



## PATENTS ACT 1977

APPLICANT Fujifilm Medical Systems USA Inc

ISSUE Whether patent application GB1915773.4 complies  
with Section 1(2) of the Patents Act 1977

HEARING OFFICER J Pullen

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### DECISION

#### Introduction

- 1 Patent application GB1915773.4 entitled 'Configuring and displaying a user interface with healthcare studies' was filed on 30 October 2019 with a priority declaration from an earlier US application filed on 21 November 2018. It was published as GB2579716A on 1 July 2020.
- 2 The combined search and abbreviated examination report, dated 1 April 2016, reported under Section 17(5)(b) that a search would serve no useful purpose and the examiner, Thomas Davies, set out his reasoning that the claimed invention was excluded from patentability as a computer program, the presentation of information and/or method of doing business. Subsequently, several rounds of amendments and re-examination followed with the examiner reiterating the excluded matter objection and objecting that amendments added matter. Agreement couldn't be reached, and an offer of a hearing was made with the examiner's report of 9 February 2022 highlighting that if the agent responded but did not request a hearing then the application may, nonetheless, be passed for a decision on the papers on file. The agent responded on 11 April 2022 with further amendments and arguments but did not request a hearing and the examiner remained unconvinced, so the case was passed to me for a decision on the papers. The examiner also wrote to the applicant to inform them of this on 6 June 2022 and the agent has since responded again on 20 June 2022 with further amended claims.
- 3 I note that the examiner has not performed a search and has deferred completion of the examination. The matters before me are whether the claimed invention is excluded as a program for a computer, the presentation of information and/or a method for doing business as such. If I find the claimed invention allowable then it will be necessary for me to remit the application to the examiner to perform the search and complete examination.

4 I confirm that in reaching my decision I have considered all documents on file, particularly the amended claims and arguments filed in the agent's letter of 20 June 2022.

**The invention**

5 The invention relates to configuring and displaying a worklist of healthcare studies based on findings from automated image analysis. The healthcare studies are made in response to a physician ordering an examination of a patient and include a diagnostic imaging report with measurements, readings, etc. and images to help in diagnosis and treatment. The method and system are said to allow physicians to easily see the studies that have been received according to a user-specified priority at which they need to be reviewed. The worklist includes both unread and read healthcare studies arranged according to priority.

6 Displaying of the worklist provides a user interface with the user-specified configuration of healthcare studies arranged according to a priority level assigned by the physician based on keywords identified in the image or report by automated image analysis. The image analysis produces textual findings that indicate possible conditions of a patient which may be used to define a score that indicates a chance the patient has an abnormality based on the analysis performed on the images or confidence levels of diagnosis. Figure 5A illustrates an example of a user interface showing a worklist of healthcare studies available for a physician including their priority 500 and score 502.

| All Studies Demo - new |  |  |                    |                           |                  |
|------------------------|--|--|--------------------|---------------------------|------------------|
|                        |  |  | Priority Level 500 | Priority Color Column 501 | Score Column 502 |
|                        |  |  | Priority           |                           | Score            |
|                        |  |  | R                  |                           | 85               |
|                        |  |  | R                  |                           | 90               |
|                        |  |  | R                  |                           | 65               |
|                        |  |  | R                  |                           | 70               |
|                        |  |  | R                  |                           | 60               |
|                        |  |  | R                  |                           | 65               |
|                        |  |  | R                  |                           | 70               |

**FIG. 5A**

7 Figure 4 illustrates an example of a user interface that may be used to configure the priority & scoring of any healthcare studies including windows 401-403. In window 401 the user has selected circle 411 and inserted the word "Pneumothorax" in box 412 to specify a condition that the finding has the word "Pneumothorax" and a corresponding priority colour.

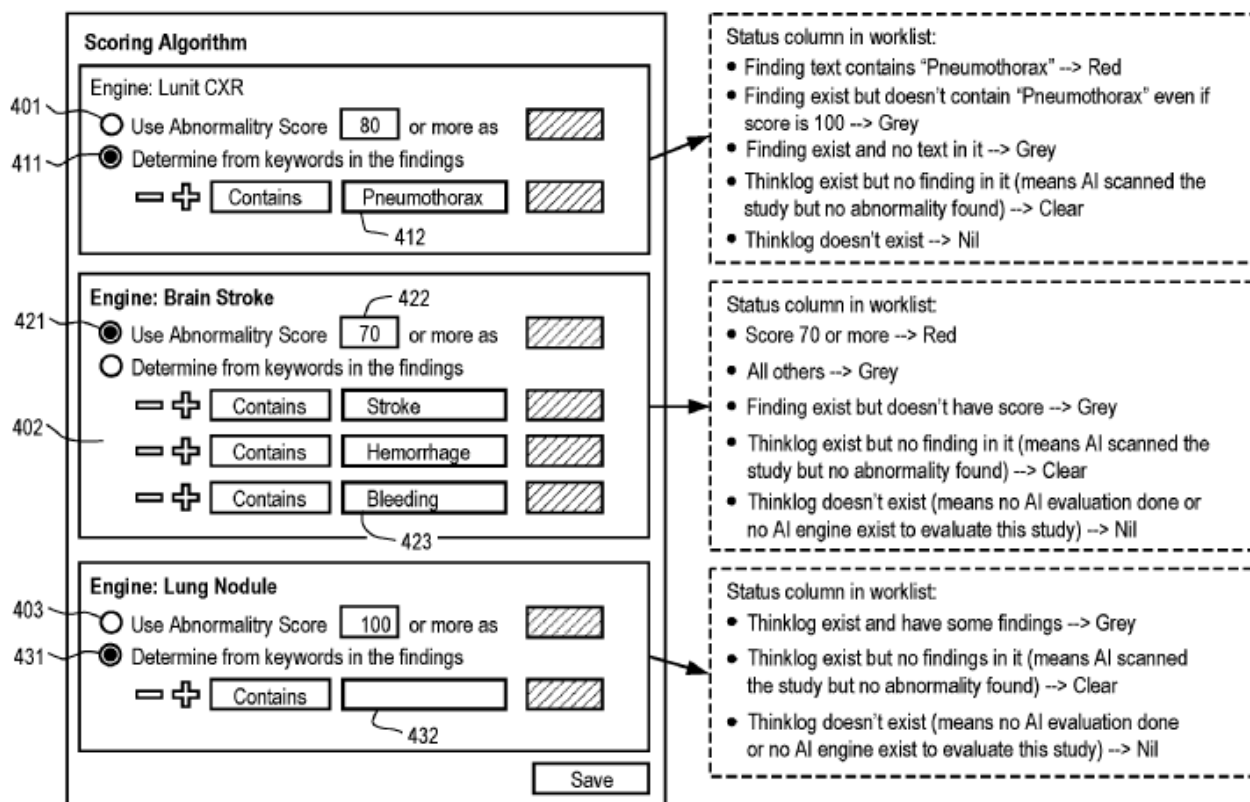


FIG. 4

8 Notification/alert logic is provided to automatically issue a notification, such as by SMS, text or email, for study reviews to physicians responsible for handling a condition associated with a predetermined finding in response to image analysis of a healthcare study identifying the predetermined finding in the results. For example, if the findings indicate the patient has likely experienced a brain stroke, an alert is automatically sent to a stroke team. The predetermined finding comprises one or more keywords in the findings.

9 The current claim set, as amended 20 June 2022, comprises three independent claims: claim 1 to a method, claim 9 to a system and claim 12 to a non-transitory computer readable storage media having instructions stored thereupon which relate to the same inventive concept. They will stand or fall together. Claim 1 reads:

1. A method comprising:

*obtaining, by one or more processors, healthcare studies, wherein the healthcare studies comprise one or more unread healthcare study and one or more read healthcare study, wherein each read healthcare study was assigned a priority level by a medical user;*

*accessing user-specified configuration information for configuring a first user interface of a medical management system, wherein the user-specified configuration information comprises one or more keywords, wherein the one or more keywords each comprise textual findings provided by an automated image analysis algorithm, wherein the image analysis algorithm previously automatically identified the textual findings in one or more images in one or more unread healthcare studies by performing an automated image analysis, the first user interface to display a list of the healthcare studies;*

*determining priority information for the healthcare studies in the list, according to the user-specified configuration information, wherein the determining comprises:*

*for each unread healthcare study of the one or more unread healthcare studies, assigning a priority level to one or more images of a series of images comprising the unread healthcare study, according to the user-specified configuration information, based on performing the automated image analysis on the series of images in the unread healthcare study, wherein the automated image analysis comprises utilizing an image analysis algorithm to perform a textual analysis to locate the one or more keywords in the one or more images of the series of images, wherein the user-specified configuration information comprises pre-defined priority levels for images comprising each keyword of the one or more keywords and not comprising any keyword of the one or more keywords;*

*and*

*for each read healthcare study of the one or more read healthcare studies, according to the user-specified configuration information, obtaining the priority level assigned by the medical user;*

*creating the first user interface with the list of the healthcare studies with the priority information comprising the priority levels of the one or more read healthcare studies and the one or more unread healthcare studies, based on the determining;*

*displaying the first user interface with the list of healthcare studies with the priority information on a display screen of the medical image management system; and*

*sending, by the medical image management system, independent of the displaying the first user interface, an automated alert, responsive to one or more of the findings from the automated image analysis, wherein the user-specified configuration information indicates that the automated alert is to be sent in response to a predetermined finding in the results of automated image analysis performed on one or more image of a healthcare study, wherein the sending comprises sending the automated alert to one or more predetermined healthcare providers responsible for handling a condition associated with the predetermined finding, and wherein the automated alert comprises the one or more keywords.*

## **The Law**

- 10 The examiner has objected that the invention is excluded from being patented as a program for a computer, the presentation of information and/or a method for doing business. The relevant section of the Act is s.1(2), the most relevant provisions of which are shown below with my emphasis added:

*1(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of-*

*(a) ...;*

*(b) ...;*

*(c) a... method for... doing business, or a program for a computer;*

*(d) the presentation of information;*

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

- 11 The Court of Appeal has said that the issue of whether an invention relates to subject matter excluded by Section 1(2) must be decided by answering the question of whether the invention reveals a technical contribution to the state of the art. The Court of Appeal in *Aerotel/Macrossan*<sup>1</sup> set out the following four-step approach to help decide the issue:

*(1) Properly construe the claim;*

*(2) Identify the actual contribution;*

*(3) Ask whether it falls solely within the excluded subject matter;*

*(4) Check whether the actual or alleged contribution is actually technical in nature.*

- 12 The operation of the approach is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is an exercise in judgment involving the problem said to be solved, how the invention works and what its advantages are; essentially, what it is the inventor has really added to human knowledge, looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution.
- 13 In *Symbian*<sup>2</sup> the Court of Appeal reaffirmed the *Aerotel* approach while considering a question of “technical contribution” as it related to computer programs emphasising the need to look at the practical reality of what the program achieved, and to ask whether there was something more than just a “better program”.
- 14 The case law on computer implemented inventions was further elaborated in *AT&T/CVON*<sup>3</sup> which provided five helpful signposts to apply when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*<sup>4</sup>, Lewison LJ reconsidered the fourth of these signposts and felt that it expressed too restrictively. The signposts are:

*i. whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;*

*ii. whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run;*

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<sup>1</sup> *Aerotel Ltd v Telco Holdings Ltd & Ors* Rev 1 [2007] RPC 7

<sup>2</sup> *Symbian Ltd's Application* [2009] RPC 1

<sup>3</sup> *AT&T Knowledge Ventures/Cvon Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

<sup>4</sup> *HTC v Apple* [2013] EWCA Civ 451

- iii. whether the claimed technical effect results in the computer being made to operate in a new way;*
- iv. whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer;*
- v. whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.*

- 15 The examiner also refers to the decisions in *Gemstar v Virgin Media*<sup>5</sup>, *Autonomy*<sup>6</sup>, *Merrill Lynch's Application*<sup>7</sup> and the Hearing Officer's decisions O/455/17, O/402/19 and O/503/21.
- 16 The agent arguments refer to the EPO Guidelines (G-II, 3.7.1) to assert the claims do not fall solely within excluded subject matter. In the absence of comprehensive arguments as to their relevance, and as I am not bound by the Guidelines, I have not considered these further.

## **Assessment**

### ***(1) Properly construe the claim***

- 17 The examiner's reports conclude that there are no issues with construction per se only noting that the term "alert" relates to a notification such as "SMS, text, email, or other message, a chat indication indicating a chat session is desired with the physician, etc." from paragraph 80.
- 18 The most recent set of claims were filed after the examiner's letter of 6 June 2022 indicating that this application was being forwarded for a decision on the papers and therefore have not been examined for added matter. I will proceed on the basis that the latest amendments do not add matter.
- 19 I construe the claim as a method of displaying a user interface of read and unread healthcare studies with a priority level of read studies assigned by a medical user and user-specified configuration information, comprising pre-defined priority levels for images (i) comprising one or more keywords and (ii) not comprising any keyword of the one or more keywords, is used to assign a priority level to unread studies based on the presence of keywords in textual findings provided by an automated image analysis performed on healthcare study images; the method also sends an automated alert to one or more predetermined healthcare providers responsible for handling a condition associated with a predetermined finding, responsive to the textual findings of the healthcare studies including the predetermined finding, and wherein the automated alert includes the keywords.

### ***(2) Identify the actual contribution***

- 20 In their report of 6 June 2022, the examiner identifies the alleged contribution as:

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<sup>5</sup> *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

<sup>6</sup> *Autonomy Corp Ltd v Comptroller General of Patents, Trade Marks & Designs* [2008] EWHC 146(Pat)

<sup>7</sup> *Merrill Lynch's Application* [1989] RPC 561

*“a computer program to receive user preferences via an interface; to display a list of healthcare studies with priority information determined based on automated image analysis of images in the studies and on the user preferences; and to output a notification if a predetermined finding is found.”*

- 21 Whilst no search has been performed the examiner notes that OCR (Optical Character Recognition) is conventional and several documents (US 2016/0350919 A1, US 2013/0024208 A1, US 2007/0041623 A1, and US 2013/0039552 A1) show that methods involving automated analysis of medical images to identify keywords and findings therein, prioritise studies displayed in lists for review by medical personal and issue automated alerts were known before the priority date.
- 22 None of the applicant’s comments directly provide an alternative to the examiner’s contribution. However, there are numerous statements in their latest letter that “the prior art does not teach...” features of claim 1 which suggests that the contribution is narrower than proposed by the examiner. I have not considered each of these statements in depth as they do not seem pertinent to the question before me.
- 23 The application identifies problems with earlier methods of prioritising worklists of healthcare studies which they say can lead to the physician being unaware of findings which could cause a patient harm or delay in treatment. The claimed invention is said to allow a physician to easily see studies that have been received and the priority at which they need to be reviewed.
- 24 The contribution lies in a method of displaying a user interface of a list of both read and unread healthcare studies with priority information, wherein each read healthcare study has a priority level assigned by a medical user and each unread healthcare study is assigned a priority level with reference to user-specified configuration information which includes one or more keywords and pre-defined priority levels for (i) images comprising each keyword of the keywords and (ii) not comprising any keyword of the keywords, based on automated image analysis of the images in the unread healthcare study identifying text therein; and sending, an automated alert including the keywords to predetermined healthcare providers responsible for handling a condition associated with a predetermined finding from the automated image analysis of studies and user-specified configuration information.

***(3) Ask whether it falls solely within the excluded subject matter and (4) Check whether the actual or alleged contribution is actually technical in nature***

- 25 I will consider steps (3) and (4) together.
- 26 The examiner concludes that the alleged contribution is excluded from patentability as a computer program, the presentation of information and/or a method of doing business as such in their report of 6 June 2022. In the letter of 20 June 2022, the applicant disagrees submitting that the claims are patentable because the invention provides a contribution that does not fall solely within excluded subject matter.

### **Computer program**

- 27 There is no disagreement that the contribution is a computer program. The disagreement between the examiner and the applicant is whether that computer

program makes a relevant technical contribution. The examiner proposes that it doesn't, and the applicant disagrees.

- 28 The examiner considers each of the signposts in turn in their report of 1 April 2020 and concludes that none suggest that the computer program makes a relevant technical contribution. In their response of 25 Jan 2021, the applicant submits that the amended claims are more clearly linked to a technical effect on a process which is carried on outside a computer (signpost i), and to overcoming a problem, rather than circumventing it (signpost v). In their letter of 22 November 2021, the applicant asserts that the prioritization of unread studies increases the efficiency of the computing (signpost iv).

**i. whether the claimed technical effect has a technical effect on a process which is carried on outside the computer**

- 29 The examiner asserts that the alleged contribution relates entirely to data processing carried on within the computer and does not involve an effect on a process carried on outside the computer, so the first signpost is not met, in their report of 1 April 2020. The applicant disagrees in their response of 25 Jan 2021 asserting that the contribution provides for improved efficiency of image review and are linked to a technical effect on a process which is carried on outside a computer. In turn, the examiner says that whilst, in some sense, image review is a process carried on outside a computer, it is not a technical process as it is a business process performed by a human professional e.g., a physician. They go on to conclude that even if this process is made more efficient, a more efficient business process does not provide a technical effect. Subsequent responses from the applicant do not add any further arguments about there being an effect carried on outside the computer.
- 30 Whilst this signpost references "the computer" it does not mean that any effect taking place outside a computer meets it. Instead, it identifies that an invention which would conventionally be regarded as patentable should not be excluded from protection by being implemented as a computer program. In this instance a method of prioritising medical studies based on words in the images of those studies and alerting healthcare providers if certain words are present without using a computer would not conventionally be regarded as patentable. I agree with the examiner, the first signpost does not suggest that the computer program has a technical effect.

**ii. whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run**

- 31 The examiner proposes that the alleged contribution operates at the application level and operates on specific types of data (i.e., healthcare studies), does not involve an effect at a higher level of generality within the computer and the second signpost is not met. The applicant does not dispute this, and I agree that the second signpost does not show there is a technical effect.

**iii. whether the claimed technical effect results in the computer being made to operate in a new way**



32 The examiner asserts that the alleged invention involves executing the claimed program, but this does not result in the computer being made to operate in a new way beyond executing a new program and that the third signpost is not met. Again, the applicant does not dispute this. I agree, the third signpost does not assist them.

**iv. whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer**

33 In their original report the examiner stated that while the alleged invention may provide an improved way of displaying a list of healthcare studies, it does not do so by making the computer more efficient or effective as a computer and therefore the fourth signpost is not met.

34 In their letter of 22 November 2021, the applicant asserts that the analysis performed by the method is inextricably tied to computing and, the prioritization of unread studies increases the efficiency of the computing. The examiner disagrees in their report of 9 February 2022 saying that it is not clear how prioritisation of unread studies might increase the efficiency of any computing processes and that the only process to which this might relate is the business process of reviewing studies. I agree, the computer is not a better computer in the sense of running more efficiently and effectively as a computer and the fourth signpost also does not suggest the computer program provides a technical effect.

**v. whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented**

35 The examiner identifies the perceived problem to be that when algorithms are used to automate the process of evaluating images in healthcare studies, the interpreting physician may be unaware of the findings even though results are available. This could cause a patient harm or delay in treatment if not reviewed with the quickness associated with the priority level of the findings. They conclude that this problem is not technical in nature as it relates to the way information is presented to support business operations (i.e., the prioritisation of review resources) and the fifth signpost does not apply.

36 In their response of 25 Jan 2021, the applicant submits that the claimed invention can improve the efficiency of image review and suggests that paragraph 80 is an example of this. Thus, they say the claimed invention overcomes problems rather than circumventing them. Paragraph 80 describes sending alerts to physicians, medical personnel, and healthcare providers in response to a predetermined finding in the results of automated image analysis. The alleged problems lie with earlier methods of prioritising medical studies and alerting healthcare providers. This lacks technical character, and the fifth signpost is not met.

37 Taking a step back, what the program achieves is no more than just a program. It provides a method of displaying a user interface of healthcare studies with an assigned priority level based on keywords in the studies identified by image analysis and sending an alert to healthcare providers responsive to the keywords including predetermined findings. The alleged problems lie in healthcare settings, any effect is limited to healthcare settings, and it is the healthcare study display and alert method

that is new and may be better when compared to earlier healthcare study display and alert methods.

- 38 Having fully considered the applicant's arguments I am not persuaded. I find the application is excluded from being patented under Section 1(2) as a program for a computer as such.

### **Business method**

- 39 The examiner's report of 21 July 2021 states that while image review may be carried on outside a computer (responding to a comment in the agent's letter of 25 January 2021 about signpost (i) above), it is not a technical process as it is a part of a business process performed by a physician. They go on to say that even if this process is made more efficient, a more efficient business process does not provide a technical effect per *Merrill Lynch's Application*. Subsequently their report of 9 February 2022 suggests that as it is not clear how prioritisation of unread studies might increase the efficiency of any computing processes the only process to which this might relate is the business process of reviewing studies.
- 40 The agent's letters do not specifically address the exclusion to a method of doing business. Their letter of 22 November 2021 proposes that the analysis is inextricably tied to computing and, the prioritization of unread studies increases the efficiency of the computing. As noted above in the discussion of signpost iv the examiner disagrees indicating that it is only the business process of reviewing studies that might see an increase in efficiency because of the method.
- 41 Having fully considered the applicant's arguments I am not persuaded. I find the application is also excluded from being patented under Section 1(2) as a method of doing business as such.

### **Presentation of information**

- 42 The examiner's report of 6 June 2022 proposes that the contribution can also be regarded as the presentation of information as such considering the decisions in *Gemstar v Virgin Media and Autonomy*.
- 43 The agent's letter of 20 June 2022 disagrees asserting that the contribution is not merely the presentation of information, because the information presented must first be derived in a specific manner.
- 44 There are aspects of the claims that are drawn to presenting information on healthcare studies with user-assigned priority level in a user interface but there is little detail of the features of that presentation. I agree with the applicant that the features drawn to deriving the prioritisation of the healthcare studies using automated image analysis go beyond the presentation of information. To my mind the contribution is not just the presentation of information.

### **Amended claims**

- 45 Further to my previous comments in paragraph 18, I have briefly reviewed the claims filed on 11 April 2022. When compared to claim set considered in the body of this

decision, I do not believe analysis of the earlier claim set would result in a different outcome.

### **Conclusion**

- 46 I find the application to be excluded from being patented under Section 1(2) as a program for a computer and a method for doing business as such. I therefore refuse the application under Section 18(3).

### **Appeal**

- 47 Any appeal must be lodged within 28 days after the date of this decision.

**J Pullen**

Deputy Director, acting for the Comptroller