Intellectual Property Office

BL O/519/15

09 November 2015

PATENTS ACT 1977

APPLICANT Siemens Medical Solutions USA Inc.

ISSUE Whether patent application number GB1119953.6 complies with Section 1(2)(c)

HEARING OFFICER Phil Thorpe

DECISION

1. This decision concerns whether the invention set out in patent application GB1119953.6 relates to excluded matter. The examiner has maintained throughout the examination of this application that the claimed invention is excluded from patentability under section 1(2)(c) of the Patents Act 1977 as a program for a computer. The applicant has not been able to overcome the objections, despite amendments to the application.

2. The applicant has asked that a Hearing Officer decide the matter on the basis of the papers on file.

The Patent Application

3. The application is entitled "Methods and Systems for Medical Image Processing, Retrieval and Reviewing" and was filed 18th November 2011 in the name of Siemens Medical Solutions USA Inc. The application was published on 30th May 2012 as GB 2485883 A.

4. In the field of medical imaging, the results or findings of a scan can be presented in a medical imaging study report. These reports are typically prepared by a first physician (a reading physician) for the subsequently benefit of a second physician (a referring physician). The reports may contain key images, possibly a link to the original images, and perhaps some patient information linked to the image or to the report.

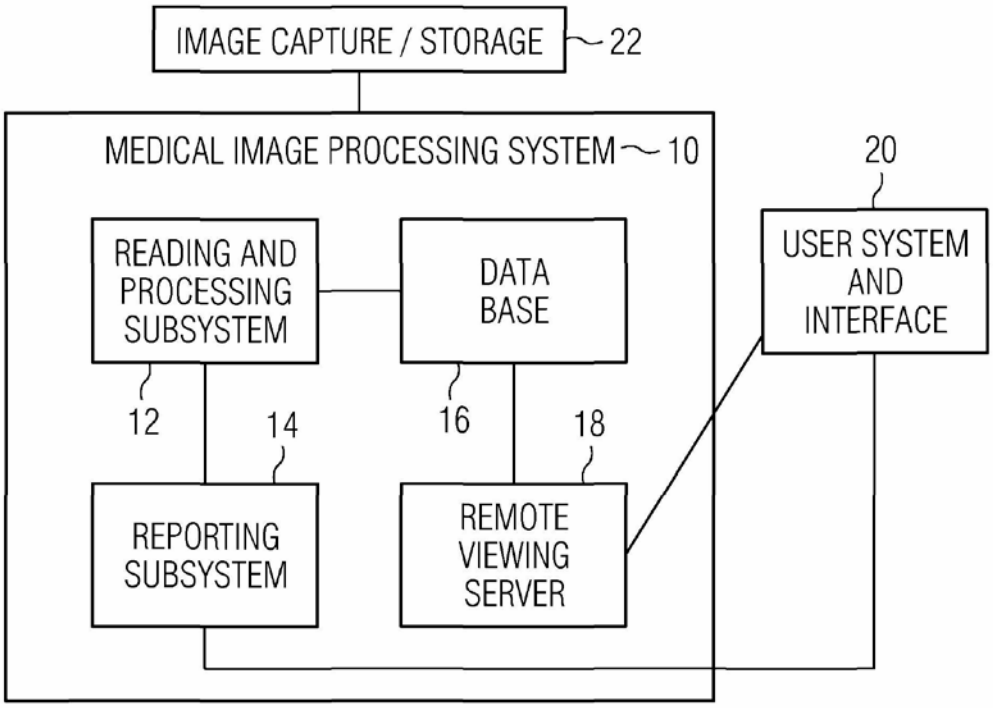
5. When reviewing a medical imaging study report the referring physician may wish to reproduce the reported finding or conclusion. This can be time consuming with no guarantee that that the same reading and/or processing context can be reproduced. To do so requires access to the original image data as well as the image interpretation or workflow tools used by the reading physician, such as a ruler or a cardiac database comparison tool. Such

information or source data may not be accessible to the referring physician meaning that it is very difficult to produce the same measurements or findings.

6. To address these problems the application discloses a system and method for medical imaging, retrieval and reviewing that allows a user to reproduce the reading and/or processing context for an image appearing in a report, effectively placing the user back into the same reviewing or reading environment of the original finding or conclusion.

7. A high level schematic of the system is provided by Figure 1 of the application, reproduced below:

FIG 1



8. With reference to the figure above, image data may be stored in the database 16 or may be input from image data storage/image data capture device 22. The reading and processing subs-system 12 provides data to the database 16, and to the reporting sub-system 14. The remote viewing server 18 obtains data from the database 16. The user system and interface 20 receives information from the reporting sub-system 14, and can access the remote viewing server 18.

9. Importantly, the end user, i.e. the referring physician, is able to access not only the image presented in a report (from reporting system 14) but also any interpretation information stored within the database. This interpretation information is generated during the automatic or manual processing of the image data (in the reading and processing sub-system) and relates to the use of interpretation tools. The information may therefore include interpreting information such as the *set window level*, the *view type finalised*, any *segmentation*, and/or a *threshold value*. The interpretation information once made available to the user can then be used in the relevant interpretation tool so as to reproduce the reported findings or conclusions. Images may also be retrieved from the database instead of or in addition to the reported copy.

10. In an embodiment of the invention, the medical report is created in a standard electronic document format and for each finding or conclusion that appears an embedded hyperlink is provided. The hyperlink contains a unique identifier (UID) which is associated with a particular set of interpretation information stored on the interpretation information database. Clicking on the hyperlink initiates communication with the remote viewing server which presents to the user the image data used to generate the report and is able to automatically launch the relevant interpretation tool with the relevant interpretation information already loaded.

11. As an example, if a medical report contained a ‘cardiac perfusion polarplot finding’ then the UID in the hyperlink would provide the reader with the following information, as stored in the database at the time of the original finding:
    - Cardiac Processing Engine used
    - DICOM SeriesUID of the input datasets
    - Long axis position
    - Database used for comparison
    - Colour lookup table selected
    - Window level selected

12. In the latest set of claims, received 25th September 2014, there are four independent claims: claim 1 to a medical image processing and retrieval system; claims 8 and 9 to methods of processing medical image data; and claim 10 which is directed to a media device storing computer program code.

13. Claim 8 is the broadest claim. This claim was reintroduced in the amendments submitted on 25th September 2014 having been deleted by the applicant in an earlier amendment.

14. Claim 1 reads as follows:

1. A medical image processing and retrieval system, comprising:

an image processing system configured to obtain a set of medical image data and to process the medical image data by a first user using at least one interpretation tool on said medical image data to generate a report concerning said medical image data;

a database configured to store interpretation information for all interpretation tools used to generate the report and parameters or positions of each of the interpretation tools used for the generation of said report by said first user, said interpretation tools comprising at least one of window level; view type; segmentation; and thresholding; and

a viewing server having a user interface and configured in response to a user interface instruction by a second user to retrieve said report and also to allow retrieval from the database of said medical image data, all of said interpretation tools, all of said parameters or positions of each of the interpretation tools, and all of said stored interpretation information used for the generation of said report when the second user activates at least one link in said report to allow the second user to process the images with the same interpretation tools as the first user who generated said report.

Method claims 8 and 9 read as follows:

8. A method of processing medical image data, comprising the steps of:

obtaining a set of medical image data;

processing the medical image data using at least one interpretation tool; and

storing in a database interpretation information generated in processing the medical image data using the interpretation tool.

9. A method for processing medical image data, comprising the steps of:

providing an image processing system configured to obtain medical image data and for processing the medical image data by a first user using interpretation tools on said medical image data to generate a report concerning said medical image data;

providing a data base configured to store interpretation information for all interpretation tools used to generate the report and parameters or positions of each of the interpretation tools used for generation of said

report by said first user, said interpretation tools comprising at least one of window level, view type, segmentation, and thresholding;

providing a viewing server having a user interface and configured in response to a user interface instruction by a second user to retrieve said report; and

said second user downloading said report at said user interface, and at said user interface said user being allowed to retrieve from the data base by use of said viewing server after downloading said report said medical image data, all of said interpretation tools, all of said parameters or positions of each of the interpretation tools, and all of said stored interpretation information used for generation of said report to allow the second user to process the images with the same interpretation tools as the first user who generated said report.

The Law

15. The examiner has raised an objection under section 1(2) of the Patents Act 1977 that the invention is not patentable because it relates inter-alia to one or more categories of excluded matter. The relevant provisions of this section of the Act are shown below:

1(2) It is hereby declared that the following (amongst other things) are not inventions for the purpose of the Act, that is to say, anything which consists of –

(a) a discovery, scientific theory or mathematical method;

(b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;

(c) a scheme, rule, or method for performing a mental act, playing a game or doing business, or a program for a computer;

(d) the presentation of information;

but the foregoing provisions shall prevent anything from being treated as an invention for the purposes of the Act only to the extent that a patent or application for a patent relates to that thing as such.

16. As explained in the notice published by the UK Intellectual Property Office on 8th December 2008[1], the starting point for determining whether an invention falls within the exclusions of section 1(2) is the judgment of the Court of Appeal in *Aerotel/Macrossan*[2].

[1] http://www.ipo.gov.uk/pro-types/pro-patent/p-law/p-pn/p-pn-computer.htm
[2] *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7

17. The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian*[3]. *Symbian* arose under the computer program exclusion, but as with its previous decision in *Aerotel/Macrossan*, the Court gave general guidance on section 1(2). Although the Court approached the question of excluded matter primarily on the basis of whether there was a technical contribution, it nevertheless (at paragraph 59) considered its conclusion in the light of the *Aerotel/Macrossan* approach. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel/Macrossan* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*[4] which rested on whether the contribution was technical; and that any differences in the two approaches should affect neither the applicable principles nor the outcome in any particular case.

18. Subject to the clarification provided by *Symbian*, it is therefore appropriate to proceed on the basis of the four-step approach explained at paragraphs 40-48 of *Aerotel/Macrossan* namely:

> *(1) Properly construe the claim.*
>
> *(2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution).*
>
> *(3) Ask whether it falls solely within the excluded matter.*
>
> *(4) If the third step has not covered it, check whether the actual or alleged contribution is actually technical.*

Applying the Aerotel test

Step 1

19. The first step is to construe the claims. I do not think this presents any real problems.

Step 2

20. Guidance on how to identify the contribution is given in paragraph 43 of the Aerotel judgment where the court accepted the proposition that identifying the contribution is an exercise in judgment probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise?

21. Focusing on the advantages of the invention the applicant submits that the invention provides a referencing physician receiving a medical report with the ability to reproduce the exact reading environment and tools used when an earlier diagnosis was made – a process not currently possible. This it

[3] *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1
[4] *Merrill Lynch's Appn*. [1989] RPC 561

submits improves the reproducibility of image capture, and improves the process of making a diagnosis, which is performed by the reading physician, externally of the computer. It notes also that the invention does not merely represent a conventional computer system operating in a conventional manner.

22. In his latest communication the examiner suggests that the contribution lies in a system for allowing a first user to obtain medical information, interpret it, store the results of the interpretation including any information generated as part of the interpretation and any interpretation tools used and then allow another user to retrieve this information including the tools used.

23. Having carefully considered the application I believe that the examiner's formulation is closer to the actual contribution. In particular whilst I accept that the systems and method may indeed help the reading physician to reproduce the original processing and interpretation and to apply similar processing and interpretation to an updated image in order to directly compare the two images, these additional steps and also any improved diagnosis resulting from them do not form part of the actual contribution of the invention. Hence I believe the contribution to be as follows:

> A computer implemented system that allows a first user to obtain medical image data, to process and interpret the data using interpretation tools, to store the results of the processing and interpretation of the image and also to store any information relating to the processing and interpretation performed and then to allow another user to retrieve this information, the interpretation tools, the medical image and the results of the processing and interpretation of the image.

24. I would add that I consider this to be the contribution made by claims 1, 9 and 10 (when dependant on claim 9).

25. Claim 8 is as I have noted broader in scope as it does not require retrieval of the medical image data nor the interpretation information. I will return to this claim later if I find claims 1, 9 and 10 not to be excluded.

Steps 3 & 4

26. I am in no doubt that the substance of claims 1,9 and 10 is a computer program and that they make the same contribution. Deciding that the substance of the invention is a program for a computer is of course not the end of the matter. It is very well established in the case law that a program which provides a technical contribution is not excluded ie it is not a program for a computer *as such.*

27. Neither the examiner nor the applicant has referred specifically to the signposts in AT the five "signposts" identified by Lewison J in AT&T/CVON[5]

[5] *AT&T Knowledge Ventures/Cvon Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

though the applicant has suggested that the invention improves the process of making a diagnosis performed by the reading physician and this is done externally to the computer. It also contends that the contribution is not simply limited to a computer program implementing a known process.

28. However even if I accept that the method set out in the invention is a new method and also a better method, it is new and better only in how it chooses to collect and store information and to make that information retrievable to a user. The computer hardware necessary to do this is entirely conventional. The computer running the program is not a better computer in a technical way. There is no technical contribution in the manner in which the additional information is stored or is made retrievable. Rather the contribution merely lies in the nature of the extra information that is stored and made retrievable. That is in my view a form of data processing or a way of handling specific data. As such the invention is excluded as a program for a computer.

29. There is I believe also an argument that the invention is excluded as the presentation of information as such. I note in this respect that the method of interpreting the original image data is not part of the invention. Hence the invention is concerned with providing the second user with the information necessary to duplicate the findings of the first user. I will however say no more on this since the examiner has not raised any objection based on the presentation of information exclusion and consequently the applicant has not had an opportunity to respond.

Decision

30. I have found that the contribution made by the invention defined in independent claims 1, 9 and 10 falls solely in subject matter excluded under section 1(2) as a program for a computer as such. I am of the opinion that broader claim 8 is similarly excluded. I have read the specification carefully but can identify no amendment that could reasonably be expected to form the basis of a valid claim. I therefore refuse this application under section 18(3).

Appeal

31. Any appeal must be lodged within 28 days.

Phil Thorpe
Deputy Director acting for the Comptroller