



12 January 2009

PATENTS ACT 1977

APPLICANT eSpeed Inc.

ISSUE Whether patent application number GB
0802593.4 complies with sections 1(1)(b)
and 1(2)

HEARING OFFICER R C Kennell

DECISION

- 1 This application is a divisional application from application no. GB 0500841.2 which is now terminated. It has been accorded a filing date of 17 January 2005, with a priority of 15 January 2004 from an earlier US application, and was published under serial no. GB 2 443 584 A on 7 May 2008.
- 2 Despite amendment of the claims during substantive examination, the applicant has been unable to persuade the examiner that the invention involves an inventive step as required by section 1(1)(b) or that it is patentable within the meaning of section 1(2) of the Act. A hearing was arranged to resolve these matters, but in a letter dated 29 September 2008 the applicant said that it was content for me to decide the matter on the basis of the papers on file. I am taking account also of the arguments on the parent application in relation to similar claims where relevant.
- 3 I am also taking account of the further submissions in the applicant's letter of 3 December 2008, having allowed an opportunity for further comment in the light of the subsequent decision of the Court of Appeal in *Symbian*¹ concerning section 1(2).

The invention

- 4 The invention is directed to the use of game controllers such as gamepads or joysticks for electronic trading, game controller signals being mapped to trading commands in the trading system. The specification explains that this enables trading commands to be performed with greater speed and accuracy than with a keyboard or mouse, particularly for younger traders who are likely to be familiar

¹ *Symbian Ltd's Application* [2008] EWHC Civ 1066

with game controllers. For example a typical game controller can, unlike a keyboard, be easily held off a crowded desk surface between the hands whilst leaving the digits free to manipulate the controls. It can also vibrate or flash to provide a much more distinctive signal than an on-screen acknowledgment that an event has been completed. Other advantages are said to be that a user terminal can store configurations for different types or models of controller to enable them to be interchangeably used, and that the configuration of the controller can be personalised for a particular user.

- 5 The specification as filed suggests that the use of a controller from the light amusement field of computer games in the electronic trading field goes against the trend in the latter towards bespoke designs and consoles and therefore overcomes a prejudice. However, the prior cited by the examiner includes specification US 2002 / 0070915 A1 (Mazza et al) which discloses a hand-held controller having control buttons to perform electronic trading operations. Amended claims of more limited scope were filed on 20 June 2008 with a view to distinguishing this and the other cited prior art. These comprise independent claims 1 and 9; claim 1 reads:

1. A system for electronic trading comprising:
 - first computer apparatus operable for executing a plurality of different trading system commands associated with electronic trading of financial instruments;
 - a plurality of workstations each comprising a respective second computer apparatus, each said second computer apparatus being operable for generating said trading system commands for execution by the first computer apparatus; and
 - a communication network for communicating said trading system commands generated by said second computer apparatus to said first computer apparatus;wherein at least one of said workstations further comprises:
 - (a) first and second game controllers of respective first and second types operable respectively for transmitting respective first and second game controller signals to said second computer apparatus of said at least one workstation;
 - (b) a memory arranged for storing at least first and second sets of controller signal relationships, said first set being associated with a first user and with said first type of game controller, and said second set being associated with a second user and with said second type of game controller; and
 - (c) an interface application communicatively coupled to the memory;wherein said controller signal relationships associate said game controller signals with respective ones of said plurality of trading system commands; and
- wherein the interface application is operable to:
- (i) identify a particular user associated with a particular game controller;
 - (ii) identify the type of said particular game controller;
 - (iii) determine at least one of the stored sets of controller signal

relationships based at least in part on the identified user and the identified controller type;
(iv) receive a particular game controller signal from the particular game controller;
(v) determine the trading system command associated with the particular game controller signal based at least in part on the at least one determined set of controller signal relationships; and
(vi) communicate the determined trading system command to said first computer apparatus for execution thereby.

whilst claim 9 is to a computer readable medium which implements this system.

6 In the event that I find claims 1 and 9 not to be allowable, the applicant asks me to give independent consideration to system claims 6 and 7

6. The system of any preceding claim, wherein the interface application is further operable to
(a) provide to a user a controller reconfiguration interface;
(b) receive via the controller reconfiguration interface one or more reconfiguration instructions; and
(c) reconfigure the one or more controller signal relationships based on the received reconfiguration instructions.

7. The system of any preceding claim, wherein the memory is further arranged for storing a third set of controller signal relationships, the third set being associated with the second user and with the first type of game controller.

and the corresponding computer readable medium claims 13 and 14.

The law

7 An invention shall be taken to involve an inventive step as required by section 1(1)(b) if, in accordance with section 3, “it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above)”. I do not think I need to quote sections 2(2) and 2(3), but it follows from these that the state of the art comprises all matter which has at any time before the priority date of the invention been made available to the public, whether in the UK or elsewhere.

8 Section 1(2) 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 –

- (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.”;

the examiner has raised objection under the computer program and business method exclusions. I must interpret section 1(2) in accordance particularly with the decisions of the Court of Appeal in *Symbian* and *Aerotel*², which I consider in detail below.

Argument and analysis

Inventive step

- 9 Of the patent specifications cited by the examiner, the key document in my view is US 2002 / 0070915 A1 (Mazza et al). This seeks to overcome the problem that known trading systems require operators to constantly shift their vision between a controller and one or more visual displays each time a trading operation is performed. The essence of the invention in Mazza is to provide a control unit having trading control “buttons” (which term is defined to include levers, switches, joysticks, depressable buttons and sliders) so that it does not have to be slid across a surface, and customisable software so that it can interface with a variety of proprietary trading applications. The unit is preferably a device with a series of buttons for carrying out different functions and is preferably sized and shaped so that it can be controlled with the hands whilst located in the user’s lap or on a desk in a similar manner to a conventional game controller. (I note that in the applicant’s submissions of 29 September 2008 the applicant emphasises that although the unit is similar to a game controller it is not actually a game controller.)
- 10 As paragraph [0031] of Mazza explains, the software is intended to provide a fast-access “game controller” interface to these applications. The software may act as a virtual “plate of glass” overlay on the proprietary application to enable the controller to mimic a mouse/keyboard input. This requires each application to be configured to specific buttons on the controller by means of a “configuration engine” program; configurations may be supplied as files and shipped with the hardware to enable the controller to work with several popular packages “out of the box”. Alternatively, the interface may be provided through a public API so that software manufacturers may customise an application to use the controller without programming assistance.
- 11 None of the other specifications cited by the examiner relate to electronic trading and even if they were part of the common general knowledge of the skilled worker in that field I do not think they would be regarded as having any bearing on the particular problems of electronic trading which the invention is designed to solve.

² *Aerotel Ltd v Telco Holdings Ltd and Macrossan’s Application* [2006] EWCA Civ 1371, [2007] RPC 7

- 12 The examiner in his most recent report argues – and the applicant disputes - that it would be obvious to combine the disclosure of Mazza with the disclosure in the review “Console Gamepad Roundup – Getting a grip on the hottest (and coolest) gamepads for console gaming” (in IGN Entertainment by Chuck Miller on 16 October 2002)³ to arrive at the invention of claims 1-14. The Miller review includes amongst the Microsoft Xbox gamepads the “Firestorm Programmable” gamepad which has a program button by which analog buttons, D-pad directions and mini-stick axes can be remapped to the user’s specifications using “Smart Mapping” technology. As the examiner has done, I will consider the matter on the basis of the four-step *Windsurfing* test as reformulated by the Court of Appeal in *Pozzoli*⁴

Identify (a) the notional person skilled in the art and (b) the relevant common general knowledge of that person

- 13 I do not understand it to be disputed that the notional skilled person is primarily someone who is skilled in the art of electronic trading systems, who would seek assistance as necessary from a computer programmer in the practical implementation of such systems. In my view the skilled person would therefore be alert to the possibility that programming applications outside the field of electronic trading might offer solutions to problems arising in that field.

Identify the inventive concept of the claim in question or, if that cannot readily be done, construe it

- 14 I consider the inventive concept underlying claims 1 and 9 to be an interface connected to a memory storing sets of controller signal relationships which associate first and second types of game controller with first and second users respectively, the interface allowing a signal from a game controller to be converted into a trading system command according to both the particular user and the particular type of controller.

Identify what, if any, differences exist between the matter cited as forming part of the state of the art and the inventive concept of the claim or the claim as construed

- 15 As I read it, Mazza does not explicitly disclose the use of either more than one controller or of a controller which has specifically been designed as a game controller. Rather, the controller appears to have been designed for the trading community, so that it can be held and operated in the same way as a game controller to allow trading commands to be given through a game controller interface (see paragraphs [0015] and [0031]).

- 16 The applicant contrasts the invention with Mazza where it sees a clear intention that the functionality of each button must be fixed so that the same trading command will produce the same result irrespective of the trading application that the controller is connected to. I accept this would appear to be necessary if, as

³ Available at <http://archive.gamespy.com/hardware/october02/consolepads>

⁴ See *Windsurfing International Ltd v Tabur Marine (Great Britain) Ltd* [1985] RPC 59 and *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588

suggested at paragraphs [0016] and [0030], differing sizes, shapes and textures of control button are relied on to enable the user to distinguish the buttons without looking at them.

- 17 The Chuck Miller document does not disclose any application of the reviewed gamepads outside the field of electronic games.

Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to persons skilled in the art or do they require any degree of invention?

- 18 The examiner argues that the skilled person identified above would be aware (i) that multiple users of a games console, using the same type of controller, can each have their own customised profiles (for which proposition he quotes his own personal knowledge) and (ii) that other types of controller would be available to games players, including those with extra programmable features such as the “Firepad Programmable”. However, the applicant does not believe that there is any evidence that the person skilled in the art of electronic trading systems would want to achieve the functionality which the invention provides and does not think that the Chuck Miller citation would even be considered by that skilled person.

- 19 It is helpful here to refer to the following passages in the examiner’s arguments on the parent application in relation to similar claims. Although those claims were not identical to the claims now under consideration, the points made by the examiner are in my view germane to them and help to set his present objection in context:

[Report of 7 December 2006] “.... It is well known in the art of game consoles that multiple game controllers can be set up so that multiple users can participate and have their game controllers set up in various ways. An example would be the Microsoft Xbox game “Halo” in which at least two players can participate and have different roles; one player controlling a gun, one person driving a vehicle. The console is set up to identify each player and their associated functions. A mapping interface would implicitly be used to enable the operation of game controllers thereby mapping out the different signals from each of the players.”

[Report of 23 May 2007] “The Microsoft Xbox game “Halo” was originally released on 14 Mar 2002 as reported at <http://www.xbox.com/en-GB/games/h/halo> [accessed 22 May 2007]. From my own personal experience of this game, and disclosed briefly on page 6 of the manual⁵, the use of multiple controllers enable multiple players to participate, in some cases taking on different roles. Each player can customise their own profiles which includes rearranging the default functions. Thus multiple, customisable game controllers were known in the art before the priority date of your invention.

⁵ The manual for the Halo game; as accessed 22 May 2007 at <http://downloads.planetmirror.com/pub/replacementdocs/Halo - Manual - XBX.pdf>

The use of different types of controllers with Xbox consoles was also known before the priority date of your invention , as shown by the joystick type controller in the X-Arcade article⁶.”

- 20 The examiner has quoted his personal knowledge and experience in relation to game consoles such as mentioned in the above articles, and I do not think there can be any objection to the initial formulation of an obviousness objection on that basis⁷. However, rightly in my view, the applicant points out that that the personal knowledge of the examiner is not necessarily evidence of the common general knowledge of the person skilled in art of electronic trading systems. That said I believe that the articles cited by the examiner all point to the game consoles in question being well-established commercial products at the priority date of the invention, and that I can therefore refer to them in order to establish the common general knowledge of the skilled worker.
- 21 Returning to Mazza I consider that, even if there is a prejudice in the electronic trading art against the use of game controllers designed primarily for amusement purposes (see the specification at page 3 line 15 – page 4 line 2), this is a document which would have been found and seriously considered by the person skilled in the art of electronic trading systems since it points to the use of a game-type controller and interface in order to speed up the trading operation.
- 22 As I have stated above, in my view the skilled person would seek assistance as necessary from a computer programmer in implementing electronic trading systems. That person would therefore look to someone familiar with programming electronic games in order to implement Mazza. On the basis of the documents which the examiner has cited I consider that such a programmer would have it as part of his or her common general knowledge that the system in Mazza could readily be adapted to allow more than one trader to use the system and to provide each trader with a controller – which would not have to be specifically designed for trading but could be a commercially available customisable game controller - having command functions customised to his or her own profile, with the relationships between particular users and their customised controller functions being stored in memory so that controller signals could be converted into trading commands. In this way the skilled person would, without inventive effort, arrive at the system of claim 1 and the computer readable of claim 9 to implement that system.

Dependent claims

- 23 The examiner has asserted that the features in all the remaining claims do not add anything which is inventive, and the applicant has not contested this except for claims 6-7/13-14 which it specifically asks me to consider. Leaving aside the “omnibus” claim 8, I therefore take it to be agreed that claims 2-5/10-12 (relating to the additional provision of a keyboard and mouse for generating trading system commands, the generation of feedback signals such as vibration, and the

⁶ Archived web page <http://web.archive.org/web/20031001102758/http://www.x-arcade.com/xbox.shtml> ; as accessed 22 May 2007

⁷ See paragraphs 3.48-3.49 of the Manual of Patent Practice at <http://www.ipo.gov.uk/practice-sec-003.pdf>

provision of a facility for the user to configure the controller) do not add anything inventive to claims 1 and 9.

- 24 I accept that none of the cited art specifically discloses the provision of means to reconfigure, rather than configure, the controller. However if configuration by the user is a conventional feature, I cannot see that giving a reconfiguration option would be anything other than a routine matter for the computer programmer to whom the skilled person implementing Mazza would turn. I therefore consider claims 6 and 13 to be obvious.
- 25 Claims 7 and 14 provide for a further set of controller signal relationships which is associated with the second user and with the first type of game controller, and again I accept that this is not specifically disclosed in the cited prior art. On the face of it, this might seem to be yet another routine option for the skilled person once the idea of multiple individually-customisable game controllers is known. However, I am not convinced that the prior art goes far enough to suggest that it is something which would in fact occur to a programmer as a matter of routine.
- 26 I therefore consider that on the basis of the prior art before me claims 7 and 14 involve an inventive step.

Collocation

- 27 Finally on inventive step, the examiner has suggested that the invention might be regarded as a collocation of known integers – the control of an electronic trading system with a game controller and the ability of multiple users to use different types of controller on a games console. I do not think it is correct or helpful to look at the invention in this way, since, as the applicant points out, there is a functional connection between the game controllers and the workstation computer through the stored controller-signal relationships.

Excluded matter

- 28 In its recent decision in *Symbian* concerning the computer program exclusion the Court of Appeal approached the question of excluded matter primarily on the basis of whether there was a technical contribution. However the Court was quite clear (see paragraphs 8-15 of the decision) that the structured four-step approach to the question in its previous decision in *Aerotel* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*⁸ which rested on whether there was a technical contribution; and that any differences in the two approaches should affect neither the applicable principles nor the outcome in any particular case.
- 29 Indeed the Court at paragraph 59 considered its conclusion in the light of the *Aerotel* approach. I therefore consider it right to base my assessment of patentability in the present case on the same four-step approach as explained at paragraphs 40-48 of *Aerotel*, namely:

⁸ *Merrill Lynch's Application* [1989] RPC 561

- 1) Properly construe the claim
- 2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution); as explained at paragraph 43 this is “an exercise in judgment probably involving the problem said to be solved, how the invention works, what its advantages are”; it is essentially a matter of determining what it is the inventor has really added to human knowledge, and involves looking at substance, not form.
- 3) Ask whether it falls solely within the excluded matter, which (see paragraph 45) is merely an expression of the “as such” qualification of section 1(2).
- 4) If the third step has not covered it, check whether the actual or alleged contribution is actually technical.

30 The Court believed that it was possible, at least in principle, to reconcile this with the decision of the European Patent Office Board in *Duns Licensing Associates* (T 0154/04) criticising the *Aerotel* approach by conflating the third and fourth *Aerotel* steps. It was fortified in its view by the approach taken in a more recent decision of the Board in *Gameaccount Ltd* (T 1543/06) holding that patent protection should not be conferred “where the only identifiable contribution of the claimed technical implementation to the state of the art is the excluded subject-matter itself”. The Court stated at paragraph 15 that the *Gameaccount* approach:

“.... plainly requires one to identify the contribution (which equates to stage 2 in *Aerotel*) in order to decide whether that contribution is solely “the excluded subject-matter itself” (equating to stage 3 in *Aerotel*), while emphasising that the contribution must be “technical” (effectively stage 4 in *Aerotel*). The order in which the stages are dealt with is different, but that should affect neither the applicable principles nor the outcome in any particular case.”

Construction of the claims

31 This is not in issue and I do not in any case think that it presents any problems.

Identification of the contribution

32 The examiner’s view is that the contribution is the use of an interface to enable trading system commands to be correctly mapped to a particular game control signal, the signal being received from a particular user using one of two particular types of connected game controller. However, in its submissions of 29 September and 3 December 2008 the applicant argues that the technical innovation lies in the provision of new combination of hardware, namely a network with at least two physical controllers, which interacts with new software resulting in a new functionality which allows improved efficiency of operation. In the view of the applicant there is no change in the actual trading process but only a change in the physical means for entering control signals into the first computer

apparatus which executes the trading commands; it therefore considers that the game controllers and interface application make up a new input device.

33 It sees this innovation as something which, unlike *Symbian*, is not achieved entirely in software and is analogous to the system which was allowed in *Aerotel*. *Aerotel*'s invention (patent no. GB 2171877) avoided the need to pre-pay for telephone calls (eg in a call box) by providing a "special exchange" in the routing of the call via a number of public exchanges. The caller had a coded account with this exchange for the deposition of credit. To make a call he entered the number of the exchange and his code, and then the callee's number: so long as there was sufficient credit in his account the call would be put through. The Court of Appeal held in paragraph 53 of its decision that the system as a whole was new, and was new in itself and not merely because it was to be used for the business of selling telephone calls; even though the system could be implemented using conventional computers the contribution of the invention was a "new physical combination of hardware" which could not be excluded solely as a method of doing business. The computer program exclusion was not specifically in issue in the *Aerotel* appeal.

34 However, I note that in its 29 September submissions the applicant explains in some detail the functionality and enhanced efficiency provided by the invention. I think it will be helpful to quote this explanation more or less in full:

"The workstation includes, as input devices, at least two game controllers of different types. The game controllers are operable to generate controller signals by activation of buttons or other elements on the controller. In response to these controller signals, an interface application selects a trading command dependent on the controller signal which has been generated. However this selection is not only on the basis of the particular controller signal but, by making use of stored sets of controller signal relationships, the selection is also on the basis of the particular controller being used and the particular user who is using that controller.

In view of these features:

1. A given game controller signal from a particular game controller type may cause different trading commands to be generated dependent upon the user of the game controller, and
2. Different controller signals from the same game controller type can be used to generate the same trading command dependent upon the particular user of the game controller.

.....

Accordingly, by means of the features of claim 1 as discussed above, each user can not only use the type of controller which he finds convenient but, by storing the appropriate relationships in the memory, he can operate the chosen controller in a way most convenient to him."

35 In the light of this I consider that the examiner has correctly identified where the

contribution lies. In my view, what the invention has added to human knowledge as a matter of substance is an interface which allows a trading command to be generated by making use of stored sets of game controller signals so that the command can be selected on the basis of both a particular user and a particular game controller. I accept that this enables a trading system to be controlled by two game controllers in a way that was not possible before, but the individual hardware items are conventional and I consider that any novelty in their overall arrangement is a consequence of using the interface of the invention rather than a contribution in its own right.

36 I am bound by the decision of the Court of Appeal in *Aerotel* but I do not think the Court went any further at paragraphs 50-57 than finding that because of the presence of a new piece of equipment (the “special exchange”) there was a new arrangement of hardware which could not be excluded as a method of doing business (the computer program exception not being in issue). I do not think that the decision can be used as a matter of course to justify finding a contribution in hardware where the link between conventional hardware items arises because of a new piece of software. To do so would in my view run the risk of exalting form over substance when identifying the contribution.

37 For the avoidance of doubt I should make clear that neither the examiner nor the applicant is arguing that the contribution lies in using a game or game-type controller to execute trading commands. I do not in any case think that would be tenable in the light of the cited prior art, especially *Mazza*.

Does the contribution fall solely within excluded matter?

38 The interface which I have identified as the contribution is in my view a computer program for generating trading commands to be executed by an electronic trading system. As regards the computer program exclusion, the Court of Appeal in *Symbian* gave useful guidance at paragraphs 52-58 as to when a program might make a technical contribution sufficient to avoid the exclusion. It particularly emphasised (see paragraph 56) the need to look at the practical reality of what the program achieved and to ask whether there was something more than just a “better program”. At paragraph 58 the Court stated that a technical innovation, whether within or outside the computer, would normally suffice to ensure patentability.

39 In this case I do not consider that the program a computer makes such a technical contribution. In my view, as a matter of practical reality the program enables trading commands to be generated more efficiently; but I consider this advantage to arise solely because there is a better program and not because there is any technical improvement in the operation of the hardware items making up the overall trading system.

40 It is clear from *Symbian* at paragraph 27 that the use of a program to implement a business method does not prevent the invention from being excluded on the latter ground. I therefore need to consider whether the more efficient generation of trading commands as a result of the program relates solely to a business method. The applicant argues in its 29 September submission (based on its view that the

contribution is a new device for entering control signals) that the contribution is wholly outside excluded matter because it does not change the trading process.

41 Having taken a different view from the applicant as to where the contribution lies, I do not accept this argument. In my view a program for executing trading commands is still a program for carrying out a business method even if the trading commands are fed into a conventional trading system. Apart from the running of the computer program there is to my mind nothing technical in the way that the improved efficiency of the invention is achieved.

42 I therefore agree with the examiner that the contribution relates solely to a computer program and a business method and therefore lies solely in excluded matter.

Is the contribution technical?

43 Having considered this under the third *Aerotel* step, I do not need to go on to the fourth step.

Conclusion

44 I therefore conclude that the invention of claims 1 and 9 is excluded under section 1(2). Even though I have found that claims 7 and 14 involve an inventive step, having read the application I do not consider that any saving amendment is possible which would avoid exclusion under section 1(2). I therefore refuse the application under section 18(3).

Appeal

45 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