



## PATENTS ACT 1977

APPLICANT	Corethree Ltd.
ISSUE	Whether patent applications GB 1403069.6 and GB 1701773.2 comply with section 1(2)
HEARING OFFICER	C L Davies

---

## DECISION

### Introduction

- 1 This decision relates to two patent applications: GB 1403069.6 and its divisional application, GB 1701773.2, in the name of Corethree Ltd.
- 2 GB 1403069.6 is the national phase entry of PCT application PCT/GB2012/051168. The PCT application was searched by the International Search Authority. The application was published as GB2508112A 21 May 2014. The examiner has maintained that the claimed invention relates to excluded matter as a computer program, a method of doing business, and the presentation of information as such, and has deferred consideration of all other aspects of examination.
- 3 GB 1701773.2 is a divisional application of GB 1403069.6. The application was published as GB2543003A on 5<sup>th</sup> April 2017. The examiner has similarly maintained that the claimed invention relates to excluded matter as a computer program, a method of doing business, and the presentation of information as such. The examiner issued a section 17(5)(b) report and an abbreviated examination report on 23 February 2017, and has again deferred consideration of all other aspects of examination.
- 4 In the final examination reports issued 30 October 2017 the examiner offered a hearing to decide both applications together, and this offer was accepted. A pre-hearing report for each application was issued on 11 December 2017. Skeleton arguments were filed on 2 February 2018 and I am very grateful to the applicant for providing these in good time. The hearing took place by video conference on 9 February 2018. Corethree Ltd were represented by Dr David Bottomley of Origin Intellectual Property Consulting and Mr Richard Kershaw, Chief Technology Officer of Corethree Ltd.

## Issue to be decided

- 5 The issue to be decided for both applications is whether the claimed inventions fall into the excluded categories of a computer program, a method of doing business, and the presentation of information as such, as defined in sections 1(2)(c) and 1(2)(d) respectively of the Patents Act 1977.

## The law

- 6 The relevant section of the Patents Act 1977 is as follows:

*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) 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 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.*

- 7 There is no dispute that the current practice in dealing with excluded matter is to be derived from the judgement of the Court of Appeal in *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7 (*Aerotel/Macrossan*). In that judgement, the following four step test was given:

*(1) properly construe the claim*

*(2) identify the actual (or alleged) contribution*

*(3) ask whether it falls solely within the excluded matter*

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

- 8 Subsequently, the Court of Appeal in *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1 made clear that the *Aerotel/Macrossan* test is not intended to provide a departure from the previous requirement set out in case law, namely that the invention must provide a "technical contribution" if it is not to fall within excluded matter. The *Aerotel/Macrossan* test has subsequently been endorsed by the Court of Appeal in its decisions in both *HTC Europe Co Ltd v Apple Inc* [2013] RPC 30 and *Lantana Limited and The Comptroller General of Patents, Designs and Trade Marks* [2014] EWCA Civ 1463.

- 9 Lewison J in paragraph 40 of *AT&T Knowledge Ventures/Cvon Innovations v Comptroller General of Patents* [2009] EWHC 343 (*Pat*) set out five signposts that he considered helpful for assessing whether a computer program makes a technical contribution. Later, as Lewison LJ, he reformulated signpost (iv) in *HTC v Apple* [2013] EWCA Civ 451. The signposts are as follows:

- (i). whether the claimed technical effect has a technical effect on a process which is carried on outside the computer (from Vicom)*
- (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 (from IBM T 0006/83, IBM T 0115/85, Merrill Lynch, Symbian)*
- (iii). whether the claimed technical effect results in the computer being made to operate in a new way (from Gale)*
- (iv). whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer (from Vicom, Symbian; as reworded in HTC v Apple)*
- (v). whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented (from Hitachi T 0258/03 – note that the problem in question must be a technical problem)*

## **The inventions**

- 10 The field of the inventions is a platform for the delivery of content and services to networked connected computing devices, typically smartphones, tablets, and so on. According to the description, typical services include the sale and promotion of products, the digital distribution of tickets, and live information aggregated from the internet, and the stated aim of the invention is to provide a faster, more efficient and reliable method of delivering content and services to networked connected computing devices. The description goes into some detail of an implementation of the content delivery system. However, the currently claimed inventions relate specifically to a digital ticketing system.

## **The claims**

- 11 Multiple sets of amended claims were filed for each application along with the applicant's skeleton argument, on 2 February 2018, referred to as a main request, a first auxiliary request, and a second auxiliary request for GB 1701773.2, and a main request and a first auxiliary request for GB 1403069.6.
- 12 The case made by Dr Bottomley in the skeleton arguments concentrated on the amended claim 1 of the main request of divisional application GB 1701773.2, and at the hearing the discussion was mainly around this claim set. For this reason I will similarly focus on the main request of the divisional application, and I will come back to the parent application GB 1403069.6 and the auxiliary requests later.

## **Application GB 1701773.2**

- 13 Amended Claim 1 of the main request of divisional application GB 1701773.2 reads as follows:
1. *System including a server and multiple mobile computing devices, each mobile computing device including a respective screen, the multiple mobile computing devices each connectable to the server via a network, the server including a database storing content, the content deliverable to the mobile computing devices when in connection with the server via the network,*

*the content including digital tickets, wherein each mobile computing device is configured to receive and to display a digital ticket on the respective screen, the digital ticket when displayed on the respective screen including an animated watermark or an animated image that indicates that the digital ticket is validly available for use.*

## **Argument and analysis**

### Step 1: properly construe the claim

- 14 The examiner found the claims which he had considered to be clear and had no trouble with construing their meaning for the purposes of step 1 of the *Aerotel/Macrossan* test. The examiner's objection focussed more on step 2, the contribution of the invention. However, I am considering the claims afresh and therefore not bound to follow the arguments and reasoning that the examiner used. I think it is worth pausing at this stage to construe the terms of the claim in more depth.
- 15 During the hearing, as Dr Bottomley developed the arguments around the contribution of the invention, it became clear that everything turns on the applicant's assertion that the claimed digital ticket has significantly increased security as a result of the animated watermark or animated image. I note that the claim wording reads "...an animated watermark or an animated image that indicates that the digital ticket is validly available for use". Nowhere does the claim mention security. The construction of the term "validly available for use" is therefore crucial to this case. Normal principles of claim construction are to be used when applying step 1 of the *Aerotel/Macrossan* test, and this means the claims are to be interpreted in light of the description.
- 16 The description does not anywhere discuss specifically the issue of security or of preventing forgery of digital tickets. This point appears to have arisen during the correspondence between the examiner and the applicant. In the applicant's response letter dated 18 July 2017, filed together with amended independent claims introducing the feature of "an animated watermark or an animated image that indicates that the digital ticket is validly available for use", it was asserted that "the contribution of the amended independent claims includes the advantage of the invention that it makes the digital tickets harder to forge, and therefore it makes the digital tickets more secure". The examiner appears to have accepted the applicant's assessment of the contribution to the extent that the purpose or intention was to improve security of the digital ticket, although he disagreed that any increase in security of an animated image was significant over, for example, a static image.
- 17 At the hearing, I queried whether the security advantages are disclosed in the specification. Dr Bottomley's response was that the Act does not require any disclosure of the problem to be made, and that although this is desirable it is not necessary. Although it is true that no explicit discussion of the problem to be solved, or of the advantages of the invention, is required in the disclosure, it is helpful to be able to establish them in order to assess the contribution of the invention. If they are not explicit, then they must be derived from the nature of the invention, and it is clear that we must derive them from what is actually disclosed in the specification.

- 18 The part of the description which discusses digital ticketing (mainly at page 33 line 21-page 38 line 11) explains that digital tickets have an animated watermark or animated image. The animated watermark or animated image may comprise a colour and code word, and it appears the system ensures that every device displays an identical graphic at any given time, because all devices update the colour and code word simultaneously. In the example of a digital bus tickets, this enables bus drivers or other staff to easily verify the validity of the ticket displayed by a passenger on the screen of their smartphone. The description goes on to explain the properties digital tickets may have, such as whether the ticket has been redeemed, whether it has expired, and, in the case of a transport ticket for example, whether it is valid off-peak, weekends, and so on.
- 19 The description therefore makes clear what is meant by “validly available for use” of a digital ticket. In my view, what this means is whether the ticket holder has the correct ticket for their journey: has the ticket been redeemed? Has the ticket expired? Is the ticket valid at peak times? Is the ticket valid at weekends? Is the ticket valid on this route? The description does not say anything about the problems of security or forgery in respect of digital tickets. Therefore, in my view it does not follow from the description that “validly available for use” has anything to do with improving security of digital tickets or reducing the potential for forgery.

Step 2: identify the actual (or alleged) contribution

- 20 Turning now to step 2. Jacob LJ outlined the considerations to be applied when identifying the contribution in paragraph 43 of *Aerotel/Macrossan* – the critical factors for the examiner to consider are emphasised:

*“The second step – identify the contribution - is said to be more problematical. How do you assess the contribution? Mr Birss submits the test is workable – it 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. The formulation involves looking at substance not form – which is surely what the legislator intended.”*

- 21 It seems there was some common ground between the examiner and the applicant over the assessment of the contribution, because it seems they both considered the invention to be about the security of digital tickets, especially in view of the lack of any discussion over the construction of the claims along the lines I have presented above. The difference of opinion occurred over whether the said increase in security was significant or not. The applicant’s view was that the animated watermark or animated image provided the advantage that the digital ticket would be harder to forge, and therefore would be more secure. The examiner disagreed that any significant increase in security would be provided, and argued that a skilled person would be able to copy an animated image or animated watermark, although the examiner seems to have conceded this would be a more involved process than a simple static image grab.
- 22 During the hearing, a large part of the case made was in explaining the difficulty of copying animated images using screen recording techniques, so as to demonstrate that a digital ticket having an animated image would have a significant security

advantage, the security advantage thus making a technical contribution. Dr Bottomley went into considerable detail of how this might be achieved on all the main types of smartphone available at the priority date of the invention, using a number of exhibits, including a witness statement from Mr Richard Kershaw, Chief Technology Officer of Corethree Ltd. I consider Dr Bottomley to be convincing on this point and I accept that copying an animated image through the methods described would be infeasible for an ordinary smartphone user showing that perhaps only a small population of people would be able to use these techniques. However, it would still be possible for such people to distribute unauthorised copies of digital tickets widely, which would detract somewhat from the security advantage. Furthermore, other methods of copying come to mind that were not discussed in the hearing: for instance, a crude method of using a camera of a smartphone to film the screen of another smartphone which is displaying a digital ticket having an animated image. This method could be apparent to many smartphone users and the presently claimed invention would do nothing to stop this.

23 I am therefore not convinced that an animated image alone would actually provide all the security benefits that Dr Bottomley alleges. The description briefly explains an embodiment in which the animated watermark or animated image comprises a colour and code word which rotate simultaneously on all devices. In this case, a simple recording of a smartphone screen as suggested above would not rotate in synchrony, so a more significant security benefit could plausibly be claimed in this case. However, these details are not present in claim 1 and no case was presented along these lines at the hearing. The present claims are broader and although non-excluded embodiments may be included within their scope, the invention must be assessed and construed as a whole to see whether it makes a contribution that lies in a non-excluded field.

24 In any case, in light of my assessment of step 1 above, I do not agree the invention is really about the security of digital tickets at all: it is in fact about the validity of digital tickets. The problem being addressed by the invention is clearly the matter of making it easier for people to check that a ticket is valid. Similarly, the advantages of the invention are in making it easier for people to check that a digital ticket is valid.

25 This is reinforced by looking at some of the meta-data of the digital ticket which control their properties, according to the description. The animated watermark is displayed only whilst the ticket is valid. The ticket has a "Ticket.Expiry" property which prevents the ticket from displaying the animated watermark, presumably once it has expired. "Ticket.TTL" is a property indicating how long a ticket should display its animated watermark for after first access. All of this reinforces my construction of "validly available for use" as explained earlier, and does not support any argument that ticket forgery is the problem being addressed by the invention.

26 Taking on board all the papers on file and the discussion at the hearing, it is my view that the contribution is:

*A system utilising a server and a plurality of mobile computing devices connected to the server via a network so that the server can deliver digital tickets to the mobile computing devices and the mobile computing devices will display the digital tickets on their respective screens and when displayed a digital ticket includes an animated watermark or animated image indicating that*

*the digital ticket is validly available for use. This has the advantage that it clearly identifies to a person checking the ticket whether the ticket is valid or not.*

- 27 This is similar to the contribution originally proposed by the examiner in the first examination report of 23 February 2017.
- 28 For completeness I should note that Dr Bottomley also referred to case law authorities in making the case that an improvement in security makes a technical contribution. However, since I do not consider an improvement in security to be a part of the contribution of the invention, I will not consider these in detail any further.

*Step 3: does it fall solely within the excluded matter / Step 4: is it actually technical in nature*

- 29 It is clear that the delivery of digital tickets to a mobile computing device is a process carried out by a computer program, but this fact by itself does not mean the invention is necessarily excluded as a computer program as such. What matters is the process the program will cause a computer to perform, because this is the substance of the invention, following *Astron Clinica Ltd & Ors v The Comptroller General of Patents, Designs and Trade Marks [2008] RPC 14*. The process in this case causes the system to deliver a digital ticket to a mobile computing device and display it on the screen of the device with an animated watermark or animated image that indicates that the digital ticket is validly available for use.

*Business method*

- 30 The business method exclusion was discussed in *Merrill Lynch's Application [1989] RPC 561*, in which Fox LJ concluded that an improved method of doing business is still a method of doing business:

*The fact that the method of doing business may be an improvement on previous methods of doing business does not seem to me to be material. The prohibition in section 1(2)(c) is generic; qualitative considerations do not enter into the matter. The section draws no distinction between the method by which the mode of doing business is achieved. If what is produced in the end is itself an item excluded from patentability by section 1(2), the matter can go no further.*

- 31 In *Halliburton Energy Services Inc's Applications [2012] RPC 129*, HHJ Birss QC at paragraph 35 noted that the use of a computer to implement a better business method did not confer patentability:

*The business method cases can be tricky to analyse by just asking whether the invention has a technical effect or makes a technical contribution. The reason is that computers are self evidently technical in nature. Thus when a business method is implemented on a computer, the patentee has a rich vein of arguments to deploy in seeking to contend that his invention gives rise to a technical effect or makes a technical contribution. For example the computer is said to be a faster, more efficient computerized book keeper than before and surely, says the patentee, that is a technical effect or technical advance. And so*

*it is, in a way, but the law has resolutely sought to hold the line at excluding such things from patents.*

- 32 The process of delivering a ticket to a customer and of subsequently checking the ticket for validity before admitting entry (to a venue, bus, train, etc.) is clearly a business method. The fact that the process is carried out using a network, a server, and mobile computing devices is therefore immaterial. The fact that the person checking the ticket must look at the device screen rather than, for example, a printed paper ticket, is immaterial, even if the animated watermark or animated image assists them by more readily indicating the validity of the ticket. Any such improvement in the process of checking the validity of the ticket is merely an improved business method, and so is excluded from patentability.

### Computer program

- 33 Turning to the question of whether the invention is a computer program as such, I will refer to the *AT&T* signposts.
- 34 With regard to the first signpost, and whether there is a technical effect outside the computer, Dr Bottomley asserted at the hearing that increased security of a digital ticket and increased difficulty in forging a ticket having an animated watermark or animated image causes a technical effect outside the computer. Since I have not been convinced that increased difficulty of forging a ticket is part of the contribution, I do not agree that any technical effect is caused in this way.
- 35 The second, third, and fourth signposts relate to the fundamental workings of the computer itself. The present invention, relating to a system for the delivery of digital tickets to mobile computing devices, has no impact upon the computer itself in the manner required to fulfil these signposts.
- 36 The fifth signpost asks whether a technical problem is being solved by the claimed invention. The problem of checking the validity of a ticket is not a technical problem but a business one, and so this signpost is not fulfilled.
- 37 Since I have not found the contribution to meet any of the signposts, I find that the invention is excluded as a computer program as such.

### Presentation of information

- 38 The examiner has also objected that the invention relates solely to the presentation of information. In the pre-hearing report, the examiner referred to page 30 of *Autonomy Corp Ltd v Comptroller General of Patents, Trade Marks & Designs [2008] EWHC 146(Pat)*, quoting:

*The “presentation of information” includes both the provision of information and also methods of expressing the information*

- 39 The applicant’s case is that, once again, the increased security of a digital ticket and increased difficulty in forging a ticket having an animated watermark or animated image makes a technical contribution and cannot be said to relate merely to the presentation of information. The argument is similar to the one above with regard to the first signpost. Once again, I consider that checking the validity of a ticket is not a

technical issue but a business one. Since the delivery of the digital ticket to the mobile computing device and the displaying of the ticket on the screen with an animated watermark or an animated image amounts to the presentation of information, I am of the view that the invention is excluded also as a presentation of information as such.

- 40 I conclude that the invention claimed in the main request of GB 1701773.2 is excluded from patentability under sections 1(2)(c) and 1(2)(d) as a business method as such, a computer program as such, and a presentation of information as such.

### **Application GB 1403069.6**

- 41 Turning now to the parent application GB 1403069.6, this relates to a similar invention to GB 1701773.2.

- 42 Claim 1 of the main request, filed on 2 February 2018, reads as follows:

*1. A system including a server and networked connected smartphone computing devices, the server including a platform for the delivery of content and services to the networked connected smartphone computing devices, in which the platform stores content as a database on the server by arranging nodes in a hierarchical format that is capable of semantically representing content, with each node including a unique ID and in which the hierarchical format acts as an abstraction layer that insulates a content or service creator and the connected smartphone computing devices from being restricted (i) to any specific, predefined data format for the content or (ii) to any specific, predefined transport media for exchanging data over the network, in which the platform provides content including digital tickets to the connected smartphone computing devices for them to display, the digital tickets including an animated watermark or an animated image that indicates that a digital ticket is validly available for use.*

- 43 This claim includes more detail of the server and the structure of the database and so it has a narrower scope. Overall, however, the claim is similar to the main request of GB 1701773.2, and at the hearing, Dr Bottomley argued this claim was non-excluded for the same reasons that GB 1701773.2 was non-excluded.

- 44 The same arguments apply to this claim as to the claim of GB 1701773.2. The issues around construction and the contribution are essentially the same.

- 45 It follows therefore that I find the invention claimed in the main request of GB 1403069.6 to be excluded from patentability under sections 1(2)(c) and 1(2)(d) as a business method as such, a computer program as such, and a presentation of information as such.

### **First and second auxiliary requests**

- 46 Auxiliary requests were filed for each application. The auxiliary requests serve to narrow the scope of the claims and are reproduced below with the changes from the previous version highlighted:

47 In GB 1701773.2, claim 1 of the first auxiliary request reads as follows (changes from the main request are highlighted):

1. System including a server and multiple mobile smartphone computing devices, each mobile smartphone computing device including a respective screen, the multiple mobile smartphone computing devices each connectable to the server via a network, the server including a database storing content, the content deliverable to the mobile smartphone computing devices when in connection with the server via the network, the content including digital tickets, wherein each mobile smartphone computing device is configured to receive and to display a digital ticket on the respective screen, the digital ticket when displayed on the respective screen including an animated watermark or an animated image that indicates that the digital ticket is validly available for use.

48 In GB 1701773.2, claim 1 of the second auxiliary request reads as follows (changes from the first auxiliary request are highlighted):

System including a server and multiple mobile smartphone computing devices, each mobile smartphone computing device including a respective screen, the multiple mobile smartphone computing devices each connectable to the server via a network, the server including a database storing content, the content deliverable to the mobile smartphone computing devices when in connection with the server via the network, the content including digital tickets, wherein each mobile smartphone computing device includes a respective digital ticketing application which is configured to request, to receive and to display a digital ticket on the respective screen, the digital ticket when displayed on the respective screen including an animated watermark or an animated image that indicates that the digital ticket is validly available for use.

49 In GB 1403069.6, claim 1 of the first auxiliary request reads as follows (changes from the main request are highlighted):

A system including a server and networked connected smartphone computing devices, each networked connected smartphone computing device including a respective digital ticketing application, the server including a platform for the delivery of content and services to the respective digital ticketing applications on the networked connected smartphone computing devices, in which the platform stores content as a database on the server by arranging nodes in a hierarchical format that is capable of semantically representing content, with each node including a unique ID and in which the hierarchical format acts as an abstraction layer that insulates a content or service creator and the connected smartphone computing devices from being restricted (i) to any specific, predefined data format for the content or (ii) to any specific, predefined transport media for exchanging data over the network, in which the platform provides content including digital tickets in response to requests from the respective digital ticketing applications on the connected smartphone computing devices for them respective digital ticketing applications to display, the digital tickets including an animated watermark or an animated image that indicates that a digital ticket is validly available for use.

- 50 The amendments limit the claims either by specifying that the mobile computing device is a smartphone, or by specifying that the smartphone includes a digital ticketing application which requests and displays the ticket on the device screen. Whilst these amendments serve to limit the scope of the claims, I do not consider the contribution as I have determined it to be altered in a material way. The same arguments/analysis in my view apply to the auxiliary requests as to the main requests. Indeed, at the hearing, Dr Bottomley argued that the auxiliary requests were non-excluded using the same reasoning as for the main requests.
- 51 I therefore consider that the claims of the auxiliary requests to be excluded from patentability for the same reasons as above.

### **Saving amendments**

- 52 In light of the discussion at the hearing where the possibility of a saving amendment was explored, I have carefully considered the specification and I cannot find one.

### **Conclusion**

- 53 I conclude that the inventions claimed in applications GB 1403069.6 and GB 1701773.2 are excluded from patentability under sections 1(2)(c) and 1(2)(d) as a business method as such, a computer program as such, and a presentation of information as such.
- 54 I therefore refuse both applications GB 1403069.6 and GB 1701773.2 under section 18(3).

### **Appeal**

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

**C L DAVIES**

Deputy Director, acting for the Comptroller