Intellectual Property Office

BL O/0262/24

27 March 2024

PATENTS ACT 1977

APPLICANT	IGT GLOBAL SOLUTIONS CORPORATION
ISSUE	Whether application GB2110697.6 complies with Section 1(2) of the Patents Act 1977
HEARING OFFICER	Stephen Brown

DECISION

Background

1 The application was filed on 26 July 2021 claiming the priority date of 31 July 2020 from US application number 63059337 and 13 July 2021 from US application number 17374293. It was published by the UK Office on 16 March 2022 as GB2598834 A. The unextended compliance period ends on 31 January 2025.

2 The examiner issued a Search Report under Section 17(5)(b) including an Abbreviated Examination Report under Section 18(3) on 11 January 2022. The examination report raised objections to Clarity due to the number of overlapping independent claims and Excluded Matter as a computer program and/or a method of doing business under Section 1(2)(c). He noted at that time that the search had not been performed as the search would serve no useful purpose due to the pending objections. Additionally, other substantive matters, such as novelty and inventiveness, were also deferred.

3 The applicant responded to the examination report with amendments, however the examiner found the amendments insufficient to address the objections. The application then underwent multiple rounds of amendment and examination, ultimately the clarity objection was addressed. However, the excluded matter objection is still pending. In his final examination report of 1 June 2023, the examiner offered the applicant the opportunity to request a hearing, which the applicant did with their agent's letter of 27 September 2023 along with filing further amendments. The examiner issued his pre-hearing report on 17 November 2023 and the agent filed skeleton arguments on 19 December 2023.

4 The Hearing was held on 11 January 2024, the applicant was represented by James Main from J A Kemp. I was assisted by Thomas Britland.

The Application

5 The claimed invention relates to a system for the generation of both virtual and physical instant lottery tickets, where the virtual tickets have increased security. The ticket generation system generates elements common to both the virtual and physical tickets. Namely: the layout of the tickets, the graphical design, ID numbers and most importantly, the variable indicia (numbers, letters and/or symbols) which denote whether a ticket wins or loses.

6 Some of the generated tickets then go to a physical printer while others go to, effectively, a 'virtual printer'. In a physical ticket, the variable indicia are hidden behind a "scratch-off coating" ("SOC") which means that a player who purchases a ticket from an outlet will know immediately that the ticket has been tampered with if the coating is incomplete. It also allows them to quickly know if they have won as the SOC can be easily removed after purchase.

7 For virtual tickets, there is no surface to apply an SOC to, so it is impossible for a player to know if the ticket they purchase has been tampered with (and thereby already claimed). To overcome this, the present invention uses a series of interconnected sub-systems that seek to make it impossible to track tickets by ID number and also, to record externally from the ticket-hosted device when a request to check a ticket is made.

8 The claimed invention thus provides a system which can create both virtual and physical instant lottery tickets, where the virtual tickets have multiple layers of encryption, each of which requires respective, physically separated, sub-systems to decrypt.

The Claims

9 There is a single independent claim, claim 1. It reads as follows:

> *A lottery ticket system for providing an instant lottery game including a physical instant lottery ticket and a virtual instant lottery ticket, said lottery ticket system comprising:*
>
> *a system for creating, printing, and coating the physical lottery ticket based on a set of inputs;*
>
> *a virtual instant ticket factory system comprising a first processor and a first memory device operable to: create a digital object representing the virtual instant lottery ticket for the instant lottery game based on a same set of inputs as for the creation of the physical instant lottery ticket;*
>
> *a virtual coating key factory system separate and independent from the virtual instant ticket factory system and comprising a second processor and a second memory device operable to: provide an encryption key for a virtual scratch-off-coating for the digital object, responsive to an authorized request, remove the virtual scratch-off-coating from the digital object, wherein the virtual coating key factory system is configured to remove the virtual scratch-*

off-coating from the digital object only one time, wherein the virtual coating key factory system is configured such that once removal of the virtual scratch-off-coating from the digital object begins, removal of the virtual scratch-off-coating from the digital object is completed;

a lottery owner system separate and independent from the virtual instant ticket factory system and the virtual coating key factory system and comprising a third processor and a third memory device operable to: apply an envelope to the digital object before issuing the virtual instant lottery ticket represented by the digital object to a requesting lottery player device, and issue the digital object to the requesting lottery player device; and

a notary system separate and independent from the virtual instant ticket factory system, the virtual coating key factory system and the lottery owner system and comprising a fourth processor and a fourth memory device operable to: track and apply digital signatures to the digital object,

wherein the lottery owner system is further operable to: interface with the lottery player device for each of a plurality of different requests relating to the virtual instant lottery ticket, with the notary system, for each request relating to the virtual instant lottery ticket, send the digital object to the notary system to enable the notary system to track the request and to apply a digital signature to the digital object, receive a scratch off request for the virtual instant lottery ticket from the lottery player device, responsive to the scratch off request, remove the envelope from the digital object representing the virtual instant lottery ticket, and send the digital object to the notary system to enable the notary system to track the scratch off request and to apply a digital signature to the digital object,

wherein the notary system is further operable to: issue a scratching transaction containing an identifier of the virtual instant lottery ticket and an identifier of the lottery player device, record the scratching transaction in an append-only register before the virtual coating key factory system removes the virtual scratch-off-coating from the digital object, apply the digital signature to the digital object, and send to the lottery owner system the digitally signed digital ticket,

wherein the lottery owner system is further operable to: send the digital object to the virtual coating key factory system to enable the virtual coating key factory system to remove the virtual scratch-off-coating from the digital object, receive a transfer request for a virtual instant lottery ticket, check presence of a scratching transaction for the virtual instant lottery ticket for which the transfer request is received in the append-only register, and when the scratching transaction is present, stop further transfer of the virtual instant lottery ticket for which the transfer request is received to another lottery player device, and when the scratching transaction is not present, facilitate a transfer of the virtual instant lottery ticket for which the transfer request is received to another lottery player device,

wherein each of the virtual instant ticket factory system, the virtual coating key factory system, the lottery owner system and the notary system are in different physical locations,

wherein the virtual instant ticket factory system and the virtual coating key factory system are configured to communicate with each other, the virtual instant ticket factory system and the lottery owner system are configured to communicate with each other, and the lottery owner system and the notary system are configured to communicate with each other.

10 In addition, there are 9 dependent claims. I have considered these and don't believe they would add anything which would have a material effect on whether or not the invention of claim 1 may, or may not, be excluded. Therefore, I will proceed based purely on the invention as set out in claim 1.

The law

11 Section 1(2) of the Patents Act reads:

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

…

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

…

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.

12 The assessment of patentability under section 1(2) is governed by the judgment of the Court of Appeal in *Aerotel*[1], as further interpreted by the Court of Appeal in *Symbian*[2]. In *Aerotel* the court reviewed the case law on the interpretation of section 1(2) and set out a four-step test to decide whether a claimed invention is patentable:

(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.

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[1] *Aerotel Ltd v Telco Holdings Ltd & Ors Rev 1* [2007] RPC 7
[2] *Symbian Ltd v Comptroller General of Patents* [2009] RPC 1

13 The operation of the test is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is essentially a matter of determining what it is the inventor has really added to human knowledge, and involves looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution.

14 The Court of Appeal in *Symbian* made it clear that the four-step test in *Aerotel* was not intended to be a new departure in domestic law; it was confirmed that the test is consistent with the previous requirement set out in case law that the invention must provide a "technical contribution". Paragraph 46 of *Aerotel* states that applying the fourth step of the test may not be necessary because the third step should have covered the question of whether the contribution is technical in nature. It was further confirmed in *Symbian* that the question of whether the invention makes a technical contribution can take place at step 3 or 4.

15 Lewison J (as he then was) in *AT&T/CVON*[3] set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. In *HTC/Apple*[4] the signposts were reformulated slightly in light of the decision in *Gemstar*[5]. 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.*

16 At the hearing, Mr Main agreed that both the *Aerotel* assessment and the use of the AT&T signposts were the correct approach for determining patentability.

17 Both the examiner in their examination reports and Mr Main in his letters, also relied on further case law while making their respective arguments, I will discuss these as they become relevant below.

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[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] *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

Application of the *Aerotel* test

Step (1): Properly construe the claim

18 The claims being considered here are those filed on 27 September 2023, as set out above. I don't believe there to be any particular difficulty in construing the claim. Taking into account the above meanings as considered in light of the description, the claims may simply be construed as read.

19 That being said, I think it is prudent to take a moment to consider the actual structure of the: the virtual instant ticket factory system; the virtual coating key factory system; the lottery owner system; and the notary system.

20 In all cases, these are merely standard pieces of computing hardware running specialist software. This is only explicitly stated with regards to the notary system, where paragraph [0064] of the description states: "*In this example embodiment, the notary system 500 includes an append-only database in charge of tracking the "property" of each virtual instant lottery ticket*". However, at the hearing, Mr Main did confirm this to be the case for all of the systems included in the claim.

21 Mr Main also clarified that where the claim states that the virtual instant lottery ticket is based on the same set of inputs as the physical instant lottery ticket, it merely means it is based on the same configuration of inputs, e.g. the graphic design and the format of the ID numbers and the variable 'winning' indicia. It did not mean that there were *exactly* identical tickets in the real and virtual realms.

22 I also note that throughout the application and this decision, the acronym "SOC" stands for "Scratch Off Coating" and is used in regard to both the coating applied to the physical instant lottery tickets and the encryption applied to the virtual instant lottery tickets to provide a similar functionality. As there is little actual discussion of the physical instant lottery tickets, I feel this is not likely to raise any confusion.

Step (2): Identify the actual or alleged contribution

23 The examiner has dedicated significant time in providing the basis for what they consider to be the actual contribution. I do not seek to repeat their working here and, for the most part, much of what is discussed in points 12 to 22 of their pre-hearing report was not disputed by Mr Main in either his skeleton arguments or at the hearing. The only points of contention appear to be that Mr Main argued that greater emphasis should be given to the overall lottery ticket system being formed of "a new combination of four physically separate systems", especially for the hardware that employs the notary system. I believe that these are valid points, so I will adopt a lightly modified version of the examiners framing of the contribution (**bold** added to emphasise my modifications):

> *A lottery ticket system comprising a system for creating, printing, and coating a physical lottery ticket based on a set of inputs and a virtual, computer-implemented, lottery system which uses the same inputs as the physical lottery ticket system and comprises the claimed functions of a virtual instant*

ticket factory system, a virtual coating key factory system, a lottery owner system and a notary system, ***which are separate and in different physical locations,*** *wherein known double encryption security and digital signature techniques and an additional pre-transfer check for a previous scratching request for the ticket* ***at the notary system*** *are used to improve ticket security and prevent fraud regarding the virtual lottery ticket.*

Step (3): Does the actual contribution fall solely within the excluded subject matter?

24 The examiner argued that the invention was excluded as a computer program and/or a method of doing business. It seems to me that these two are inextricably linked in this case, where if the invention has an allowable technical effect, it is more than either a computer program or a business method. However, if it does not, it likely falls foul of both exclusions.

25 Mr Main argued that the different physical locations of the sub-systems was the key part of the contribution. It was this separation, especially when coupled with the use of the notary system, that gave the system its enhanced security by making it almost impossible for a single 'bad actor' to subvert the lottery ticket system. Furthermore, he argued, this physical feature of the invention was, in effect, a new arrangement of hardware, analogous to that in *Aerotel*.

26 Mr Main pointed me at paragraph 54 of *Aerotel*, where Jacob LJ had considered the invention to be more than a business method "*implemented on conventional computers*" because the system included a "*special exchange*". Mr Main argued that the notary system of the current application was exactly analogous with the "special exchange" of Aerotel. As such, regardless of the fact that the systems of the present invention are all implemented on standard computers, they work in a *new manner* and thus the overall system should not be excluded from patentability.

27 Mr Main then commented on the case of *Wavecrest*[6] which later found that the original invention of *Aerotel* was excluded. In his skeleton arguments, he asserted that the reason the invention was found to be excluded in *Wavecrest* was that it was ultimately shown that the hardware arrangement was known except for the implementation of the alternative method of payment. Mr Main argued that this was different from the present invention as the prior art cited by the examiner only discussed the act of double encryption, not the act of permanently recording the "scratching off request" prior to allowing the envelope and SOC to be removed.

28 Unfortunately, I disagree with Mr Main's interpretation here. I believe that *Wavecrest* teaches that the "special exchange" was a commercially available exchange combined with a standard computer programmed in a certain manner. The result of this determination was that the "special exchange" simply became synonymous with a standard computer and was removed from the actual contribution. What was 'special' was what the computer was *programmed* to do.

29 I believe the same issue applies here. The notary system is not a unique form of hardware designed to perform specific tasks, it is a standard computer programmed

[6] *Aerotel Ltd v Wavecrest Group Enterprises Ltd & Ors* [2008] EWHC 1180 (Pat)

to perform particular processes. As the notary and, by extension, the instant ticket factory, the virtual coating key factory and the lottery owner system are all standard computers programmed to perform set tasks then they are, contrary to Mr Main's assertions, merely a conventional arrangement of networked computers as in *Renaissance*[7]. I can see no 'new arrangement of hardware'.

30 I conclude that the individual systems of the current application are simply discrete nodes in a network and how they interact is set out in the programming of the lottery ticket system. As for the stipulation that they must be in different physical locations, I note that it is well known for network nodes to be in a variety of locations. In our current internet age, it is immaterial where discrete nodes are located, whether they are physically in the same room, same building or even the same continent has little bearing on the fact that they are part of the same network.

31 Given that I have decided that the claimed invention is a collection of computer programs running across a network on known hardware, I will now consider the AT&T signposts.

32 At hearing Mr Main agreed that the claimed invention did not work on the level of computer architecture, nor did it make the computer better or make it operate in a new way. Thus, I do not need to consider signposts (ii), (iii) or (iv).

33 Rather, Mr Main argued that current invention meets signposts (i) & (v). Specifically, he argued that the increased security provided by a physically discrete notary system was a technical effect which occurs outside of the computer, and also that it is the solution to a technical problem.

34 I will start by saying that the requirement that the lottery ticket system provides physical tickets in addition to virtual tickets from the same set of inputs is not a novel technical effect outside of the computer. What the applicants have added to human knowledge lies in the processes involving the virtual tickets. The physical tickets themselves are utterly conventional and they do not interact with the virtual processes in any way.

35 At the hearing, Mr Main argued that the use of the multiple levels of encryption and the notary system to record tickets which have had scratch off requests submitted and to lock those tickets from further transfer resulted in increased security. He asserted that EPO Board of Appeal decision T0844/09 set out that (using his skeleton wording) "the improvement in transaction security was considered to be a technical effect".

36 However, I do not fully agree with this line of reasoning. Firstly, as Mr Main conceded, EPO Board of Appeal decisions are not binding on me, they are merely persuasive. Secondly, as the examiner pointed out in their pre-hearing report, T0844/09 does not say that improved security always results in a technical effect, it in fact says almost the opposite:

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[7] *Renaissance Technologies Plc v Comptroller General of Patents, Designs and Trade Marks* [2021] EWHC 2020 (Pat)

"*Although verifying a user's authorization to use a financial account may in certain cases involve an administrative procedure lacking technical character, this is not considered to be the case for the subject matter of claim 1.*"

37 I read this to mean that increasing security may sometimes be merely administrative but that the EPO Board of Appeal did not find so in this specific case.

38 Thirdly, T0844/09 related to purely financial transactions. It set out that a third-party financial application (i.e. Paypal, where Paypal Inc. was the owner of the patent application) would verify a user was permitted to use a particular bank account by applying (relatively small) transactions to that account and then quiz the user on the details of the transactions. This meant that the user must have access to the bank account in question (whether by postal statement, telephone banking, online banking or by proof of ID at a bank branch) in order to see the transactions and prove they owned the account. The logic of the EPO Board of Appeal was that:

"*Neither the business professional nor the administrative professional would, in the board's judgement, be qualified and indeed able to devise any of these ideas as they lie outside their areas of competence.*"

39 I don't believe in using the terms "business professional" and "administrative professional", the Board considered purely "financial" actions acceptable or that a "financial professional" would necessarily provide a technical effect. Instead, I believe, that the Board of Appeal ignored the business aspect altogether, and looked at the application as a system of verifying a user by generating a password and sending that password to the account which the user is attempting to use. The fact that the "password" was in the form of financial transactions to a bank account instead of a verification email, didn't really make a difference. It was the specific verification steps, that the Board of Appeal ultimately found to be allowable as they were not shown to be known or obvious in light of the prior art. The problem/solution approach used by the EPO did not set the problem to be the nebulous term "improved security". Rather, the decision sets out that the problem "*is to provide transaction authenticators to the user in an alternative manner*".

40 In contrast, in the current invention, the security enhancement comes from encrypting the whole ticket in an envelope (double encrypting), recording at the notary when the ticket is to be "scratched" and only then removing the envelope and SOC encryptions. I cannot see any parallels between this case and T0844/09. I thus find Mr Main's arguments based on T0844/09 to be unpersuasive.

41 I am also not convinced that the problem to be solved is "transaction security" in this case. When you consider the whole invention carefully, it is not the transaction with the users that is improved, there is no improvement to the security of the transaction itself or to the user's data. The improvement is to the security of the virtual instant lottery system as a whole. The application discusses how the invention is related to stopping fraud from those having partial access to the lottery ticket system. The use of the SOC encryption alone is considered to be insufficient to stop this fraud, due to the way that an insider would necessarily be able to glean some information in knowing the form of the encryption. The addition of the envelope adds double encryption, which is known, and makes this much harder as merely being privy to the first encryption does not make it likely you know the second. However, as discussed

in paragraph [0072] a wholesaler would theoretically be able to remove the envelope and, together with the insider, identify the winning tickets by the form of the encryption used. The notary is therefore added to make a recording of when the envelope is removed. None of this has any bearing on the security of the transaction itself. It merely stops fraud by ensuring that spoilt tickets are locked from further transfer by requiring the notary system to record all opened envelopes. It doesn't, for example, provide a system which absolutely stops wholesalers from even attempting to open the tickets prior to onward sale, it merely records whether they have.

42 So is the provision of the notary system technical? I cannot say it is. The transaction security and the encryption themselves are not improved, just as that merely sending less data does not improve the speed of a network. All that is improved is that in this one circumstance, where fraud could be committed, an additional administrative step is added to ensure that only unspoilt tickets can be transferred to end users. This appears to me to be merely an additional administrative step, i.e. a business solution, enacted in software, and not an improvement in data security in a technical sense.

43 I will now briefly discuss the other case law raised in Mr Main's skeleton arguments. Contrary to his comments, I find the claimed invention is very similar to that of *Oneida*[8], where the advantages of the invention are merely in the new method of doing business. As discussed above, there is no new combination of hardware in the claimed invention and no more has been invented beyond a method of doing business (*Lenovo*[9]). The EPO Board of Appeal decision T0208/84 is directed specifically to image processing. That decision doesn't set out a broad definition of allowable"real world" activities, it merely states that image processing is within it.

44 In conclusion, I find that the problem to be solved is not a technical one but rather one tied to business operations and that it is not solved but rather circumvented by additional administrative steps. As the problem is not technical, the contribution does not have a *technical* effect outside of the computer.

45 Thus, none of the *AT&T* signposts suggest that the contribution provides the required technical effect and I find that it is no more than a program for a computer and a method of doing business as such.

Step (4): Is the contribution technical in nature?

46 Since I have decided that the contribution does not have a technical effect beyond that of a program running on a computer, it also fails this step of the test**.** I thus decide that the invention, as defined in the independent claim, is excluded under section 1(2).

[8] *Oneida Indian Nation* [2007] EWHC 954 (Pat)
[9] *Lenovo (Singapore) PTE Ltd v Comptroller General of Patents* [2020] EWHC 1706 (Pat)

Conclusion

47 I decide that the invention as set out in the independent claim is excluded under Section 1(2) as a program for a computer and a method of doing business, as such.

48 Having reviewed the application, I do not consider that any saving amendments are possible. I therefore refuse the application under Section 18(3).

Appeal

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

Dr Stephen Brown

Deputy Director, acting for the Comptroller