



PATENTS ACT 1977

APPLICANT Canon Kabushiki Kaisha

ISSUE Whether patent application GB1802583.3 complies with Sections 1(2) & 14(5)(b) of the Patents Act 1977

HEARING OFFICER J Pullen

DECISION

Introduction

- 1 Patent application GB1802583.3 entitled 'Information processing apparatus, image forming apparatus, system, method of controlling the same, and storage medium' was filed on 16 February 2018 claiming priority from an earlier Japanese application filed on 17 February 2017. The application was published as GB2561948A on 31 October 2018.
- 2 The application has been through an extraordinary number of rounds of amendment and re-examination, with several supplementary searches carried out due to changes in the scope of the claims. The examiner objected to various earlier versions of claims on the grounds of novelty, inventive step, clarity and excluded matter. In his exam report of 11 August 2021 the examiner set out his reasoning that the claimed invention was excluded from patentability as a method of doing business and/or a computer program as such together with an offer of a hearing. The applicant responded, via their agent, on 13 October 2021 with further amendments and arguments, and a request for a decision on the papers if the examiner remained unconvinced. The examiner wrote to the applicant on 22 October 2021 setting out that the amended claims were also excluded and a new objection that the amended claims lack clarity. The application has been passed to me for a decision on the papers.
- 3 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 13 October 2021. I note that the extended compliance period for this application ended on 17 October 2021.

The invention

- 4 The invention relates to an information processing apparatus and a method of controlling the same. When communicating with an external server, an information processing apparatus uses an electronic certificate to perform secure communication

and authentication. Such certificates have validity periods after which they are no longer valid and not useable for authentication/verification. Problems are said to arise if a certificate is not updated when, or before, the validity period expires and updating is a time-consuming burden for users/administrators when there are many information processing apparatus that need to update electronic certificates.

- 5 The invention defines an apparatus and method which transmits a certificate issuance request to an external apparatus at a predetermined timing, receives in response a certificate and updates a stored certificate. The predetermined timing is based on a date and a time and an update cycle for updating the certificate set via a screen.
- 6 Figure 18 below depicts an example certificate update setting screen. An update date and time for the electronic certificate can be set via this screen with three settings of: an update date and time (1801); a time period (1802) prior to the expiration of the validity period; and a time period between intervals or a date for defining a cycle (1803). In the update date and time (1801), the year, the month, the day, and the time for the update can be set. The time period (1802) designates a number of days before the expiry of the validity period of the currently used electronic certificate. The apparatus executes the electronic certificate automatic update function based on a cycle as defined by this time period/date based on a predetermined number of days, a predetermined day of each month, or a predetermined day and month of each year.

FIG. 18

CERTIFICATE OBTAINMENT REQUEST/SETTING SCREEN	
CERTIFICATE LIST CONNECTION SETTINGS CA CERTIFICATE OBTAINMENT CERTIFICATE ISSUANCE REQUEST RESERVATION SETTING	ELECTRONIC CERTIFICATE UPDATE RESERVATION SETTING 1801 <input type="radio"/> DESIGNATE AN UPDATE DATE OBTAINMENT REQUEST START DATE <input type="text"/> YEAR <input type="text"/> MONTH <input type="text"/> DAY OBTAINMENT REQUEST START TIME <input type="text"/> HOUR <input type="text"/> MINUTE
	<input checked="" type="radio"/> UPDATE THE ELECTRONIC CERTIFICATE IN A CASE WHERE A NUMBER OF DAYS BEFORE THE EXPIRY OF THE VALIDITY PERIOD OF THE CURRENTLY USED ELECTRONIC CERTIFICATE IS A PREDETERMINED NUMBER OR LESS 1802 <input type="text"/> 14 DAYS BEFORE THE EXPIRATION OF THE VALIDITY PERIOD
	<input type="radio"/> UPDATE BASED ON A PREDETERMINED CYCLE 1803 <input type="radio"/> UPDATE AT <input type="text"/> DAY INTERVAL <input type="radio"/> UPDATE ON <input type="text"/> DAY OF EVERY MONTH <input type="radio"/> UPDATE ON <input type="text"/> MONTH <input type="text"/> DAY OF EVERY YEAR

- 7 The current claim set, as amended 13 October 2021, comprises two independent claims: claims 1 to an information processing apparatus and claim 8 to a method which relate to the same inventive concept. Claim 22 specifies a computer-readable storage medium storing a program for causing a processor to operate a method of claim 8. They relate to a single inventive concept and will stand or fall together. Claim 1 reads:

1. An information processing apparatus comprising:
 a transmitter configured to transmit an electronic certificate issuance request to an external apparatus at a predetermined timing;

a receiver configured to receive an electronic certificate from the external apparatus as a response to the electronic certificate issuance request; and an updating unit configured to update an electronic certificate stored in a storage of the information processing apparatus using the electronic certificate received by the receiver,

wherein the predetermined timing is a timing based on a date and a time for updating the stored electronic certificate and an update cycle for updating the electronic certificate that are set via a screen, and

wherein the predetermined timing is independent from a timing at which a validity period of the electronic certificate expires.

The Law

- 8 The examiner has objected that the invention is excluded from being patented as a program for a computer and 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) ...;

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.

- 9 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*¹ 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.

- 10 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.

¹ *Aerotel Ltd v Telco Holdings Ltd & Ors* Rev 1 [2007] RPC 7

11 In *Symbian*² 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”.

12 The case law on computer implemented inventions was further elaborated in *AT&T/CVON*³ which provided five helpful signposts to apply when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*⁴, 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;

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.

13 The examiner also refers to judgments in *Fujitsu Limited’s Application*⁵ and *Lantana v Comptroller General of Patents*⁶ in their consideration of whether the invention is excluded.

14 In his most recent report the examiner also objects that a phrase added to each of the independent claims renders them unclear; the relevant section of the Act is s.14(5), the most relevant provisions of which are shown below:

14(5) *The claim or claims shall -*

(a) ...

(b) be clear and concise;

(c) be supported by the description; and

...

Assessment

15 As the examiner has noted in paragraph 13 of his report dated 22 October 2021, if I agree there is a clarity issue in the independent claims I could find that the application was not in order at the compliance date and refuse the application without considering the excluded matter objection. As I have to construe the claims

² *Symbian Ltd’s Application* [2009] RPC 1

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

⁴ *HTC v Apple* [2013] EWCA Civ 451

⁵ *Fujitsu Limited’s Application* [1997] RPC 608

⁶ *Lantana v Comptroller General of Patents* [2013] EWHC 2673 (Pat)

as part of the assessment of excluded matter this will go some way to addressing the issue of clarity, I will therefore consider the excluded matter objection first.

Assessment of excluded matter

(1) Properly construe the claim

- 16 The agent's letter of 13 October 2021 makes no comment on this step and there had previously been agreement that this step didn't present any difficulty.
- 17 The examiner believes the newly introduced requirement that the 'predetermined timing' is "...*independent from a timing at which a validity period of the electronic certificate expires*" in amended claims 1 and 8 is unclear. They assert, based on numerous references in the description, that the update settings do require some relationship (and therefore are not independent) to the validity period of the certificate in order to address the problems identified in the application.
- 18 A straightforward construction of the claim does not require there to be a relationship between the update settings and the certificate expiry date; indeed, it specifies they are independent. I agree with the examiner that the claimed invention would not now necessarily address the problems the application initially set out to address, but this does not mean the current claims are unclear per se. I will proceed with the *Aerotel* approach on the basis that this phrase, and the rest of the claim, is clear as read.

(2) Identify the actual contribution

- 19 The agent's letter of 13 October 2021 proposes that the advantage of the current claim set over the prior art identified by the examiner is that '...a user of the information processing apparatus who desires improvement of the security of the electronic certificate, can update stored electronic certificate more frequently irrespective of the validity period of the stored electronic certificate.' and that '...the invention makes possible the freedom to make frequent updates of the certificate without being bound by knowledge of or reference to the validity date of a current certificate'.
- 20 They say the actual contribution over the prior art, as a matter of substance, is 'an information processing apparatus (or method) in which further digital security for electronic certificates may be provided'.
- 21 I find this interpretation of the contribution to be excessively broad and not necessarily achieved by the claimed invention. Paragraph 43 of *Aerotel/Macrossan* sets out 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, and it is for these reasons the comprehensive discussion of the problems addressed and advantages of the invention in the examiner's letter of 22 October 2021 are particularly relevant and I am in agreement with the examiner. As noted in paragraph 18 of his letter the examiner explains that for any of the stated improvements in security to be achieved the update date/time or the update cycle must occur prior to the certificate expiry. There is no direction given in the application as filed as to suitable choices of dates/times/frequency, and particularly

to those required in order to achieve the benefits stated in the agent's letter of 13 October 2021.

- 22 Additionally, the examiner explains that the prior art shows performing automatic updating of certificates, in which a new certificate is requested from an external apparatus with settings for controlling the updating of a certificate which may be input via a screen. They go on to say that making a setting independent from the current certificate's validity date/expiry date is not a contribution the application has added to the stock of human knowledge as they believe the prior art facilitates such a mechanism already. Again, I am in agreement with the examiner. The examiner goes on to conclude that, in the broadest sense, the contribution is:

“Automatically updating a certificate stored in an information processing apparatus according to a user-specified reserved date and time and according to a user-specified update cycle”.

- 23 The problems identified in the application have been solved in the prior art and the invention works in essentially the same way. That the update timing can be set independently of the validity period negates the benefits described in the application that the invention is said to address. Such independence allows the problems identified in the application to recur; if the user sets an update date/time/cycle after the validity period expires communication will be disabled and not doing so will be burdensome for the user/administrator. Whilst the current claim is certainly different to the prior art it is not apparent that that difference is one of substance which has clearly added to human knowledge. The agent's characterisation of the contribution does not provide any indication of what they propose has really been added to human knowledge. I will proceed with my analysis based on the examiner's statement of the contribution.

(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

- 24 I will consider steps (3) and (4) together.
- 25 The apparatus would be provided by conventional hardware running a computer program to perform the method as a matter of practical reality, and as defined in claim 22. I must decide if what the program achieves is more than just a “better program” and makes a relevant technical contribution. Firstly, I will consider the five signposts from *AT&T/CVON*.
- 26 The agent's letter of 13 October 2021 proposes that the invention satisfies at least signposts (iv) and (v). The examiner considers signposts (i) to (iii) in their letter of 22 October 2021 and concludes that none are met. I have considered signposts (i) to (iii) and, in the absence of any argument to the contrary, agree with the examiner that they do not assist the applicant.

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

- 27 Regarding signpost (iv) the agent asserts that the computer implementing the process runs more effectively because it can maintain improved security provision for electronic certificates.
- 28 The examiner disagrees, stating that whilst the timing of update requests may be modified the computer is not operating more efficiently or effectively to do this. They say that both the prior art and the current invention implicitly require the computer to periodically poll the stored settings, to see if the predetermined date and time setting and/or update cycle setting has been reached and if so go ahead and commence an update request.
- 29 I agree with the examiner; the system is no more efficient or effective than those of the prior art. The contribution does not improve security provision for electronic certificates. I also observe that providing the user with the independence to set an update date, time and cycle which is after the expiry of the validity period of the certificate could achieve the opposite effect. Furthermore, excessive frequency of polling the stored information according to an unnecessarily short update cycle could have a detrimental effect on the efficiency and effectiveness of the computer. The fourth signpost does not suggest the program makes a relevant technical contribution.

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

- 30 Regarding signpost v) the agent asserts that the problem is not circumvented, it is solved by providing a new explicit freedom in setting the automatic update of the certificates that is not tied to the validity period (expiry date) of the electronic certificate in question. This they say is in direct contrast to the prior art which teaches updating certificates before they expire according to some threshold period before the validity period of the certificate ends.
- 31 The examiner disagrees providing extensive reasoning on this point. They state, amongst other things, that the problem addressed seems to be allowing a user to specify desired times and intervals for update certificates to overcome the burden on the administrator who may have many such certificates to maintain. They then conclude that there is no apparent improvement over the prior art in this regard.
- 32 The perceived problem said to be overcome in the agent's most recent submissions is at odds with the ones set out in the application. This is not surprising given the changes in the scope of the claims, but neither is it in any way helpful. The "new explicit freedom" provided by the program would allow the problems identified in the application to occur and cause the user/administrator the heavy workload/burden to establish appropriate settings. The problems identified in the application are not overcome or circumvented by the program and have been overcome by the prior art. The fifth signpost does not suggest the program makes a relevant technical contribution.
- 33 In their examination report of 5 July 2021 and letter of 22 October 2021 the examiner also highlights precedent caselaw that supports the premise that steps performed by a computer to do steps that would otherwise have been performed manually are unlikely to satisfy the computer program exclusion. They also set out that such

administrative methods fall under the business method exclusion and that setting the frequency for updating certificates is a user/administrator choice balancing cost and risk rather than any technical improvement of the system.

- 34 The agent disagrees, they say the problem solved is not one of mere automation of an administrative task and assert that it also takes into account the fallibility of networked computer systems, and solves a problem that may arise due to error in the update cycle due to the information processing apparatus not being powered on or a communications error taking place. Thus, the root of the invention is in permitting improved security to address the shortcomings of networked devices with higher frequency updates (taught nowhere in the prior art).
- 35 That problems "...may arise due to error in the update cycle due to the information processing apparatus not being powered on or a communications error taking place" and there are "...shortcomings of networked devices with higher frequency updates..." is all very well but the presently claimed invention does not necessarily address either of these. Nor does it address the fallibility of networked computer systems any more or less than the prior art. Setting the timing of certificate updates independently of the validity period of those certificates is an administrative matter that is regarded as a business method as such.
- 36 I do not believe that adopting a narrower contribution which includes the feature of the prescribed time being independent of the validity period would have any material effect on the outcome following consideration of the signposts.
- 37 Taking a step back, what the program achieves is no more than just a program. It allows a user more freedom in setting a date/time/cycle for updates, but this does not provide a relevant technical contribution as the update mechanism is the same as the prior art. Nor does it address the problems identified in the application with earlier update methods which are also addressed by the prior art. Having fully considered the applicant's arguments I am not persuaded. 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.

Observation – Clarity

- 38 As I have construed the claims and found the invention to be excluded there is little benefit to me separately considering the clarity objection - as stated in paragraph 18 above, prima facie the words used in amended claims 1 and 8 are clear. However, the claims are not now in keeping with the invention described in the application which emphasises the need for updates to be performed before (i.e. dependent on) the validity period expiry and may therefore lack support contrary to s.14(5)(c). Nor is there direct, clear and unambiguous disclosure of wording used in the latest amendments (which may therefore add matter contrary to s.76(2)). I do not need to consider either of these matters further here.

Conclusion

- 39 I find the claims to be excluded under Section 1(2) as a program for a computer and a method for doing business as such. Given the considerable time and effort already invested in unsuccessful attempts to identify and agree a set of patentable claims, I

have no intention of reviewing the documents on file in an attempt to identify any patentable subject matter. I therefore refuse the application under Section 18(3).

Appeal

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

J Pullen

Deputy Director, acting for the Comptroller