One of these improvements concerns the quantisation levels for encoding the outcomes of the tests: "a range from 0 to 1 could most closely match the physician reasoning process"; sufficient would be "a few quantisation levels corresponding to the interpretation of never, sometimes, often, usually, almost always, always" (see document D7, page 102, lines 31 to 42).

The direct consequence of using for example the range 0 to 1 would be that each disease in the individual knowledge base is now allocated a numerical weight from 0 to h_i. In addition, document D7 proposes, as an additional feature, to assign a priori probabilities to diseases which are considered as a weight associated to the disease which become effective in the scoring algorithm (see document D7, page 102, lines 15 to 30).

Both improvements, individual or in combination, have the consequence that a mere binary decision regarding the possible diseases, i.e. disease ruled in or out (see document D7, page 110, lines 9 ff.), is not any more feasible for preparing the selection of the next symptom to be tested.

3.9 To determine the "most promising operator" (see document D7, page 108, lines 22 to 39) the weights accumulated for each disease in the individual knowledge base must be compared and appropriately taken into account in determining the "promise" of each symptom (see document D7, page 107 f.) for selecting the next symptom to be tested. Obvious solutions are either to combine the disease weight with the promise

factor, or even more straightforward to restrict the calculation of this factor, and thus the symptoms, to a most promising candidate among the diseases which is likely to be diagnosed on the basis of its disease weight, and not merely to the whole set of possible diseases still ruled in at the respective stage of the diagnostic process. In particular this last alternative, which is what features C and D define, does not involve an inventive step.

3.10 Assigning a numerical weight to the diseases has the further consequence that the diagnostic process produces a list of diseases of normally differing weights. Regarding the interpretation of such weights as a probability for the presence of the disease (see document D7, page 102, lines 23 ff. in respect to the a priori probabilities) the skilled person has to define some confidence level to compare with such a multi-valued range of probabilities in order to arrive at the (binary) is or is-not result of the diagnosis (see the results in document D7, Table 4). Feature F is thus considered to be the direct consequence of implementing an obvious alternative, namely introducing continuous or multi-valued weights and probabilities into the algorithm, and does thus not add anything inventive to subject-matter of the claim.

3.11 Referring now to features B and E as well G and H it is first noted that asking one or more questions to establish the presence of a single symptom, including questions which concern the time development of the health problem, belong to the normal medical practice of a physician. There is therefore a strong motivation to provide such features also in an expert system. The

skilled person in the field of medical informatics would consider it obvious to represent such data in list structures, which are worked down in establishing the symptom as defined in features B and E.

3.12 Furthermore, since it is normal medical practice to take into account the disease development in time, only the features of the implementation of such a practice in a computer system may involve an inventive step. As already pointed out above, however, features G and H do actually not define any feature of implementation, but may be construed to refer merely to the informational content of the medical knowledge base and the associated questions.

It is noted that the implementation of a time factor into the diagnosis system of document D7 would only require minor modifications since therein the actual patient data are already stored at each stage of the diagnostic process in an individual knowledge base (see document D7, page 108, lines 40 to 43). It is a matter of normal programming practice to modify the system, in addition to ask questions and input the patient data, to store time and date of a diagnosis session and to prompt the patient, in connection with particular symptoms or diseases, to come back later again after some time interval has lapsed or some medical tests have been made.

3.13 In summary, the method of claim 1 of auxiliary request 2 does not meet the requirement of inventive step as set out in Articles 52(1) and 56 EPC. Since the remaining requests, i.e. the main request and the auxiliary requests 1, and 3 to 5, do not add any

substantive technical information to auxiliary request 2 (see point 2 above), the objection of lack of inventive step holds for all said requests.

For this reason, the question of whether or not the diagnostic methods claimed in accordance with the main, first and second auxiliary requests may be considered to be "practised on the human or animal body" (and hence may or may not be patentable pursuant to Article 52(4) EPC) in that they necessitate the presence of the user to respond to questions put to him by the computerised method (see decision G 1/04 - Diagnostic methods, to be published in OJ EPO; point 6.4.3 of the Reasons), need not be answered in the present case.

4. The appellant raised the objection of substantial procedural violation, submitting that the examining division made statements in point 15 of the decision under appeal to which the appellant had no opportunity to comment. The Board considers these statements as indications of illustrative examples given for the general technical knowledge in the field of expert systems. They do not form a core element of the reasoning given for the refusal of the application. Regarding the main reasons for refusal, the appellant had the opportunity to present its comments in first instance.

The possible violation of the right to be heard in respect to such secondary statements in the decision under appeal is thus in any case not a substantial procedural violation which would justify to declare the

decision under appeal void and to remit the case back to the first instance.

5. For the above reasons, a decision in favour of the appellant is not possible.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

U. Bultmann S. V. Steinbrener