

9 September 2008

## PATENTS ACT 1977

APPLICANT eSpeed, Inc.

ISSUE Whether patent application number GB  
0609877.6 complies with section 1(2)

HEARING OFFICER R C Kennell

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## DECISION

- 1 This application constitutes the national phase in the UK of international application no. PCT/ US2004/ 036125 which was filed on 28 October 2004, claiming a priority of 11 November 2003 from an earlier US application. It was published under serial no. WO2005 / 050351 on 2 June 2005 and was reprinted under serial no. GB 2 423 610 A upon entry to the national phase.
- 2 Despite amendment of the claims during 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 30 July 2008, other outstanding objections including lack of inventive step having been deferred to await the outcome of the hearing. The applicant was represented by its patent attorney Mr Keith Beresford, assisted by Mr Min Xu, both of Beresford & Co. For the Office, Mr Ben Widdows assisted via videolink in the absence of the examiner who had been dealing with the application up to that point.
- 3 In the correspondence Mr Beresford had drawn attention to a co-pending application 0609878.4 for which a patent (GB 2425197 B) had been granted for different aspects of the same disclosure. I have not considered this application; as I understood it, Mr Beresford mentioned it purely to demonstrate that there was patentable subject-matter in the present application. There was no dispute at the hearing that I should determine the present case on its own merits.

### The invention

- 4 The invention is concerned with establishing and managing relationships between brokers and traders in an electronic trading network so that more than one broker can trade on behalf of a single trader, and messages regarding

trading orders can be sent from the trading system to a particular trader and the brokers acting on his behalf. In the invention as now claimed a proxy server routes trading messages and commands between user terminals (both brokers and traders) and the trading system and communication links are established between the proxy server and the trading system which are each specific to trading data relating a particular trader. As Mr Beresford explained at the hearing, the proxy server can and in practice probably will be implemented by programming a conventional computer with a program which carries out the proxy functions.

- 5 The claims were originally to methods and systems for managing messages in a trading network, but have now been restricted to apparatus for electronic trading. There is one independent claim, claim 1, and I reproduce in the Annex to this decision a helpful tabulation of this claim which Mr Beresford included in his skeleton argument for the hearing. In this, the wording of the claim is reproduced in Column A, whilst Column B sets out the corresponding underlying allegedly technical features on which Mr Beresford founded his argument that the invention was patentable.

### **The law and its interpretation**

- 6 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.”

- 7 It is not disputed that the assessment of patentability under section 1(2) is now governed by the judgment of the Court of Appeal in *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan’s Application* [2006] EWCA Civ 1371, [2007] RPC 7 (hereinafter “*Aerotel*”). In this case the court reviewed the case law on the interpretation of section 1(2) and approved a 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.

8 The operation of the test is explained at paragraphs 40-48 of the judgment. In particular:

- Paragraphs 41 and 47 explain that the test is consistent with the principles established in previous decisions of the Court of Appeal, and is a re-formulation in a different order of the approach in *Fujitsu*<sup>1</sup>, asking the same questions but in a different order.
- Paragraph 43 states that identification of the contribution 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.
- Paragraph 44 accepts that at the application stage the Office will generally have to accept what the inventor alleges to be his contribution, but that in the end the test must be what contribution has actually been made.
- Paragraph 45 explains that the third step – whether the contribution is “solely” of excluded matter - is merely an expression of the “as such” qualification of section 1(2).
- Paragraph 46 explains that, although the fourth step of checking whether the contribution is technical may not be necessary because the third step should have covered the point, it is a necessary check if *Merrill Lynch*<sup>2</sup> is to be followed.

### **Argument and analysis**

9 In his report of 14 February 2008, the examiner maintained that the invention was excluded under section 1(2)(c) as both a business method and a computer program. As he saw it, the contribution of the invention as a matter of substance lay in the assignment of communication links and the routing of messages in a trading network so that for each trader the apparatus assigned the same communication link to any party trading on its behalf. Even though the invention was claimed as apparatus and had technical character, he did not think that it solved any technical problems or provided a technical solution. Thus the assignment of links was dictated by an underlying policy that the network should use the same communication link for each trader and the routing of messages was a programming matter not dictated by underlying technical issues. I think this is essentially the same point that the examiner made in his first examination report, that the invention was a conventional apparatus programmed to manipulate trading messages in a way dictated by an underlying business relationship between brokers and traders.

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<sup>1</sup> Fujitsu Ltd's Application [1997] RPC 608

<sup>2</sup> Merrill Lynch's Application [1989] RPC 561

- 10 Mr Beresford on the other hand took the view that the routing of certain defined messages through a common communication channel was a network issue, not a trading policy; the invention provided a technical solution to the problem of devising a network in which messages related to a given user could be efficiently routed between a computer executing trading commands and each of a plurality of user terminals. I will consider his argument in detail using the four-step *Aerotel* approach.

#### Step 1 – construction of the claims

- 11 There was no dispute as to the construction of the claims, and I do not think that it raises any problems. I accept Mr Beresford's view that the subject-matter claimed is a computer network in the form of a number of computers interconnected by a communication network and intended for trading, having a structure and functionality which includes a proxy server operable to control the routing of commands from a plurality of user terminals to a trading system which executes the commands.

#### Step 2 – the contribution of the invention

- 12 Mr Beresford argued that claim 1 provided a contribution to computer networks for trading through the addition of a proxy server and the functionality in sections (a), (b) and (c) indicated in the tabulated version of the claim in the Annex. As he stated in his skeleton argument:

“This contribution can be expressed as a computer network in which commands related to a given user can be efficiently routed from any of a plurality of user terminals (the broker terminals) to the computer apparatus (the trading system) for execution therein by the provision in the network of:

- (i) a proxy server;
- (ii) functionality in at least some of the user terminals (the broker terminals) whereby those terminals can generate and transmit to the network two types of message (or command),
  - (a) the first for causing the proxy server to carry out a routing process and
  - (b) the second comprising commands for execution by the computer apparatus (the trading system);
- (iii) functionality in the proxy server whereby,
  - (a) in response to a message (or command) of the first type from one of the user terminals, the proxy executes a routing process in which it assigns, for a given user, a unique communication link or channel between itself and the

computer apparatus (trading system), and

- (b) the proxy thereafter routes all messages (or commands) of the second type related to the given user to the computer apparatus (trading system) via the assigned unique communication link or channel regardless of the user terminal from which they originate.”;

he also drew my attention to the further routing features in claim 4 whereby trading data could be routed from the trading system via the proxy server back to the user terminals.

- 13 I do not think this entirely correct in view of the way the contribution is defined in paragraph 43 of *Aerotel* (see above). In my view, having regard to both the description in the specification and the prior art cited in the international search report, what claims 1 and 4 add to human knowledge is the provision in an electronic trading network of functionality by which a user terminal can command the assignment of a communication link or channel to the trading system which is unique to a particular user, all messages or commands thereafter relating to that user (including messages back from the trading system to the user terminals) being routed through that channel irrespective of the user terminals from which they operate. The main difference is that my formulation of the contribution does not specifically mention the proxy server; I consider below the role that this plays in relation to the invention.
- 14 In regard to the underlined wording, I should mention that Mr Beresford had previously sought to amend the claims to avoid all reference to business related features, arguing in his letter of 11 June 2007 that the invention was of general application and could be applied for example to the control of a power station or a chemical processing plant. The examiner however objected that the amendment added subject-matter because there was no disclosure in the originally-filed application of any wider applicability beyond trading. Although Mr Beresford did not accept the examiner's arguments, he nevertheless amended the claims to their present form. As I have mentioned, he maintained that there was a technical character to the functionality identified above, as illustrated in column B of the table in the Annex.
- 15 I do not think that the limitation of the claims to business features can be ignored when determining the contribution. I do not consider this limitation to be in any way an arbitrary choice on the part of the applicant: the specification is concerned wholly with managing the relationships between traders and brokers in an electronic trading network. I accept that it may be possible, having regard to the features in column B, to adapt the network to other uses, but I do not think this is decisive of what the contribution of the invention is.

### Step 3 – whether the contribution relates solely to excluded matter

#### *Applicant's arguments*

- 16 Mr Beresford submitted that references in the claims to business features and

users such as "trading", "traders" and "brokers" did not necessarily mean that the contribution was solely in excluded matter. As he reminded me *Aerotel* (discussed more fully below) upheld the patentability of a claim to a telephone system which effectively recited the business process underlying the invention, and that without those features the claim as a whole would be directed to a purposeless and meaningless combination of components having no technical interaction between them.

- 17 Mr Beresford sought to reinforce his argument that the contribution did not relate solely to excluded matter by reference to three approaches which he discerned in the case law to date. His first approach was to look at the nature of the problem solved by the invention. On this Mr Beresford took me to *RiM v Inpro* [2006] EWHC 70 (Pat), [2006] RPC 20, where Pumfrey J (as he then was) stated at paragraph 184:

"The claims of the patent are all concerned with how to transmit data between a field computer and a proxy server to enable a field computer, inadequate in processing and display power, to browse the web and produce a result substantially better than its modest abilities would indicate."

and to his later judgment in *Cappellini/Bloomberg LP* [2007] EWHC 476 (Pat) at paragraph 11 emphasising the physical nature of the problems of bandwidth restriction which the RiM invention was intended to overcome.

- 18 Mr Beresford thought in the present case the invention was solving what was essentially a network or routing problem rather than a business problem, because the problem could be expressed without reference to any business activity. Reminding me of *Raytheon Co* [2007] EWHC 1230 (Pat), [2008] RPC 3 in which Kitchen J held at paragraph 35 that if there was any aspect of the contribution which did not fall within any of the exclusions then the invention would not relate to any excluded matter as such, Mr Beresford argued that the features of claims 1 and 4 relating to the proxy server, its functionality and the functionality of the user terminals in the assigning of communication links and routing of messages were an aspect of the claimed subject matter which did not fall within any of the exclusions.
- 19 A second approach canvassed by Mr Beresford was to consider whether there was a new combination of hardware along the lines suggested in *Aerotel*. *Aerotel*'s invention 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 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 judgment 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. I observe that the

computer program exclusion was not specifically in issue in the Aerotel appeal.

- 20 Mr Beresford argued that the system defined in the present claims was similarly new, not merely because it was to be used in business, but because it related to the routing of commands and messages in a network system and because there was a new network (combination of hardware) arising from the inclusion of the proxy server even though that could be implemented by programmed computer.
- 21 He accepted that subsequently, in *Aerotel Ltd v WaveCrest* [2008] EWHC 1180 (Pat), the court found Aerotel's claim to be invalid because once prior art was considered the physical combination of hardware with a special exchange was not novel and the only difference between the prior art and the claim was the method of payment for telephone calls. However, Mr Beresford thought this did not detract from his argument because, so far as presently known, the claimed system was a new network. Nor did he think that it negated the reasoning of the Court of Appeal underlying its findings on the Aerotel appeal.
- 22 Mr Beresford's third approach, deriving from the judgment in *IGT/Acres Gaming Inc* [2008] EWHC 568 (Ch) at paragraphs 29-30 was to ask whether the concept underlying the claim could be defined without reference to any business method as such; as the Deputy Judge said at paragraph 30:

"I have stated the concept without reference to any business method as such, and if that concept is indeed new and not obvious, the applicants would be entitled to patent it."

Mr Beresford accordingly directed me to the underlying network features in column B of the tabulated claim to show that the technical network features and the functionality underlying claim 1 could indeed be expressed without reference to any business process.

- 23 Mr Beresford further submitted that it would suffice if any one of these three approaches enabled the third step to be passed, and that it was not necessary for them all to come to the same conclusion. For this proposition he drew support from *IGT* [2007] EWHC 1341 (Ch), where, referring to *Aerotel*, Warren J stated at paragraph 36 stated (emphasis added):

"Mr Birss says that the absence of a "special exchange" is the short answer to the case. It is an answer, of course, to the case in so far as it is based on the existence of a "special exchange". But it seems to me that it is necessary to go further because, even in the absence of any "special exchange" there may be a contribution, albeit a computer program, which makes a technical contribution to the known art and which is not exclusively in the excluded territory of rule, scheme or method for playing games."

- 24 The above arguments are directed principally to the business methods exclusion. At the hearing I asked Mr Beresford if he wished to make any further points on the computer program exclusion. He emphasised that just because the claimed invention was to be implemented by means of a computer program did not

necessarily mean that it was a computer program as such, a point which I note is made in *Aerotel* at paragraph 22.

- 25 Mr Beresford mentioned the EPO *Pensions Benefits* case (T 0931/95) in passing at the hearing, but as I understood it he was not disputing the conclusion in *Aerotel* (see paragraphs 25-29 thereof) that its reasoning was not to be followed. I do not therefore think that I need to consider *Pensions Benefits* in reaching my decision.

#### *General considerations*

- 26 Before I consider Mr Beresford's arguments on the case law, I will set out the general approach which I believe I should follow. The courts have given a number of judgments on the application of the *Aerotel* test and I do not think that they are altogether consistent with each other as to the relevance of a technical effect or whether section 1(2) is about anything more than the width of the claims. Indeed the decision in *Symbian Ltd* [2008] EWHC 518 (Pat) is currently under appeal on the former point. However, the courts have frequently made it clear that cases on section 1(2) are to be decided on their own merits rather than by seeking analogies with earlier decisions on different facts.
- 27 I do not therefore think that I should approach the matter on the basis of a checklist of comparisons with earlier cases. At the hearing I therefore probed Mr Beresford's view that it would suffice for one of his three approaches to succeed even if the others failed. However, as I understood it Mr Beresford was really making a slightly different point – with which I agree – that I should consider all these approaches before concluding that the contribution was excluded. I have no quarrel with the specific and perhaps narrower conclusion which he drew from *IGT*, namely that *Aerotel* did not mean that the only basis upon which there might be patentability was where there is new equipment, and that an invention which made a technical contribution to the known art and which was not exclusively in excluded matter might be patentable even though implemented by computer program. As I have explained, that much seems clear from paragraph 22 of *Aerotel*.
- 28 I agree with Mr Beresford that the presence of business features in the claim does not necessarily mean that the contribution is excluded. Equally however I do not think that the fact that apparently technical features can be distilled from the claim in the manner of column B in the annexed table necessarily means the contribution is non-excluded - although I accept that it may in some cases highlight that it has a technical nature which will enable it to pass the *Aerotel* test (see e.g. my decision in BL O/226/07 where Mr Beresford succeeded on a similar argument).
- 29 It seems to me that a similar point arises in respect of the decision in *IGT/Acres Gaming* where the Deputy Judge held that the contribution was not excluded because it could be defined without reference to business features. That approach seems right to me, so long as the definition does not simply result from a manipulation of the wording of the claim to eliminate excluded subject-matter and does actually pinpoint what the contribution is as a matter of substance.

- 30 Ultimately it is the judgment in *Aerotel* to which I must turn. Having defined the contribution, the question is straightforward – does it relate solely to excluded matter? The various approaches suggested by Mr Beresford will assist me, but they are not individually decisive of the matter.

### *Analysis*

- 31 As I have explained above, Mr Beresford did not accept that the invention was simply the implementation of a trading policy or choice to route all communications relating to a particular trader through a common link, but was a practical and efficient way of routing commands between a trading system and a number of user terminals. As he explained it at the hearing:

“It is sorting out that things coming from a number of channels are actually related to the same trader and one can imagine that the trading system will be able to cope more effectively with that. It is as if your postman delivers, in the prior art, all of the mail through one door and then people on the other side of the door have to sort out who it is for. It is distinct from delivering the mail for individual people through different doors.”

- 32 Whilst I can accept that there are efficiencies resulting from the approach of the invention, I am not convinced that the invention is really about overcoming any technical or physical problem in known electronic trading systems akin to the way that the proxy server in *RiM v Inpro* enabled the field computer to “punch above its weight”. In my view the contribution is essentially about setting up an electronic trading network to carry out business more effectively by enabling multiple brokers to act for a single trader and messages about a particular order to be sent from the trading system to only the particular trader and the brokers acting for him, and must involve the programming of the network to provide the necessary unique communication links or channels between the user terminals and the trading system. Ignoring for the moment the role of the proxy server, I consider the contribution to be the programming of a known electronic trading system to implement a chosen business model; beyond that business model I do not think there is anything more than the computer program up and running.

- 33 However, the invention as claimed requires the addition to the network of a proxy server through which the communication links or channels are established, and I must consider whether this is sufficient to provide a new network in the same way that the special exchange in *Aerotel* provided a new combination of hardware which could not be regarded simply as a method of doing business. I agree with Mr Beresford that the reasoning of the Court of Appeal on this point is still binding on me notwithstanding the subsequent decision of the Patents Court in *Aerotel v WaveCrest*.

- 34 I have considered this point very carefully, but in my view this is not a case where the key to the invention is the provision of an “extra piece of equipment” as stated in paragraphs 52-53 of *Aerotel*. It seems to me (distinguishing *Raytheon Co*) that the proxy server is a conventional piece of equipment which enables the contribution to be carried out, rather than constituting part of the contribution in its

own right. Using the wording of paragraph 56 of *Aerotel* I think that, in contrast to that case, the inventor is saying “use existing apparatus for my new method” rather than “create a new overall combination of apparatus using known types of apparatus”.

- 35 It therefore follows in my view that as a matter of substance, irrespective of the form of the claims, the contribution relates solely to a business method and a computer program. It therefore fails the third *Aerotel* step.

Step 4 – is the contribution technical in nature?

- 36 I do not think it is necessary for me to consider this any further since the third step has dealt with the point. For the reasons explained above, I do not think the contribution is technical in nature.

**Conclusion**

- 37 It follows that claims 1 and 4 are excluded under section 1(2). Having read the specification I do not think that any saving amendment is possible. I therefore refuse the application under section 18(3).

**Appeal**

- 38 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

## ANNEX TO DECISION O/254/08

	<b>Column A Language of Main Claim on File</b>	<b>Column B Underlying System Features</b>
(1)	Apparatus for electronic trading comprising a plurality of computers and a communications network interconnecting said computers, said computers including	A number of computers and a communications network interconnecting them, the computers including
(2)	at least one trading system,	a first computer apparatus capable of executing commands
(3)	a plurality of trader terminals operable by traders,	a plurality of first terminal apparatus operable by first type users
(4)	a plurality of broker terminals operable by brokers for enabling brokers to effect trading in said trading system on behalf said traders	a plurality of second terminal apparatus operable by second type users for causing the first computer apparatus to execute commands related to the first type users
(5)	and a proxy server; wherein:	a proxy computer apparatus
(a)	said broker terminals are operable for generating and transmitting to said proxy server via said communication network  (i) first messages comprising attachment requests for conditioning the proxy server for trading by the broker on behalf of traders identified in the attachment requests respectively, and  (ii) second messages comprising trading commands for effecting trading on behalf of traders identified in the second messages respectively;	the second terminal apparatus are each operable for generating and sending to the proxy computer apparatus via the communication network first and second types of command,  (i) the first type of command being for conditioning the proxy computer apparatus for the handling of the second type of command, and  (ii) the second type of command being for execution by the first computer apparatus, which commands are related to the first type user identified in the first type of command
(b)	said proxy server is operable, in response to a said first message, to perform an attachment process comprising  (i) storing connection data identifying the broker from which the first message is received and the trader identified in said first message, and (ii) assigning to said connection data a communication link between the proxy server and the trading system for the communication therebetween of data relating to the trader identified in the connection data,  wherein if any previously stored	the proxy computer apparatus, in response to a said first type of command from one of the second type users carries out a communication channel assignment process (that is a routing determination process) in which  a unique communication channel between the proxy and the first computer apparatus is assigned for second type commands related to the first type user identified in the first type of command,

	connection data identifies the same trader, the same communication link as assigned to the previously stored connection data is assigned to the new connection data, thereby to assign the same communication link to all connection data identifying the same trader and different communication links to connection data identifying different traders, identifying different traders;	
(c)	<p>said proxy server is operable, in response to a said second message, to route the trading command contained therein to the trading system via the communication link assigned to the connection data which identifies the trader identified in the respective second message,</p> <p>whereby a plurality of said brokers may simultaneously act on behalf of the same trader utilising the same communication link between the proxy server and the trading system; and</p>	<p>the proxy computer apparatus transmits, via the unique communication channel (which was assigned in the route determination process), the second type of commands related to the first user , not only when those commands originate from the particular second type user responsible for the initial communication channel assignment process</p> <p>but also when second type commands related to the first user originate from other second type users</p>
(d)	said trading system is operable for executing trading commands received from the proxy server via said assigned communication links.	the first computer apparatus executes the second type of commands related to each respective different first user received via the respective uniquely assigned communication links.

**R C KENNEL**

9 September 2008