



BL O/054/07

22 February 2007

## PATENTS ACT 1977

APPLICANT	IGT
ISSUE	Whether patent application number GB 0427512.9 complies with sections 1(2) and 76(2)
HEARING OFFICER	R C Kennell

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## DECISION

### Introduction

- 1 This application relates to trajectory-based games of chance for implementation on a video gaming machine. It was filed as an international application on 5 June 2003, claiming a priority date of 27 June 2002 from an earlier US application, and was published under serial no. WO 2004/002591 on 8 January 2004. It has been reprinted under serial no. GB 2405107 A by the Patent Office.
- 2 Despite amendment of the claims during several rounds of substantive examination, the applicant has been unable to persuade the examiner that this is a patentable invention within the meaning of section 1(2) of the Act. This matter therefore came before me at a hearing on 25 January 2007. Richard Davis, instructed by patent attorneys HLBBshaw, appeared for the applicant. The examiner, Mark Sexton, assisted via videolink.
- 3 A divisional application has been filed, but this was not before me at the hearing and I have not considered it. It appeared that the fate of the divisional was likely to depend on my decision on the parent application. In addition to the patentability issue, the question also arose for my consideration as to whether a proposed claim added matter in contravention of section 76(2).

### The invention and the prior art

- 4 Following a re-evaluation of the invention on taking over the prosecution of the application from the original patent attorneys, HLBBshaw filed a revised main claim on 15 September 2006. An amended version of this was put forward at the hearing, and reads as follows:

“A gaming machine comprising:

an input mechanism for receiving a wager on a trajectory-based game of chance played on the gaming machine;

a master gaming controller coupled to the input mechanism for controlling the trajectory of a 3-D game object within a 3-D gaming environment in the trajectory-based game of chance, the 3-D gaming environment varying as a function of time; and for rendering a sequence of two-dimensional images from the 3-D gaming environment the sequence of two-dimensional images comprises [*sic*] one or more two-dimensional images of the 3-D game along its trajectory;

a memory storage device storing a data structure including probability distributions of initial trajectory states for the 3-D game object, each initial trajectory state having an associated probable game outcome; and

a video display for displaying a sequence of two-dimensional images as part of a game outcome presentation for the trajectory-based game of chance;

wherein, the master game controller is adapted:

randomly to select a desired game outcome;

using the probability distributions to select an initial trajectory state of the 3-D game object in the 3-D gaming environment associated with the selected desired game outcome;

generating the trajectory of the 3-D game object in the game environment using the initial trajectory state the generated trajectory including a final state of the game object; and

determining the actual game outcome on the basis of the final state of the game object.”

- 5 The invention relates to the computer implementation of a game of chance of the pinball type in three dimensions. Mr Davis explained in his skeleton argument that prior art computerised gaming machines have only been capable of implementing a two-dimensional environment; Canadian specification CA 2343870 A1, published on 19 October 2001 in the name of International Game Technology and describing a computerised pachinko game, was an example of such a machine. It is not disputed that this is the closest prior art.
- 6 Mr Davis further explained that 2-D machines operated on the basis of a “trajectory table” which stored sets of data each defining a trajectory of a game object and a corresponding game outcome; the machine randomly determined an outcome and displayed a presentation using the corresponding trajectory data. Thus once the game outcome was determined so was the presentation. However, a 3-D game could not be implemented in this way because there would not be enough memory to store the much larger trajectory data set that would be required. Mr Davis said that the invention as now claimed reduced the data storage requirement by storing sets of initial trajectory states (rather than the entire trajectory data) together with a probable game outcome

calculated from the probability distribution of all outcomes possible from the initial trajectory state.

- 7 Mr Davis accepted that the description needed to be navigated with a little care in order to identify the subject matter of the claim. I will deal with this in more detail in regard to the added matter objection.

### The law and its interpretation

- 8 On patentability, the relevant parts of section 1(2) read (emphasis added):

“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.**”

- 9 On 27 October 2006, the Court of Appeal delivered its judgment in the matters of *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan’s Application* [2006] EWCA Civ 1371 (hereinafter “*Aerotel/Macrossan*”). In this case the court reviewed the case law on the interpretation of section 1(2) and approved a new four-step test for the assessment of patentability, namely:

- 1) Properly construe the claim
- 2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution)
- 3) Ask whether it falls solely within the excluded matter
- 4) Check whether the actual or alleged contribution is actually technical in nature.

- 10 In a notice published on 2 November 2006<sup>1</sup>, the Patent Office stated that the new test would be applied by examiners with immediate effect. As appears from paragraphs 17 – 18, it is not expected that this will fundamentally change the boundary between what is and is not patentable in the UK, except possibly for the odd borderline case. Although the approach differs from that currently adopted by the European Patent Office in *Hitachi* (T 0258/03), it is expected that the result will be the same in nearly every case.

- 11 Mr Davis thought that the proposed claim would be patentable under the *Hitachi* approach as providing a technical solution to a technical problem, and that I should therefore be slow to reach a different conclusion. Of course, by

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<sup>1</sup> <http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter.htm>

virtue of section 130(7) of the Act, section 1(2) is so framed as to have, as nearly as practicable, the same effects as the corresponding provisions of the European Patent Convention. This suggests that I should take note of the decisions of the Boards of Appeal of the EPO under Article 52 of the EPC. However, such decisions do not bind me, and their persuasive effect must now be limited in view of the contradictions in the Boards' decisions highlighted by the Court of Appeal in *Aerotel/Macrossan* and its express refusal to follow EPO practice. I am bound by the Court's decision and so my consideration of the claim must be based on the *Aerotel/Macrossan* test, irrespective of whether or not it would produce the same result as the *Hitachi* approach.

- 12 As regards added matter, section 76(2) prohibits an amendment of an application which "results in the application disclosing matter extending beyond that disclosed in the application as filed".

## **Arguments and analysis**

### Added matter

- 13 It will be convenient to deal first with this point. Simplifying the argument somewhat, the examiner believed that the proposed claim combined features from distinct embodiments in a way which would not have been apparent to a skilled man.
- 14 The relevant matter in the description is now only a very small part of a long specification. The two embodiments in question are those of Figures 4 and 5, which are embodiments of first and second methods summarized in the specification at page 4 lines 14 – 25 and page 5 line 26 – page 6 line 10. The first method determines a game outcome and then selects and generates a trajectory which corresponds to that outcome. The second method generates a trajectory but does not determine the game outcome until the final state of the trajectory is reached. As explained at page 53 line 3 onwards in relation to Figure 5, this caters for the situation where the gaming environment changes as a function of time and it may not therefore be advantageous to develop a trajectory table for each state of the environment. It is stated at lines 5 -16:
- "... the gaming environment may be designed and initial states for game objects in the gaming environment may be selected such that on average over time a set of game outcomes for a trajectory-based game of chance with a certain set of probability distributions is achieved. ... The average probability distribution for the set of game outcomes may be verified by performing a Monte Carlo simulation where the trajectories of a large number of game objects with different initial states and at different environment states are analyzed. ..."
- 15 Another aspect of the invention, relating to the generation of a pay-table, is summarized at page 8 lines 5 – 16. A game outcome is assigned to the final trajectory state of each game object and a pay-table is generated which relates each outcome to a probability of that game occurring: the award for the game may then be proportional to that probability. Such a method is described at

page 48 line 23 – page 49 line 29 in relation to Figure 3, and it is stated at page 49 lines 21 – 22 that a game outcome defined in the payable may be selected at random.

- 16 As Mr Davis admitted the format of the specification is not especially helpful to his cause. Indeed the summary of the invention extends over 11½ pages and contains 27 paragraphs summarizing various aspects, embodiments and methods of the invention, with no very clear unifying theme. The claims do not correspond closely to this summary, although all refer to rendering the 3-D environment as a sequence of 2-D images. The supposed advantage of reducing the data storage requirement for a 3-D environment by storing initial trajectory states is nowhere mentioned, even in the description of the two methods mentioned above.
- 17 Nevertheless, noting that the statement at page 6 lines 11 – 13 referred to the “following embodiments” as being usable with either the first or second method, Mr Davis felt that the skilled man would regard the references to the random selection of a game outcome at pages 48 – 49 as applicable, not just to the situation where a game outcome was known (the first method) but also where the game outcome could not be known (the second method). He thought that the specification described the first method in detail, and that the second method was described only in relation to its differences from the first.
- 18 I cannot agree. It seems to me that the second method is not simply a “carry-over” from the first method by substituting random selection of a probable game outcome for a known game outcome, and that the two methods work in quite different ways. Bearing in mind that no reference is made to the reduced data storage requirement, it seems to me that the claim is putting forward something which was not originally contemplated as an inventive concept. Further, the references in the description to the use of probabilities do not say anything about starting from a “data structure including probability distributions of initial trajectory states” as the claim before me (although not the version filed on 15 September 2006) requires. Rather they suggest the analysis of initial states to generate a probability distribution of game outcomes. I would agree with the examiner’s view that there is no association between probability distributions and initial trajectory states which drives the methodology of the invention.
- 19 Even if what is now claimed is something which the skilled man would find obvious to do from the information in the specification, I do not think this is matter which was unambiguously disclosed in the specification either explicitly or implicitly. In my view therefore the proposed claim does indeed disclose matter extending beyond that in the application as filed. However, in case I am wrong on that, I will go on to consider the patentability issue.

#### Patentability

- 20 Applying the *Aerotel/Macrossan* test, the examiner believed the invention to be excluded under section 1(2) because it was in substance a scheme, rule or method of playing a game which was implemented by a computer program.

Mr Davis however believed that the invention was patentable because it solved a technical problem (the provision of a method to reduce data storage requirements) by means of a technically different underlying methodology, rather than by changing the rules or scheme of the game or by mere computerization. As he saw it there was a technical improvement to a computerised implementation of a game.

- 21 The application of the first and second steps of *Aerotel/Macrossan* is not in issue. There is no dispute as to the construction of the claim. As to the contribution made by the invention, I accept Mr Davis' point that this is not just a substitute for the inventive step and that, as appears from paragraph 43 of *Aerotel/Macrossan* the question is the rather broader one of what the inventor has really added to human knowledge. On this basis, both Mr Davis and the examiner agree, and I accept, that the contribution lies in a novel data structure including a probability distribution from which a large number of trajectories can be produced from a small stored data set.
- 22 The dispute lies in the third step and the extent to which the alleged technicality of the contribution was relevant. The starting point of Mr Davis' argument was that the invention was not about changing the method, rules or scheme for playing a game or a game or about its mere computerization, but was about how the game was implemented. It therefore related to a technically different underlying methodology and therefore included, as Mr Davis put it "the additional technical effect necessary for patentability".
- 23 In support of his argument, Mr Davis suggested that although *Aerotel/Macrossan* put forward a new approach it did not lay down a new test. Thus the Court was bound by its earlier case law including *Merrill Lynch's Application* [1989] RPC 561 which accepted the "technical contribution" test from the EPO Board's decision in *Vicom* (T 208/94), and so effectively the law remained as it was in *Vicom*.
- 24 Further, in relation particularly to the exclusion of computer programs, Mr Davis commended Pumfrey J's decision in *Shopalotto.com's Application* [2005] EWHC 2416 (Pat), [2006] RPC 7 (which he considered to have been approved in *Aerotel/Macrossan*) identifying the question as being whether there was a relevant technical effect, ie a technical effect over and above the mere loading of a program into a computer. Mr Davis thought that *Shopalotto* represented the best interpretation of the technical contribution that was necessary for patentability.
- 25 I do not think that *Aerotel/Macrossan* can be interpreted in this way. As the Court makes clear at paragraphs 41 and 45 – 47 the test is a re-formulation of that in *Merrill Lynch* which emphasised that inventive excluded matter could not count as a technical contribution. The fourth step of checking whether the contribution is technical, although necessary if *Merrill Lynch* is to be followed, may not be necessary because the third step – asking whether the contribution is solely of excluded matter – should have covered the point. It therefore seems to me that the law is not simply that stated in *Vicom*, and that the presence or otherwise of a technical effect is no longer the primary

consideration. In my view it is no more than a subsidiary factor, and need be considered as a fourth step only where the invention passes the first three *Aerotel/Macrossan* steps. I do not think that is affected by anything which Pumfrey J said in *Shopalotto* because as I read it the Court of Appeal (paragraph 118) was commending that case purely for its historical insight into the way in which jurisprudence in the UK had developed rather than as an authority to be followed.

- 26 Mr Davis also argued for a “narrow” construction of the third step. On this basis, as I understood it, because the invention related to a gaming machine it could not be excluded at the third step: it would therefore be necessary to go on to the fourth step and consider whether the contribution was technical in nature. However, I think this ignores the point made in *Aerotel/Macrossan* at paragraph 43 that the contribution has to be considered as a matter of substance rather than the form of the claim. Indeed in the present case, as stated above, it is accepted that the contribution is in substance a data structure rather than a gaming machine.
- 27 Therefore what I have to consider is whether that contribution resides solely in excluded matter. Mr Davis’ arguments were primarily directed to the computer program head of exclusion and, as I have explained above, rested on the supposed technical contribution made by the invention. However, it seems to me that, once the conventional “hardware” elements are stripped from the claim, all that is left is a set of procedures to be implemented on a computer in order to determine and display a game outcome, and I think it follows that the contribution of the invention lies solely in a computer program. Even if the new procedures reduce the data storage requirements for a 3-D game and so improve its implementation by computer, I think any such improvements are due solely to the way in which the computer is programmed. In this it is distinguished from cases such as the “*Aerotel*” half of the *Aerotel/Macrossan* appeal, *Inpro SARL’s Patent* [2006] EWHC 70 (Pat), [2006] RPC 20 and *Arm Limited* (BL O/066/6) which Mr Davis drew to my attention. In all of these it seems to me that there was a contribution which went beyond excluded matter and included a feature which, applying the fourth step of *Aerotel/Macrossan*, could be regarded as technical in nature (see eg paragraph 54 of *Aerotel/Macrossan*). I therefore believe that the present invention is excluded as a computer program.
- 28 On the exclusion for playing games, Mr Davis thought the invention, being concerned with an improvement to computerised implementation of a game, was nothing to do with a new scheme, method or rules for playing a game. However, I drew his attention to the comment of the hearing officer in paragraph 33 of decision BL O/211/06, refusing a number of applications from IGT under this head of exclusion:

“I have difficulty with the contention, as a general principle, that constraints placed on a computer game which are programmed into a machine are not rules for playing a game. To illustrate this, consider for example a computerised version of snakes and ladders where the rules of the game about going up ladders and down snakes are programmed into the game and are not under player control. These are constraints on the way the computer

responds to player input but in my opinion they are still “rules” in the sense that they dictate how the game is played. .... I was not addressed specifically on how I should interpret “schemes or methods” as opposed to “rules” but there is no doubt in my mind that taken as a whole, the concept is broader than simply what a human being (in the shape of the player) has to do to play a game.”

- 29 Mr Davis believed that there was a technical effect in providing the functionality for the machine to cope with the game, and that it was necessary to distinguish the way in which the gaming machine functioned from the rules for playing the game. I am not convinced by this argument: it seems to me that, as the examiner pointed out, the invention does influence the way in which the game is played because (this being a game of chance, not skill) it influences the chance that a player has to win. To my mind, it therefore constitutes a method or rule, if not a scheme, for playing a game and I would agree with the hearing officer in O/211/06 that this concept is not limited to what the human player has to do. Irrespective of whether the contribution is technical in nature, I therefore believe that the invention fails the third Aerotel/Macrossan step under the playing games exclusion as well as the computer program exclusion.

#### Novelty and inventive step

- 30 This was referred to in passing at the hearing, but I did not understand there to be any dispute that the proposed claim was novel and inventive in relation to the prior art cited by the examiner, particularly CA 2343870 A1. I accept this, although in the light of my findings above I do not think it assists the applicant.

#### **Conclusion and next steps**

- 31 I have found that proposed claim adds subject matter in contravention of section 76(2) and that it relates to an invention which consists of both a program for a computer as such and a rule or method for playing a game as such. For the avoidance of doubt, I should make clear that these findings apply also to the earlier and slightly different claim filed on 15 September 2006.
- 32 As to any possible further amendment, I note that the specification as originally filed contained claims to a user interface involving a sensor responsive to an input device to initiate either the game or the initial state of a 3-D game object which are not within the ambit of my decision above. However, the examiner found these claims to be anticipated and the applicants have made clear (see their original patent attorney’s letter of 9 December 2005) that they do not intend to pursue them further in this application although reserving the right to make them the subject-matter of a divisional application. I do not therefore think that I need to allow any further opportunity to progress these claims and I do not think that any other saving amendment is possible. I therefore refuse the application under section 18(3).

#### **Appeal**



- 33 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days.

**R C KENNEL**

Deputy Director acting for the Comptroller