



15 January 2021

PATENTS ACT 1977

APPLICANT Renaissance Technologies LLC

ISSUE Whether patent application GB1505456.2 complies

with Section 1(2) of the Patents Act 1977

HEARING OFFICER J Pullen

DECISION

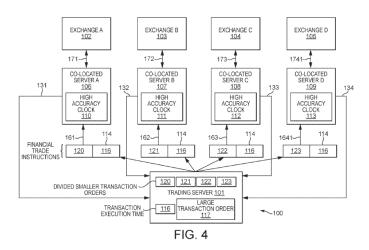
Introduction

- Patent application GB1505456.2 entitled 'System and method for executing synchronized events in multiple locations' was filed on 30 March 2015 claiming priority from an earlier US application filed on 4 August 2014. The application was published as GB2529011A on 10 February 2016.
- The search report, dated 16 September 2015, reported under Section 17(5)(b) that a search would serve no useful purpose and the examiner set out his reasoning that the claimed invention was excluded from patentability as a method of doing business and/or a computer program as such in an accompanying examination opinion. Subsequently, examination was requested and an abbreviated examination report issued on 21 January 2020 referring to the points made in the examination opinion together with an offer of a hearing. The applicant responded, via his attorney, on 21 May 2020 with arguments but the examiner remained unconvinced and the case was passed for a hearing. The examiner wrote to the applicant informing them of this and setting out their objection and response to the arguments on 3 September 2020. Skeleton arguments were filed on 28 October 2020 and my assistant contacted the attorney to request that at the hearing I be addressed on the relevance of a document that was cited against the equivalent European application.
- The matter came before me at a hearing on 4 November 2020, at which the applicant was represented by Mr David Williams of Page, White & Farrer. At the hearing Mr Williams indicated that the applicant wished to file amended claims, removing claims 40 to 44 from the claim set, and he asked that I base this decision on the proposed new claim set which he duly filed following the hearing. I have complied with this request.
- The matter before me is whether the claimed invention is excluded as a method for doing business and/or a program for a computer as such. I note the examiner has not performed a search and has deferred completion of the examination, therefore, if

I find the claimed invention allowable then it will be necessary for me to remit the application to the examiner for further processing.

The invention

- The invention relates to a computer-based financial trading systems and trading 5 methods capable of executing time synchronized trades in multiple exchanges. Problems are said to arise in existing financial trading systems when a trader places a large order for a financial instrument that cannot be filled cost-effectively by a single financial exchange so it is divided into smaller orders that are then routed to multiple, different financial exchanges. Although these smaller orders are transmitted at the same time from the trader's system, they may arrive at their destination exchanges faster or slower than the other smaller orders because of the different distances to the different exchanges and the different latencies and congestion of the communication links/networks used. When the smaller orders arrive at faster exchanges, institutions that implement high frequency trading can detect them and take advantage of slower exchanges by purchasing the financial instruments at the slower exchanges and selling those instruments at a higher price to the trader when the smaller orders arrive. The application does not go into the details of the causes of the latencies and congestion, nor does it explain how the institutions that implement high frequency trading avoid them (as they must to gain advantage).
- The invention aims to address the problems by providing a plurality of servers (106-109) co-located on the same site or near the respective financial exchanges (102-105). The method sends financial trade instructions (114) containing the smaller orders (120-123) with an execution time (116) from a trading server (101) to the co-located servers to be submitted to the financial exchange at the execution time whereby the orders are received at the exchanges substantially simultaneously.



- The claim set upon which this decision is based, as amended 4 November 2020, comprises five independent claims: claims 1, 26 and 35 to computer-based methods and claims 11 and 21 to computer-based systems which relate to the same inventive concept. At the hearing Mr Williams accepted that they will stand or fall together. Independent claims 1 and 11 read:
 - 1. A computer-based method configured and adapted to execute synchronized

financial trading in an electronic trading environment that includes a plurality of financial exchanges, the method comprising acts of:

storing, by a trading server, a large transaction order;

dividing, by the trading server, the large transaction order into a plurality of smaller transaction orders;

determining, by the trading server, a transaction execution time at which the plurality of smaller transaction orders are to be submitted for execution;

generating, by the trading server, a plurality of financial trade instructions, each of the plurality of financial trade instructions containing a respective one of the smaller transaction orders and the transaction execution time:

transmitting, by the trading server, each of the plurality of financial trade instructions to a respective one of a plurality of co-located servers, the plurality of co-located servers being respectively co-located at financial exchanges where respective smaller transaction orders are to be executed;

storing, by each of the plurality of co-located servers, the respective smaller transaction order and the transaction execution time contained in the transmitted respective financial trade instruction;

determining, by each of the plurality of co-located servers, a current time; and

comparing, by each of the plurality of co-located servers, the determined current time and the stored transaction execution time, and when the determined current time is equal to the stored transaction execution time, each of the plurality of co-located servers submitting the stored smaller transaction order to the financial exchange where it is co-located, whereby the plurality of smaller transaction orders are received at their respective exchanges substantially simultaneously.

11. A computer-based system for executing synchronized financial trading in an electronic trading environment that includes a plurality of financial exchanges comprising:

control circuitry that controls operation of the system;

a plurality of co-located servers with each being co-located at a respective one of the plurality of financial exchanges and being connected to the respective one of the plurality of financial exchanges;

a trading server operated by a trading entity, the trading server being connected to the plurality of co-located servers; and

wherein the control circuitry is operable to:

store, by the trading server, a large transaction order;

divide, by the trading server, the large transaction order into a plurality of smaller transaction orders:

determine, by the trading server, a transaction execution time at which the plurality of smaller transaction orders are to be submitted for execution;

generate, by the trading server, a plurality of financial trade instructions, each of the plurality of financial trade instructions containing a respective one of the smaller transaction orders and the transaction execution time;

transmit, by the trading server, each of the plurality of financial trade instructions to a respective one of the plurality of co-located servers:

store, by each of the plurality of co-located servers, the respective smaller transaction order and the transaction execution time contained in the transmitted respective financial trade instruction:

determine, by each of the plurality of co-located servers, a current time;

compare, by each of the plurality of co-located servers, the determined current time and the stored transaction execution time, and when the determined current time is equal to the stored transaction execution time, each of the plurality of co-located servers submits the stored smaller transaction order to the financial exchange where it is co-located, whereby the plurality of smaller transaction orders are received at their respective exchanges substantially simultaneously.

8 Claim 21 provides a system with a memory that includes instructions for operating the system described above. Claim 26 is directed to the method performed at each of the co-located servers and claim 35 to the method performed at the trading server.

The Law

- The examiner objected that the invention is excluded from being patented as a method for doing business and a program for a computer. The relevant section of the Act is S 1(2), the most relevant provisions of which are shown below with my 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) ...;
 - (b) ...;
 - (c) a... method for... doing business, or a program for a computer;
 - (d) ...;

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 Court of Appeal has said that the issue of whether an invention relates to subject matter excluded by Section 1(2) must be decided by answering the question of whether the invention reveals a technical contribution to the state of the art. The Court of Appeal in *Aerotel/Macrossan*¹ set out the following four-step approach to help decide the issue:
 - (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.
- The operation of the approach is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is an exercise in

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¹ Aerotel Ltd v Telco Holdings Ltd & Ors Rev 1 [2007] RPC 7

judgment involving the problem said to be solved, how the invention works and what its advantages are; essentially, what it is the inventor has really added to human knowledge, looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution. The Court acknowledged that, for a patent application (as opposed to a granted patent), it may only be possible to identify the alleged, and not the actual, contribution in step 2.

- In *Symbian*² the Court of Appeal reaffirmed the Aerotel approach while considering a question of "technical contribution" as it related to computer programs emphasising 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".
- The case law on computer implemented inventions was further elaborated in AT&T/CVON³ which provided five helpful signposts to apply when considering whether a computer program makes a relevant technical contribution. In HTC v Apple⁴, Lewison LJ reconsidered the fourth of these signposts and felt that it expressed too restrictively. The signposts are:
 - i. whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;
 - ii. whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run;
 - iii. whether the claimed technical effect results in the computer being made to operate in a new way;
 - iv. whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer;
 - v. whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.
- It is important to stress that these signposts are just that. They are not barriers or hurdles that need to be individually or collectively overcome by the applicant. They are a non-exhaustive list of some of the factors that can indicate, in some cases, whether a particular contribution may be technical.

Assessment

(1) Properly construe the claim

The examiner, Mr Williams and I agree that there is no difficulty in construing the claims for the purposes of this approach.

(2) Identify the contribution

² Symbian Ltd's Application [2009] RPC 1

³ AT&T Knowledge Ventures/Cvon Innovations v Comptroller General of Patents [2009] EWHC 343 (Pat)

⁴ HTC v Apple [2013] EWCA Civ 451

- In the examination opinion of 16 September 2015, the examiner set out that, in their view, the hardware is a conventional arrangement of networked computers. They go on to say that the contribution resides in the functionality and method performed by the arrangement. That method involves dividing a large transaction into plural smaller transactions and sending each of the smaller transactions, along with an execution time, to one of a plurality of servers co-located at a plurality of financial exchanges to be submitted to the exchange such that they are received substantially simultaneously. This has the advantage that high frequency traders will not be able to take advantage of different time delays and latencies to predict a non-high frequency trader's purchasing behaviour.
- 17 The attorney's letter of 21 May 2020 suggests that the arrangement of co-located servers between the central server and the exchanges is not conventional, and this forms part of the contribution stating:

"It is both the novel arrangement of the servers and the functionality afforded by the novel arrangement that provides the technical contribution of the present invention, i.e. the inclusion of the execution time in the instructions sent to the co-located servers, comparing the execution time to the current time in the colocated servers, and substantially simultaneous transmission of the instructions to the respective exchanges."

- Whilst no search has been performed on this application several documents that have been cited against equivalent applications are pertinent to establishing the alleged contribution. Mr Williams brought US 2010/0332650 A1 (Aisen) to the examiner's attention in their letter of 21 May 2020. In turn the examiner referred to US 2011/0196778 A1 (Vinokour) in their letter of 3 September 2020 to re-iterate that in their view the contribution lies in the functionality or method performed by the hardware, not in the hardware itself. Prior to the hearing I asked my assistant, Mr Dowell, to contact Mr Williams to request that I also be addressed on US 2013/0110700 A1 (Schluetter).
- In the skeleton arguments of 28 October 2020 Mr Williams says that the applicant's position is that the computer system of the claims is not known, cannot be considered conventional and highlights differences between US 2010/0332650 A1, US 2011/0196778 A1 and claim 1 as evidence of this. He does accept that examiners are entitled to use common sense and experience to assess the nature of the contribution, and that this may mean a formal search is not necessary. Mr Williams then claims that the assessment of the contribution in the pre-hearing report does not consider the whole contribution of the independent claims and ignores the proper context and effect of the invention. He goes on to propose that the contribution of the invention must be understood in the context of the secondary servers being co-located with a respective plurality of exchanges, and the problem which is addressed which is related to the communication between a primary server and those exchanges, for which the co-located servers are newly provided.
- At the hearing Mr Williams reiterated that the contribution was a new computer system and discussed each of these documents in turn drawing distinctions between the disclosures therein and the invention claimed in claim 1. He emphasised that claim 1 required a trading server, a plurality of financial exchanges and a plurality of

servers co-located with those exchanges configured to receive instructions to execute trades including timing data. Of the documents he said:

- i) US 2010/0332650 A1 (Aisen), best illustrated in figure 3, shows three financial exchanges 106 but only a single server 304 co-located with the first exchange and no trading server; whilst it is drawn to a similar problem it provides a different system and methodology as a solution.
- ii) US 2011/0196778 A1 (Vinokour) showed, in figure 1, a trading server 110 and plurality of exchanges 116 but not a plurality of co-located servers. Again, Mr Williams asserts that this disclosure is of a different system and methodology
- iii) US 2013/0110700 A1 (Schluetter) describes a system with a single exchange 10 which includes a plurality of communication servers 18, 26 so again is to a different system and methodology to that in claim 1.
- 21 From my analysis US 2013/0110700 A1 (Schluetter) shows, in general terms, a system with a first computer (host system 10) which sends a message with contents and timing data to a plurality of second computers (local communication servers 38, 46) which are associated with third computers (client devices) substantially simultaneously at a time specified in the timing data. In similarly general terms this application relates to a system with a first computer (trading server) which sends a message with contents and timing data to a plurality of second computers (colocated servers) to be sent on to one or more associated third computers (financial exchanges) substantially simultaneously at a time specified in the timing data.
- From my analysis of US 2011/0196778 (Vinokour) figure 1 is an illustration of the prior art. The description in paragraphs [0068] and [0069] discloses that it is known to co-locate a trading server with an exchange server. Figure 4 then shows an embodiment which includes a plurality of financial exchanges 116 and a plurality of servers 110 co-located with those exchanges together with several other servers, platforms and systems.
- At the hearing I asked Mr Williams what he thought the contribution was in terms of the *Aerotel* test. He responded that it was the provision of a new computer system comprising a trading server and a plurality of servers each co-located with a plurality of financial exchanges provided to solve a particular technical problem. I asked what the particular technical problem was. Mr Williams said that this was the issues concerning latency and time lag within the network between the trading server and some of financial exchanges. He said that the different delays to the multiple smaller transactions in prior art trading systems meant that some would arrive at an exchange earlier than others which can then be observed by others. He then reiterated the application's description of how the current trading system improves on the approaches taken in some prior art trading systems to allow the transactions to be applied to different exchanges substantially simultaneously by attributing timing control information to transactions. Mr Williams emphasised that the newly introduced co-located servers allow the implementation of the solution.
- 24 Ultimately Mr Williams's position appears to be that the contribution is the inventive concept of the claim. It is trite law that I must not eliminate everything in the claim that is known to arrive at that which is unknown, and then to conclude that the unknown part must be the contribution. The question before me is not whether the

- claims are novel and involve an inventive step, otherwise any sufficiently narrowly claimed method implemented on one or more computers would also be patentable.
- As set out above, *Aerotel* makes clear that identifying the contribution is an exercise in judgment involving the problem said to be solved, how the invention works and what its advantages are; essentially, what it is the inventor has really added to human knowledge, looking at substance, not form. If it was intended that the contribution should be the same as the inventive concept then step two of the four step approach would have used that terminology and not have provided additional guidance as to how to identify the contribution.
- Considering the guidance of *Aerotel*, the primary problem solved by the invention is that of cost-effectively fulfilling large orders on financial exchanges. When using prior art trading systems the proposed solution of dividing a large order into several smaller orders and routing these to different exchanges gives rise to further problems due to the actions of high-frequency traders which is facilitated, in part, by delays between the sender and some exchanges. The invention addresses these further problems by sending the smaller orders to computers associated with each financial exchange and delaying all the smaller orders until a predetermined execution time. The advantage of the proposed solution is that it may be more cost-effective to place orders in this way than to place a single large order or multiple smaller orders with delays in communicating with some exchanges. I emphasise may because I do not believe it would necessarily be so in all circumstances.
- The application describes a trading system which uses conventional computers connected via a conventional network and uses this arrangement to perform the method described. Whilst the particular arrangement of computers involved in the system and method may not have been used in previous trading systems, the computers, and their arrangement, are conventional per se. I believe that it is conventional to locate trading servers near exchanges to reduce communication times and gain a financial advantage. Even if that is not the case, I do not regard the physical proximity of the servers and exchanges, in itself, as giving rise to a contribution as it is common knowledge that reducing the physical distance will reduce the time lag/delay. Providing timing data as part of instructions to distributed servers so that they simultaneously execute code is known as illustrated in US 2013/0110700 A1 (Schluetter) figure 2 of which shows a packet 64 with timing data 68, client device information 66 and data 70.
- When considering all of these factors I believe what has been added to the sum of human knowledge is the overall trading system, rather than a computer system per se. Therefore, I consider the alleged contribution to be:

A trading system to cost-effectively fulfill large orders in an electronic trading environment that includes a plurality of financial exchanges by:
dividing a large order into a plurality of smaller orders;
transmitting a plurality of trade instructions each containing one of the smaller orders and a transaction execution time to a plurality of servers each associated with one of the financial exchanges;
receiving and storing the trade instructions at the plurality of servers; and,

submitting the smaller orders to the associated exchange when the current time is the transaction execution time, whereby the smaller orders are placed substantially simultaneously.

- (3) Ask whether it falls solely within the excluded subject matter and (4) Check whether the actual or alleged contribution is actually technical in nature
- 29 I will consider steps (3) and (4) together.

Business method

- In the letter of 3 September 2020, the examiner says that the alleged contribution concerns financial transactions and is addressed to the problem of smaller order transaction requests being executed at different locations at different times and therefore allowing high frequency traders to gain an advantage which is a business problem. They say that sending of a transaction execution time in the instructions concerning each smaller transaction order so they are received substantially simultaneously amounts to no more than an administrative step regarding the timing of transactions, which falls solely within the business method exclusion. They go on to acknowledge that the underlying causes for the identified problem network congestion and latency are real-world technical problems. However, they conclude that the alleged contribution does not directly address these technical problems instead circumventing them by delaying the transactions at the respective financial exchanges so that congestion and latency do not pose an issue.
- 31 Earlier, in the examination opinion of 16 September 2015, the examiner quotes Justice Birss in *Halliburton Energy Services Inc*⁵ at paragraph 35 in support of their position that computer systems which implement a better method of doing business are not patentable:

"The business method cases can be tricky to analyse by just asking whether the invention has a technical effect or makes a technical contribution. The reason is that computers are self-evidently technical in nature. Thus, when a business method is implemented on a computer, the patentee has a rich vein of arguments to deploy in seeking to contend that his invention gives rise to a technical effect or makes a technical contribution. For example, the computer is said to be a faster, more efficient computerized bookkeeper than before and surely, says the patentee, that is a technical effect or technical advance. And so, it is, in a way, but the law has resolutely sought to hold the line at excluding such things from patents. That means that some apparently technical effects do not always count. So a computer programmed to be a better computer is patentable (Symbian) but as Fox LJ pointed out in relation to the business method exclusion in Merrill Lynch, the fact that the method of doing business may be an improvement on previous methods is immaterial because the business method exclusion is generic".

In the letter of 21 May 2020, the applicant submits that the contribution is not excluded from patentability as a business method suggesting that this objection is drawn from the field of implementation, rather than an understanding of the

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⁵ Halliburton Energy Services Inc [2011] EWHC 2508 (Pat)

contribution of the claimed invention. They assert that the fact that the invention is a financial system and gives advantages in such a system which manifest as financial system advantages, is irrelevant. The claimed invention does in fact provide a technical contribution, solving a technical problem with a technical solution, regardless of any additional benefit that may be achieved when it is implemented.

- 33 At the hearing and in the skeleton arguments of 28 October 2020 Mr Williams made no reference to the question of whether the contribution concerns a business method as such other than as implied through his suggestion that it is not excluded.
- The business method exclusion is generic. Far from being irrelevant, that it is a financial system and gives financial system advantages, is the critical point. Even if the contribution can be regarded as producing a new result in the form of an improvement over prior art trading systems it is still a trading system. It is a system for doing a specific business, trading in securities, which is rooted in the method of doing that business. I find the application to be excluded from being patented under Section 1(2) as a method for doing business as such.

Computer program

- In the letter of 3 September 2020, the examiner, having concluded that the invention defined in claims 1 to 39 is a business method as such, only discusses the question of whether the invention is a computer program as such in relation to claim 40 which has now been removed. However, at the hearing Mr Williams discussed this in relation to the invention of claims 1 to 39 concluding that the invention was more than a computer program. For completeness I will too.
- The claims define a computer-based system and method which would, as a matter of practical reality, be implemented by computer programs running on conventional hardware. I shall consider whether the computer programs make a relevant technical contribution with reference to the five signposts from AT&T/CVON and HTC v Apple.
 - i. whether the claimed technical effect has a technical effect on a process which is carried on outside the computer
- The examiner's view is that there is no technical effect on a process outside the computing arrangement, and so the application does not meet this signpost. Mr Williams disagreed in his letters pointing to the computers involved as providing an effect through their interactions but at the hearing conceded there wasn't an effect outside of the computing arrangement and didn't seek to rely on this signpost. I agree; the first signpost does not assist the applicant. He went on to emphasise that, in his opinion, it is a computing arrangement, not individual computers, that should be considered for all the subsequent signposts.
 - ii. whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run
 - iii. whether the claimed technical effect results in the computer being made to operate in a new way

iv. whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer

- In the pre-hearing report of 3 September 2020 the examiner states that signposts (ii), (iii) and (iv) concern contributions which address the fundamental workings of a computer arrangement and that there is no basis in the application as filed that the invention addresses a problem at the architecture/hardware level of a computer, causes the computer to operate in a new way, or is a 'better' computer.
- At the hearing Mr Williams asserted that signpost (ii) was met because new physical devices needed to be provided co-located with financial exchanges and because of the need to look up time to decide when to submit transactions. Whilst that may be so the contribution relates to a trading system and the operations those computers are configured to perform so any effect is not produced irrespective of the data being processed; it is restricted to trading instructions in trading system. Locating computers near exchanges is not a new architecture in the relevant sense. This signpost does not help the applicant.
- 40 Mr Williams also proposed that signpost (iii) was relevant to the application as the claims are drawn to a new computer system, not just a new way of operating an existing computer system, implementing a solution which has not been implemented before. It does this, he said, using timing instructions added to the smaller orders by the trading server and sent to the newly placed co-located servers so that they can be delivered simultaneously to exchanges which he proposed demonstrated that the claimed invention operated in a new way compared to prior art trading systems. To my mind the key point here is that the contribution is a new trading system which operates in a new way compared to other trading systems; the contribution is not a new computer arrangement per se. Signpost (iii) also does not assist the applicant.
- 41 Mr Williams went on to say, in relation to signpost (iv), that the system is better because it avoids the problems outlined with prior art systems referred to in the application. It avoids using a delay circuit to mimic transmission delays or timing the sending of messages to attempt to ensure they arrive at different exchanges at the same time. He said that it is therefore more reliable because there is no need to estimate delays which might change with environmental or operating conditions, traffic and network/exchange upgrades. I have no doubt that the proposed trading system is a better trading system than those that went before but it is not a better computer, or computer arrangement, in the sense of running more efficiently and effectively as a computer. Signpost (iv) does not assist the applicant.

v. whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented

The examiner acknowledges that the problems of network congestion and latency are technical in nature in the letter of 3 September 2020 but concludes that they remain in the system and have been circumvented rather than overcome so signpost (v) is not met.

- The skeleton arguments sought to draw a difference between caselaw which provides examples of circumventing the relevant problem and their invention which they assert solves the problem. At the hearing Mr Williams drew upon the problems of network congestion and latency and said that the arrangement of computers and timing messages in the application addressed rather than circumventing that problem. He reiterated that it addresses the problem using the arrangement of colocated servers substantially simultaneously submitting orders to the exchanges. The result being that any time lag in the network was rendered moot. Mr Williams also highlighted that the smaller orders are unchanged to suggest that the solution addressed the problem rather than circumvent it.
- The underlying problem outlined in the application is concerned with cost-effectively fulfilling large orders on financial exchanges which is not a technical problem. The approach to solving that problem by dividing the large order into several smaller orders and routing these to different exchanges gives rise to the secondary problem that the trade might become less cost-effective through the actions of high-frequency traders. The network problems mentioned are incidental to the problems of cost-effectively fulfilling large orders on financial exchanges or caused by the actions and systems of high-frequency traders. Whether the network problems are circumvented or overcome is a matter of semantics; they are only problems in so far as they might render the trade less cost-effective which is a business problem and not a technical problem. Signpost (v) is not met.
- I find the application is also excluded from being patented under Section 1(2) as a program for a computer as such.

Conclusion

I find the application to be excluded from being patented under Section 1(2) as a method for doing business and a program for a computer as such. I therefore refuse the application under Section 18(3).

Appeal

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

J Pullen

Deputy Director, acting for the Comptroller