BL O/377/06

29 December 2006

PATENTS ACT 1977

APPLICANT Nintendo Co. Ltd

ISSUE Whether patent application number GB0308862.2 complies with section 1

HEARING OFFICER A C Howard

DECISION

Introduction

1 This decision relates to whether application GB0308862.2 in the name of Nintendo Co. Ltd. (hereafter "the applicant"), which was filed on 16 April 2003 claiming a priority date of 9 May 2002, and which is entitled "Game Machine and Game Program", relates to an invention which is excluded from patentability on the grounds of being a computer program or a scheme, method or rule for playing a game.

2 A hearing was requested following unsuccessful attempts to meet objections raised by the examiner that, *inter alia*, the claimed subject-matter related to excluded fields.

3 Around the time the hearing was being arranged, 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 which it reviewed the case law on the interpretation of section 1(2) and proposed a new four-step test (explained below) for the assessment of patentability. In a notice[1] published on 2 November 2006, the Patent Office stated that this test would be applied by examiners with immediate effect.

4 Accordingly, an examination report was issued on 2 November 2006 containing a fresh analysis of the invention in accordance with the test approved in *Aerotel/Macrossan.* This report confirmed that objections previously raised under novelty and inventive step had been overcome in the latest amendments, but considered that an objection still arose under the heading of unpatentable subject-matter. The report invited the applicant to file

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

fresh arguments taking account of the new case law, and indicated that the arrangement of a hearing had been put in hand. The report also noted the imminent expiry (on 9 November) of the period prescribed under Rule 34 for putting the application in order, and reminded the applicant that an extension of two months to this period was available as of right upon filing the requisite form and fee.

5 In a telephone conversation on 22 November, confirmed in writing on 27 November, the agent for the applicant (Ms Sarah Perkins) stated that the applicant did not intend to file further arguments in support of the application, but requested that a decision be issued on the papers. In a telephone conversation on 4 December, the Office warned that in the absence of further submissions, the matter would be decided on the basis that the applicant did not disagree with the examiner's arguments. According to the minute on the file, the agent repeated that no further submissions would be made but made clear that she did not accept the examiner's conclusions.

6 No request for an extension to the Rule 34 period has been made.

The application

7 The application describes a computer game involving a simulated race between vehicles (player objects or "karts") on a track in a virtual space. A frequent occurrence in such games is that a kart may be caused to spin, or crash and overturn, for example if a player collides or takes a bend too quickly. For convenience, in this decision I shall refer to all such events by the general term "crash". After such an event, it is necessary for the kart to be re-established on the track so that the game can continue.

8 A problem identified by the applicant with some prior art games of this type is that following a crash there is a discontinuity, for example the display may go momentarily blank, following which the kart is set back on the track and facing in the right direction, or the image of the crashed kart itself may disappear, reappearing in the correct orientation moments later. This is said to be unsatisfactory for the player experience.

9 The solution found to this problem is to provide means whereby, if the kart crashes, the computer takes over and shows an animated sequence of steps to place the kart back on the track facing in the same direction as it was travelling immediately beforehand. From the player's perspective the kart is made to recover from the crash in a seamless manner to a state in which the game can be continued.

10 As I mentioned above, there have been several cycles of amendment. The application as it currently stands includes a set of claims which were filed on 29 September 2006, four of which are independent and read as follows:

> 1. A game machine for executing a game in which a player object is displayed moving in a virtual space, comprising:
>
> pose control means for determining poses of the player object based on a first virtual external force applied to the player object in a virtual game

space;
overturn determination means for determining, on the basis of the pose of the player object, whether the player object is to be overturned;

travelling direction storing means for storing, when the overturn determination means has determined that the player object is to be overturned, a travelling direction of the player object before overturning of the player object is commenced;

first overturn processing means for performing a process of

overturning the player object, when the overturn determination means has determined that the player object is to be overturned, by determining a series of poses of the player object, based on a second virtual external force applied to the player object in the virtual game space, to cause the player object to rotate, wherein the second virtual external force is different to the first virtual external force;

second overturn processing means for determining a series of poses of the player object, based on the first virtual external force applied to the player object in the virtual game space, after the poses determined by the first overturn processing means; and

overturn recovery means for determining, after the poses of the player object determined by the first and second overturn processing means, a further series of poses of the player object, in the absence of the first virtual external force being applied to the player object, which brings the pose of the player object towards an upright state and towards a travelling direction corresponding to the travelling direction stored in the travelling direction storing means, by rotating the player object from the overturn state

wherein the travelling direction storing means is adapted to store a travelling direction of the player object independently of the series of poses determined during the process of overturning the player object and wherein the poses of the player object determined by the first and second overturn processing means and the overturn recovery means enables the player object to be displayed moving in a seamless manner back to its travelling direction prior to its overturning.

6. A game machine for executing a racing game in which a race kart is displayed moving in a virtual space, comprising:

pose control means for determining poses of the race kart based on a first virtual external force applied to the race kart in a virtual game space;

rotation determination means for determining, on the basis of the pose of the race kart, whether the race kart is to be rotated;

travelling direction storing means for storing, when the rotation determination means has determined that the race kart is to be rotated, a travelling direction of the race kart before rotation of the race kart is commenced;

first rotation processing means for performing a process of rotating the race kart, when the rotation determination means has determined that the race kart is to be rotated, by determining a series of poses of the race kart, based on a second virtual external force applied to the race kart in the virtual game space, to cause the race kart to rotate, wherein the second virtual external force is different to the first virtual external force;

second rotation processing means for determining a series of poses of the race kart, based on the first virtual external force applied to the race kart in the virtual game space, after the poses determined by the first rotation processing means; and

overturn recovery means for determining, after the poses of the race kart determined by the first and second rotation processing means, a further

series of poses of the race kart, in the absence of the first virtual external force being applied to the race kart, which brings the pose of the race kart towards an upright state and towards a travelling direction corresponding to the travelling direction stored in the travelling direction storing means, by rotating the race kart from the rotated state

wherein the travelling direction storing means is adapted to store a travelling direction of the race kart independently of the series of poses determined during the process of overturning the race kart and wherein the poses of the race kart determined by the first and second rotation processing means and the overturn recovery means enables the race.kart to be displayed moving in a seamless manner back to its travelling direction prior to its rotation.

7. A game program for causing a game machine to execute a game in which a player object is displayed moving in a virtual space, the game program causing the game machine to execute the following steps:

a pose control step of determining poses of the player object based on a first virtual external force applied to the player object in a virtual game space;

an overturn determination step of determining, on the basis of the pose of the player object, whether the player object is to be overturned;

a travelling direction storing step of storing, when the overturn determination means has determined that the player object is to be overturned, a travelling direction of the player object before overturning of the player object is commenced;

a first overturn processing step of performing a process of overturning the player object, when the overturn determination means has determined that the player object is to be overturned, by determining a series of poses of the player object, based on a second virtual external force applied to the player object in the virtual game space, to cause the player object to rotate, wherein the second virtual external force is different to the first virtual external force;

a second overturn processing step of determining a series of poses of the player object, based on the first virtual external force applied to the player object in the virtual game space, after the poses determined in the first overturn processing step; and

an overturn recovery step of determining, after the poses of the player object determined by the first and second overturn processing means, a further series of poses of the player object, in the absence of the first virtual external force being applied to the player object, which brings the pose of the player object towards an upright state and towards a travelling direction corresponding to the travelling direction stored in the travelling direction storing means, by rotating the player object from the overturn state

wherein the travelling direction of the player object is stored independently of the series of poses determined during the process of overturning the player object and wherein the poses of the player object determined in the first and second overturn processing steps and the overturn recovery step enables the player object to be displayed moving in a seamless manner back to its travelling direction prior to its overturning.

12. A game program for causing a game machine to execute a racing game in which a race kart is displayed moving in a virtual space, the game program causing the game machine to execute the following steps:

a pose control step of determining poses of the race kart based on a first virtual external force applied to the race kart in a virtual game space;

a rotation determination step of determining, on the basis of the pose of the race kart, whether the race kart is to be rotated;

a travelling direction storing step of storing, when the rotation determination means has determined that the race kart is to be rotated, a travelling direction of the race kart before rotation of the race kart is commenced;

a first rotation processing step of performing a process of rotating the race kart, when the rotation determination means has determined that the race kart is to be rotated, by determining a series of poses of the race kart, based on a second virtual external force applied to the race kart in the virtual game space, to cause the race kart to rotate, wherein the second virtual external force is different to the first virtual external force;

a second rotation processing step by determining a series of poses of the race kart, based on the first virtual external force applied to the race kart in the virtual game space, after the poses determined during the first rotation processing step; and

a rotation recovery step of determining, after the poses of the race kart determined by the rotation processing means, a further series of poses of the race kart, in the absence of the first virtual external force being applied to the race kart, which brings the pose of the race kart towards an upright state and towards a travelling direction corresponding to the travelling direction stored in the travelling direction storing means, by rotating the race kart from the rotated state

wherein the travelling direction of the race kart is stored independently of the series of poses determined during the process of overturning the race kart and wherein the poses of the race kart determined by the first and second rotation processing means and the rotation recovery means enables the race kart to be displayed moving in a seamless manner back to its travelling direction prior to its rotation.

11 There are also a number of subordinate claims and an “omnibus” claim to a game machine.

The law

12 The examiner has objected that the invention is excluded from patentability under section 1(2) of the Act, in particular that it relates to a program for a computer under section 1(2)(c). The relevant parts of this section read (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) 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 purpose of this Act only to the extent that a patent or application for a patent relates to that thing as such.*

13 These provisions are designated in section 130(7) as being so framed as to have, as nearly as practicable, the same effect as the corresponding

provisions of the European Patent Convention (EPC), i.e. Article 52.

Interpretation

14 As mentioned above, the correct approach to assessing patentability under section 1(2) is set out in the judgement of the Court of Appeal in *Aerotel/Macrossan*. This comprises a four-step test as follows:

(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.

15 In reaching its judgment, the Court fully considered all the precedent UK case law in this area. Following the principles discussed in *Colchester Estates (Cardiff) v Carlton Industries* [1986] 1 Ch 80, [1984] 2 All ER 601 and [1984] 3 WLR 693, *Aerotel/Macrossan* must be treated as a definitive statement of how the law on patentable subject matter is now to be applied in the UK. It should not therefore be necessary to refer back to previous UK or EPO case law regarding this issue.

Application of the new approach

16 The Court saw the first step, properly construing the claim, as something that always has to be done and involves deciding what the monopoly is before going on to the question of whether it is excluded.

17 The Court equated the second step to identifying what the inventor has really added to the stock of human knowledge. The Court re-affirmed that in identifying the contribution, it is the substance of the invention that is important rather than the form of the claim adopted.

18 What the applicant alleges has been contributed is not conclusive and ultimately it is the actual contribution that counts. However, the Court acknowledged that at the application stage, it is quite in order to consider the tests on the basis of the alleged contribution. Thus the results of the search carried out within the Office, as well as the prior art acknowledged by the applicant, will be relevant to this question.

19 The third step comprises deciding whether the contribution is solely unpatentable subject matter, that is to say the matter comprised in the list in the statute. The Court preferred to refer directly to the wording of Article 52(2) EPC which differs subtly from the respective provision in the Act, but they made clear that this makes no difference in practice to the effects of the provision. The Court saw “solely” as merely an expression of the “as such” qualification of Article 52(3). Thus if the contribution falls wholly within one or more of the listed categories, it is not a patentable invention. If it falls partly within one or more of the listed categories and partly outside, it passes the

third step.

20 If the invention passes the third step, one must then check whether the contribution is technical in nature. It was not seen as necessary in all cases to apply this fourth step if the invention has failed at the third.

Construing the list of excluded matter

21 In paragraph 12 of the judgement, Jacob LJ said that Article 52(2) is not a list of exceptions. Rather, it sets out positive categories of things which are not to be regarded as inventions. Accordingly, the general UK and European principle of statutory interpretation that exceptions should be construed narrowly does not apply to them.

Benefit of the doubt

22 In paragraph 5 of the judgement it is made clear that whether the contribution of an invention falls within the excluded matter is a question of law which should be decided during prosecution of the patent application. It is not a question on which formally there can be any doubt of which applicants could be entitled to the benefit. On the other hand, giving benefit of reasonable doubt at the application stage is appropriate where debatable questions of fact arise.

Discussion

23 Turning now to consider the application itself, independent claims 1 and 6 both relate to game machines having very similar features, while claims 7 and 12, although formally independent, in effect relate to programs for causing games machines to execute games having the features of claims 1 and 6 respectively. It is therefore convenient to consider claims 1 and 6 together first, and then go on to consider claims 7 and 12 in the light of my conclusions regarding claims 1 and 6.

24 Step 1 of the *Aerotel/Macrossan* test is to construe the claims. As remarked above, claims 1 and 6 are similar, both reciting “a game machine for executing a game in which a [player object] is displayed moving in a visual space”. The two claims differ only in that claim 1 relates to the situation where a player object overturns and then recovers, and claim 6 to the situation where the player object is a race kart which rotates and then recovers. Claim 1 at least is thus not limited by the nature of the player object, which could accordingly be any object moving in a virtual environment and capable of exhibiting the required behaviour. However for the sake of brevity I have where convenient referred in this decision to the player object as a “kart”.

25 The introduction “a game machine for executing a … game in which …” tells me that we are talking here about an apparatus characterised by the manner in which it will perform. In the described embodiments the apparatus is a programmable device and the several “means” defined in the claims are realised by suitable programming. This is in practice the only feasible way in which the invention could be implemented.

26 An element of both claims 1 and 6 is a “pose control means” which I take to be the means within the system by which the player object is controlled. The “pose” itself in its most general sense I take to be the properties of the object in virtual space which are assigned to it by the system.

27 The claims define distinct means which control the behaviour of the kart in different phases of the crash and recovery sequence. In each of these phases the kart is subject to different virtual forces. An explanation of this is given in the agent’s letter dated 29 September 2006, in which it is stated that in the initial phase (determined by the first overturn processing means) the player object is subject to forced continual rolling or spinning under the influence of a virtual force particular to this phase (the “second” virtual force according to the claims, although incorrectly referred to as the “first” in the letter); in the second phase (determined by the second overturn processing means) the object becomes subject to the virtual force which is also used to control the pose of the object in a normal situation (the “first” virtual force); and in the recovery phase the player object is recovered under the control of the recovery means, absent the influence of any virtual force, to an upright position and facing in the travelling direction which was stored immediately before the roll/spin event was triggered. I take this to mean that in the first phase the kart overturns or spins independently of the normal virtual environment, while in the second phase, although still out of the control of the player, it becomes subject to the virtual environment (e.g. it could continue to spin or roll under inertia and might behave differently depending on whether it was on the track or off it). In the final, recovery, phase the kart is set back to the travelling direction it had prior to the crash.

28 Moving on to the second step, I have to identify the contribution of the invention. Prior art is discussed in the application itself and has also been cited in the course of the examination. The two most pertinent citations are those cited recently by the examiner and referred to as the “Small Rockets” article[2] and the “Burnout” game[3].

29 There is no disagreement that games were known at the priority date of this application in which a player object is re-established in play following a crash. In many cases this happens in a discontinuous manner as discussed in the application itself. “Burnout” and “Small Rockets” are however different in that they disclose games in which a player object in a crash situation is subject to virtual forces according to a realistic physics model. The displayed behaviour of the object in these cases would appear to be continuous and seamless.

30 The agent’s letter of 29 September 2006 argued that in “Burnout” and “Small Rockets” the object would not necessarily be re-established on the track in the same direction as it was travelling immediately before the crash, and went on to identify the following particular features of claim 1 as distinguishing the claimed matter over the prior art (claim 6 could be analysed similarly with

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2 “Interview with Small Rockets – Marcus Lynn, designer/programmer of 4x4 offroaders” interview by Antmaster (apparently published 24 June 2001). The original webpage URL is no longer accessible.
3 “Gamespot: Burnout Review” http://uk.gamespot.com/gamecube/driving/burnout/review.html apparently posted 26 April 2002

appropriate substitution of terms):

(a) travelling direction storing means
(b) first overturn processing means (applying a second virtual external force)
(c) second overturn processing means (applying a first virtual external force); and
(d) overturn recovery means

31 In the official letter dated 9 November, the examiner concurred with this assessment. Having considered the matter, I too am satisfied that the contribution made by the invention resides in the provision of the above series of means, which in practice operates (using the stored information about the travelling direction) to set the kart back upright and facing in the same direction as it was prior to the overturn/spin event.

32 I should mention here that there is a suggestion in the agent's letter of 29 September that there might also be some contribution in the fact that all the steps are under the control of the game engine, and that this has beneficial effects as regards processing and memory demands. However I see nothing in the main claims that require this unambiguously. Moreover, even if the claims could be interpreted in such a way, it seems to me that such advantages are equally present in "Burnout" and "Small Rockets" wherein the crash sequence is controlled in accordance with a realistic physics model. I therefore do not agree that a contribution is provided by this aspect.

Computer program

33 The third step is to determine whether the actual contribution falls solely within the field of excluded subject matter. The contribution as set out above is realised wholly within the game computer by means which are in practice computer program elements, and the manner in which this is done amounts to a series of steps executed under the control of a program. It is therefore clear that the contribution lies wholly within the excluded area of a computer program.

Scheme method or rule for playing a game

34 I have found that the contribution is concerned with how a player object transitions from one game state to another when a crash occurs. During this phase the player object is under the control of the computer, not the player. Although what the player sees on the screen is affected, the manner of playing the game is not, in the sense that what the player does (or is able to do or prevented from doing) in order to win, lose or play the game at any particular point is no different according to the invention than it is in the prior art. I do not therefore consider that the contribution as defined above falls under the category of a scheme method or rule for playing a game.

Technical nature

35 Having found that the contribution relates wholly to excluded matter, it is not

necessary to proceed to the fourth step and consider whether or not the contribution is of a technical nature.

Remaining claims; possible amendments

36 Turning now to claims 7 and 12, insofar as these relate to programs for causing machines to execute the steps as defined in claims 1 and 6, the respective contributions they make can at the very best be no greater, and they cannot therefore stand as allowable in their own right, given my conclusion that claims 1 and 6 relate solely to excluded matter.

37 I have read the specification and considered the subordinate claims, and can find no basis for any possible amendment which could result in a claim or claims which would be allowable.

Conclusion

38 I have concluded that claims 1, 6, 7 and 12 relate to matter excluded under section 1(2). I have also found that no amendment is possible which could avoid this objection. I therefore refuse the application in accordance with section 18(3).

Appeal

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

A C Howard
Deputy Director acting for the Comptroller