

12 September 2007

PATENTS ACT 1977

APPLICANT Rajesh Kapur

ISSUE Whether patent application numbers
GB0515579.1, GB0516374.6,
GB0516995.8, GB0516997.4,
GB0518016.1, GB0519238.0,
GB0519365.1 and GB0519463.4
comply with section 1

HEARING OFFICER A Bartlett

DECISION

Introduction

- 1 This decision concerns the issue of whether the above applications relate to subject matter that is excluded under section 1(2) of the Patents Act. Those applications form a series of applications filed by Mr Rajesh Kapur relating to Document Management Systems (DMS). A combined search and examination report was issued on each of the applications in which the examiner reported that the applications did not meet the requirements of the Act for a number of reasons including lack of clarity and support for the claims and the presence of numerous trade marks in the specifications. The examiner also warned of the potential for conflict between the claims of the various applications although he deferred raising a formal objection on that point pending resolution of the remaining issues. More significantly however, the examiner reported that each of the applications related to excluded subject matter.
- 2 Given the fundamental nature of the excluded matter objection, further correspondence between Mr Kapur and the examiner focused on this issue. Furthermore, given that all the applications were subject to the same excluded matter objection, the examiner suggested attention should be focused on a single application in an attempt to progress the applications efficiently. Mr Kapur helpfully agreed to this and GB0519365.1 ('365 hereafter) was identified as the most sensible candidate since that application related to the core concept underlying all the applications.
- 3 Despite numerous rounds of correspondence, which included copious argument

from Mr Kapur in support of his applications and various amendments to them, the examiner and Mr Kapur were not able to resolve this issue. The issue therefore came before me at a hearing on 4 April 2006 where discussion was predominantly focused on '365. Mr Kapur appeared in person accompanied by Dr Birbal Kapur as an observer. The examiner (Mr Steven Gross) who was then dealing with the applications also attended.

- 4 In my decision I will first focus on '365 because as Mr Kapur accepted at the hearing, my findings in relation to that application are significant to all the applications. I wish to make clear at this point however that in deciding whether the inventions defined in the remaining applications relate to excluded matter I have considered each one in detail and on its own merits. I will also focus predominantly on the independent claims of the applications, moving onto the dependent claims only when necessary. A selection of the independent claims from each application is included as an Annex to this decision.
- 5 I would add at this point that Mr Kapur has clearly invested a large amount of time and effort in his applications. He expressed his arguments passionately and coherently and has at all times tried to be helpful in arguing why his inventions are patentable. I am extremely grateful to him for that.

The Law and its interpretation

- 6 Section 1(2) of the Patents Act 1977 identifies certain types of subject matter for which patent protection is not available. The relevant parts of this section read:

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 scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;
- (d).....

but the foregoing provision shall prevent anything from being treated as an invention for the purpose of this Act only to the extent that a patent or application for a patent relates to that thing as such.

- 7 How the provisions of section 1(2) should be interpreted has been the subject of a good deal of consideration by the UK courts in recent times, including by the Court of Appeal in *Aerotel/Macrossan*¹.
- 8 In its judgment in that case, the Court of Appeal approved a new test for assessing whether an invention is excluded. There has been no dispute that that is the test I must use in deciding the present issue. That test comprises the following four steps:

(1) properly construe the claim

¹ Aerotel Ltd vs Telco Holdings Ltd & Macrossan's Patent Application [2007] RPC 7

- (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.

- 9 However, as stated in paragraphs 45 – 47 of the judgment, reconciling the new test with the earlier judgments of the Court of Appeal in *Merrill Lynch*² and *Fujitsu*³, the fourth step of checking whether the contribution is technical may not be necessary because the third step – asking whether the contribution is solely of excluded matter – should have covered that point.
- 10 I should add one further point on interpretation at this stage. The provisions of section 1(2) are designated in section 130(7) as being so framed as to have, as nearly as practicable, the same effect as the corresponding provisions of the European Patent Convention (EPC), namely Article 52. However, the decisions of the Boards of Appeal of the European Patent Office do not bind me and their persuasive effect must now be limited in view of the contradictions in the Boards' decisions highlighted by the Court of Appeal in *Aerotel/Macrossan* and the Court's express refusal to follow EPO practice.

The Applications

0519365.1

- 11 As I have said above, all the applications relate to the field of Document Management Systems. In broad terms '365 relates to a system that enables a user to retrieve versions of documents that have been subject to intentional or unintentional delete and overwrite operations. Thus when a document is deleted or overwritten it is not discarded, rather it is archived in a separate data store and data relating to the document such as its title, version, date of creation, original storage location and archive location are stored. The appropriate version of a document is then retrieved should a user wish to restore a deleted or earlier version of a document. It is worth noting that throughout the proceedings Mr Kapur has been at pains to stress that deleted documents are stored separately from overwritten documents – the two terms are not interchangeable – a point I will return to later.
- 12 At the hearing discussion centered on a set of claims filed with Mr Kapur's letter dated 30 March 2006. There has though been a good deal of further correspondence subsequent to the hearing which I need to refer to here. First, in reporting that the invention was excluded, the examiner had only referred specifically to the computer program and business method exclusions. However at the hearing there was a good deal of discussion regarding the mental act exclusion too. As this had not been referred to in detail before, I asked the examiner to provide additional information to Mr Kapur on that exclusion including

² Merrill Lynch's Application [1989] RPC 561

³ Fujitsu Limited's Application[1997] RPC 608

references to cases where that exclusion had been considered and gave Mr Kapur the opportunity to make further submissions regarding that particular exclusion. He duly provided submissions on that point in his letters dated 7, 14, 20 and 22 April 2006. Furthermore, in his letter dated 6 May 2006 and email dated 7 May 2006 Mr Kapur sought to file amended claims reflecting changes made to his parallel application to the Canadian Patent Office. Finally, Mr Kapur was given the opportunity to make further submissions when the Court of Appeal handed down its judgment in *Aertoel/Macrossan*. Mr Kapur duly replied in a letter dated 8 February 2007 but which was received in the Office on 27 February (and by fax on 2 March 2007). It is the version of the claims included in this final response that I will specifically consider in my decision.

- 13 There are 38 claims in total in that set of which 7 are independent. Claims 1 and 36 have been reproduced in the Annex.
- 14 Independent method claim 2 is of similar scope to claim 1 except that it specifies that the delete/overwrite action is intentional and that the method is performed for the purpose of archiving. Independent method claim 3 is again of similar scope to claim 1 though it contains some detail of the trigger for capturing and recording the reference information. Independent claims 35-38 are system claims which whilst they have differing levels of detail clearly relate to the same concept as the method claims. I have no doubt that they stand or fall together.

Applying the test

- 15 At paragraph 42 of its judgment in *Aerotel*, the Court of Appeal said the first step – properly construing the claim - was something that always has to be done and involves deciding what the monopoly is before going on to the question of whether it is excluded. This is an issue in the present case because identifying what the claims cover affects the categories of exclusion that are potentially relevant and whether the contribution falls solely within those categories. Ultimately however I do not feel it is something that affects the end result.
- 16 The problem I have in construing the claims is whether they are limited to implementation via a computer or whether they also extend to manual implementation - for example in a conventional library. Mr Kapur has argued the latter interpretation - that the claims are not limited to computer implementation. He says that the invention is more widely applicable than that and thus cannot be excluded as a program for a computer as such. In support of his argument, he points to the fact that none of the independent claims mention the use of any piece of computing hardware. He says that any reference to databases, filestores, delete or overwrite functions, access preservation tables, timestamps, system tables and the like could equally well apply to a manual system as to a computer implemented system.
- 17 However, the description as originally filed is exclusively concerned with implementation via a computer. There is no disclosure whatsoever of the invention being implemented as a manual system. In fact, the specification goes into considerable detail as to the particular software that could be used to implement it: it outlines how the data storage and retrieval functions can be

executed in Oracle^{RTM} or SQL^{RTM} software and that Documentum^{RTM} is used as the document management system. Moreover the description also includes a good deal of programming code through which the particular functionality is provided. Given this level of detail of the computerized implementation it is somewhat surprising that there is no mention of manual implementation if that also formed part of the invention. Human involvement is mentioned (on pages 9 and 10) but only in the context of a user of a computerised system being supplied with information on various versions of documents that have been archived so that he can select and restore the particular one of interest to him. There is no hint that the invention can be implemented solely as a manual system. Furthermore, claim 18 as originally filed uses precisely the same terminology for systems, databases, filestores and the like as the other independent claims but refers to reversing previous changes via SQL commands and is thus clearly a computer implementation. Finally independent claims 1 and 2 both refer to the recycling operation being carried out “automatically”.

- 18 The approach to be adopted in construing claims is as set out by the House of Lords in its decision in *Kirin-Amgen Inc v Hoeschst Marion Roussel Ltd* [2005] RPC 9 where it was stated at page 186:

“The question is always what the person skilled in the art would have understood the patentee to be using the language of the claim to mean”.

- 19 In my opinion there is a strong case that the skilled man, when reading the claims in light of the description, would construe the claims as being limited to implementation via a computer. Indeed as Mr Kapur recognized at the hearing and in some of the correspondence, in practical terms it is so limited because it would not be possible to handle large amounts of data manually. I will however apply both interpretations in reaching my decision. As I have hinted above it is not (ultimately) a point upon which the end result turns.

- 20 The second step in the new approach is to identify the actual contribution made by the invention. In paragraph 43 of the *Aerotel/Macrossan* judgment the Court said that “What has the inventor really added to human knowledge perhaps best sums up this exercise” having apparently accepted the submission of Comptroller’s Counsel that “it is an exercise in judgment probably involving the problem said to be solved, how the invention works, what its advantages are”. The Court also made it clear in that paragraph that it is the substance rather than the form of claims that is significant in identifying the contribution.

- 21 In his response received on 5 March 2007, Mr Kapur identified the advance in the following terms (his emphasis):

“To sum up the advance lies in the identification or recognition of the existence of overwritten document files but more than this, their actual recording, physical separation, from deleted files (where a document file may have many versions or interpretations, replacements, an or copies existing) in respect to physical positioning and time thereby preserving history so that any prior incarnation of document in question can on request be retrieved.”

And referring to the examiner's letter of 5 February 2007:

"I am not just simply claiming an indexing system as your point 10. Although a completely new indexing system (or I would prefer document recovery system library) is indeed the by-product, but a ***completely new process or concept of identification and separation of the type of deletes, being the separation of a deleted document from an overwritten deleted document in its index, ie its position both physically and in time.***

In other words: I am storing the **original before the re-write as one type of delete** and **the normal delete as another** type of delete, ie identifying and physically separating defining **the difference between is the advance at least of the prior art** on which this application depends (**in its simplest form**)."

- 22 In doing so, Mr Kapur helpfully illustrated the concept behind his invention by outlining the problems that a library user might encounter where versions of a journal are altered between visits by the user. Mr Kapur explained that that alteration could be by way of the document supplier sending a later edition of the journal or a corrected version where an error was spotted in the earlier document. On each occasion he said the superseded version would be placed in a storeroom. He questioned how, without his invention, a library user would be able to retrieve the particular version of the document he had viewed on a previous visit.
- 23 From the above I take it that Mr Kapur sees the contribution made by his invention to be a document management system permitting the recovery both of documents that have been deleted and documents that have been overwritten and in which deleted and overwritten documents are stored separately. I accept that as the contribution made by the invention and in doing so I note that none of the prior art cited by the examiner shows a system that operates in that way. If the claims when properly construed are limited to computer implementation, then that contribution is so limited too.
- 24 Moving on to step 3 what I must now do is decide whether that contribution falls solely in excluded matter. Whilst the list in section 1(2) is not exhaustive (referring as it does to "amongst other things") discussion in the correspondence and at the hearing on whether this invention is excluded has been limited to the mental act, business method and computer programs categories of section 1(2)(c) and it is those specific categories that I will consider here. In deciding whether the invention falls within those categories I note that at paragraph 12 of its judgment in *Aerotel*, the Court of Appeal made it clear that Article 52(2) of the EPC to which section 1(2) corresponds is not a list of exceptions, rather it sets out positive categories of things which are not to be regarded as inventions. Accordingly the general UK and European principle of statutory interpretation that exceptions should be construed narrowly does not apply to them.
- 25 Mr Kapur has argued vigorously that the invention is not excluded. Taking the business method exclusion first, Mr Kapur argued that the invention was not limited to implementation via a computer system and whilst the claims covered

computer implementation, it also covered a manual system of storing and archiving documents as might be used in a library. At the hearing he argued that a system for administering a library was not a method of doing business, rather “it is more of an industrial process which helps a business succeed, it is not so much a business process in itself”. In short he was of the view that even within a company, the record management system was just one function of the operation rather than a business method as such. And in Mr Kapur’s opinion, a public library was even less a method of doing business as such.

- 26 Mr Kapur’s arguments on this point were based on a narrow interpretation of the business method exclusion which the Court of Appeal decided in *Aerotel* was inappropriate. In that judgment the Court decided that the exclusion was not limited to abstract things and was not limited to completed transactions quoting the example of double-entry book keeping as something which would fall within the business method exclusion even though no money actually changed hands. However, whilst I was not convinced by Mr Kapur’s submissions on this point even prior to the *Aerotel* judgment, I indicated at the hearing that I did not think the business method exclusion was the most relevant exclusion to his invention. Thus I do not think the scope of the business method exclusion is significant for this decision. Before moving on however I feel I should say that even if a system for administering a library does not fall strictly within the business method exclusion (and I do not feel I have to decide whether it does) that does not mean that it is patentable.
- 27 Most of the discussion at the hearing and in the subsequent correspondence centered on the mental act and computer program exclusions. As I have already said above, Mr Kapur argued that the claims are not limited to implementation via a computer but also cover a system for manually storing and archiving documents eg in a library. It is this interpretation of the claims that I will consider first.
- 28 In Mr Kapur’s view, a system that did not necessarily rely on a computer for its implementation could not be excluded as a program for a computer. Moreover, he said that even where the invention was implemented using a program, the program was just a tool; it was not the invention itself. Some of his arguments regarding the mental act exclusion ran counter to that. He said that in practical terms it simply would not be possible for the system to be operated manually because of the amount of data that might be involved for example in batch processing data. He has also argued that the end result of the invention is the separation, storage and retrieval of documents which he sees as a physical process. He argued that a process that culminated in a physical process could not be a mental act and was patentable.
- 29 I do not agree. Taking the mental act exclusion first, whilst in practical terms it may well be impossible for a human operator to batch process the data in the sort of database Mr Kapur envisages using his invention with, the claims contain no limitation as to the quantity of data being processed. Thus the mental act exclusion is not avoided on the grounds of quantity of data or complexity.
- 30 At the hearing Mr Kapur also suggested that his invention provided a non-obvious

solution to the problem of retrieving deleted and overwritten documents – a solution that the skilled man would not think of. He questioned how his solution could constitute a mental act if no one would think of doing it. As I said at the hearing however, whether an invention is excluded is not a subjective question – how clever or radical a solution is makes no difference if it is in an excluded area. Einstein’s theory of relativity challenged all conventional thinking at the time it was postulated but that would not make it patentable. Thus whilst Mr Kapur’s invention might be eminently clever, that does not make it patentable.

- 31 Furthermore I do not consider the mental act exclusion avoided merely because the invention results in what Mr Kapur saw as the practical, physical process of separation, storage and retrieval of documents. To explain why, I think it would be helpful to refer to a scenario discussed at the hearing in which a librarian decides that rather than file the books on the basis of the first letter of the author’s surname, the last letter of the surname is used instead. To implement such a system, all the indexing records would need to be updated and all the books would need to be refiled. In my view the contribution made by such a system would be in the new indexing scheme rather than in any new arrangement of the books and shelves. That in my view is a mental act and such a system would not be patentable. In my view the contribution made by the present invention similarly falls solely within excluded matter as a mental act in so far as it encompasses implementing the invention manually. That it might result in deleted and overwritten versions of documents being separated and stored in different places and enables their retrieval from those places does not make it patentable.
- 32 At paragraph 98 of the *Aerotel* judgment the Court of Appeal questioned whether the mental act exclusion extended to acts performed on a computer. However, that there are embodiments that might not fall within a particular exclusion does not alter the fact that a claim that covers an excluded implementation is a bad claim. In the present case I have found that if the claims cover manual implementation, as Mr Kapur argues they do, the contribution made in that manual implementation falls solely within the mental act exclusion and the claims are unpatentable.
- 33 The claims of course also cover computer implementation of the invention irrespective of the construction to be given them in step 1. Thus the computer program exclusion is also potentially relevant. There is no indication in the specification that the hardware on which the computer implemented embodiment is effected is anything other than conventional. Thus the contribution made by the invention when implemented by computer is provided by the functionality that hardware is programmed to perform. As Mr Kapur quite rightly pointed out, the fact that a computer program is used to implement an invention does not mean that the invention is necessarily excluded. For example a computer controlled fuel injection system for an internal combustion engine would not be excluded. However in the present case the program does not control a technical process like that in the fuel injection example I have quoted. It is a program for enabling the storage and retrieval of documents in a computer database in a particular way. Whilst it may result in the documents being handled differently, that is entirely a feature of the program. The contribution made by such an invention

must to my mind reside in the program itself and must fall solely within the computer program exclusion. As the Court of Appeal put it at paragraph 73 of the *Aerotel* judgment “the contribution is just the devised program up and running”. Contrary to Mr Kapur’s view the program is not just a tool for implementing the invention, it is the invention itself. Whilst it might change the process of handling documents compared to the prior art, the invention is just a program for doing that and that is not the sort of application of a program that makes a computer implemented invention patentable.

34 Thus, in my view the contribution made by the present invention falls solely within excluded matter irrespective of whether it is implemented manually or on a computer. If, when properly construed, the claims cover manual and computer implementation, the invention is excluded as a method of performing a mental act and a program for a computer as such. If it is limited to implementation via a computer, it is excluded as a program for a computer as such.

35 Having found the contribution to fall solely within excluded matter, it is not strictly necessary for me to consider the fourth step in the *Aerotel* test - is the contribution technical in nature? However a number of Mr Kapur’s arguments relate to this step and I feel I should address them for completeness. First, as I have said elsewhere, that his invention might provide a non-obvious solution to a problem does not make it patentable if, as I have found, the contribution falls solely in excluded matter. Mr Kapur also argued that because his invention addresses a flaw in existing systems then it must be patentable. Whilst I would be the first to agree with Mr Kapur that the inability to retrieve deleted and overwritten documents is a real problem experienced by many people – myself included - the fact that an invention solves a problem and might be eminently useful is not the test for deciding whether an invention is patentable in the UK as the Court of Appeal made clear in reaching its decision in *Fujitsu*. Furthermore, the fact that a patent has been granted for the invention in Canada is of no relevance in the UK.

36 Finally Mr Kapur also referred me to a number of EPO Board of Appeal decisions^{4,5,6} which he said lent weight to his case that the present invention was patentable. The inventions in question shared the common theme that they provided a visual indication of the conditions prevailing within a system which the Board found to be a technical problem. For example *Wabco* concerns a gear lever which gave a visual indication of the gear that should be selected as well as that currently engaged and in *Kearney* an indication was given of the conditions prevailing in a machine tool to allow a user to change settings.

37 Even if I were bound to follow Board of Appeal decisions (which as I have said above I am not), I fail to see the relevance of these decisions to Mr Kapur’s applications. Whilst his invention can provide a visual indication to a user, it does so by providing a list of documents to allow the user to select a required document to be retrieved from archive. That is very different to the kind of information displayed in the EPO cases that Mr Kapur sought to rely on. That

⁴ T362/90 *Wabco*

⁵ T115/85 *IBM*

⁶ T042/87 *Kearney*

information might be provided to a user in Mr Kapur's invention does not make it technical. This is I think the crux of the disagreement between Mr Kapur and the examiner – Mr Kapur thinks that the process of separating, storing and retrieving deleted and overwritten documents is a technical process. The examiner does not. I also disagree with Mr Kapur on this – it is an administrative process based on a mental act rather than a technical process. The contribution made by the invention is not technical in nature and the invention is not patentable.

38 Thus in my view these decisions do not assist Mr Kapur.

Mr Kapur's other applications

39 I must now consider the implications of my findings on '365 for Mr Kapur's other applications. In my opinion they fall into 3 categories. Like '365, three of the remaining applications (GB0516374.6 ('374), GB0516995.8 ('995) and GB0519238.0 ('238)) concern the issue of preserving access to deleted and overwritten documents and relate very closely to the application considered above ('365). I shall refer to these as the delete/overwrite applications. Three of the others (0518016.1 ('016), 0519463.4 ('463) and 0515579.1 ('579) concern a disaster recovery system. Finally 0516997.4 ('997) relates to a testbed system allowing changes to a system to be validated without affecting its operation.

The other "delete/overwrite" applications

40 Even on a quick inspection it is easy to see why the examiner reported that there was potential conflict between '365, '374, '995 and '238. Given the extensive number of claims in each of these applications and the extremely similar nature of their content, it is extremely difficult to identify how they differ, particularly following amendment. Claims 1 and 7 of '374, claim 1 of '995 and claims 1 and 8 of '238 are reproduced in the annex. However I do not think a detailed assessment of the differences between them is necessary here. The contribution made by the invention defined in all these applications lies in the particular data processing steps carried out. Such a contribution falls solely in excluded matter and the inventions defined in these applications are excluded.

41 There are some variations in the categories of exclusion which are relevant to particular claims within those applications as detailed below, but I can see nothing patentable in any of them and I consider them all to relate to excluded subject matter as such. Given that finding, it is not necessary for me to apply step 4 of the test to these applications.

Variations in the relevant exclusions

42 The claims of '995 (as last amended on 28 Nov 2005) are drafted in terms of a method and system for preserving access to deleted documents or document data to allow them to be manually archived or migrated to other document management systems. Whilst it would not make any difference to their patentability if they were, the claims fall short of actually carrying out the archiving or migration and thus do not include any specific manual steps. As I have said

above the contribution made by this invention resides solely in the processing of data. From the description it is clear that the data processing can be (and most likely is) carried out by a computer. If, on a proper construction, the claims are limited to computerised implementation, the contribution must fall solely within the computer program exclusion and the invention is excluded as a program for a computer as such.

- 43 If the claims are not limited to computer implementation but also cover manual implementation, then the contribution in such an implementation falls either within the computer program or mental act exclusion and again the invention is excluded.
- 44 The claims of '374 as amended with Mr Kapur's fax of 6 May 2006 include a claim (claim 18) where it is expressly stated that the step of recovering the required deleted or overwritten document is carried out manually. I do not think the specification as originally filed discloses such an embodiment and thus I think this amendment adds matter contrary to section 76. Even if it did not include added matter however, the claim would not be patentable. Whilst the contribution made by the invention defined in that claim could not in my view be said to fall solely within the computer program exclusion, it would still be subject to the mental act exclusion. The contribution would certainly not be technical in nature.
- 45 The remaining independent claims of '374 are excluded under the computer program or computer program and mental act exclusions depending on the proper construction to be given them.
- 46 '374 also includes a claim (claim 34) in the form of "a computer readable medium embodying database software for executing, inserting and providing steps as claimed in" various preceding claims. As announced in the Office's Practice Notice issued on 2 November 2006⁷, since the monopoly provided by such a claim does not go beyond a program for a computer then the contribution provided by such a claim is also unlikely to go beyond a program for a computer. In my view even had I found the remaining claims of this application to be patentable it could still not have been granted because of the inclusion of this particular claim since any contribution it makes must fall solely within the computer program exclusion.
- 47 All the independent claims in '238 are in my view excluded under the computer program or computer program and mental act exclusions depending on the proper construction to be given them.
- 48 Like '374, this application also contains a "program on a carrier" claim (claim 43) which even if the remaining claims were allowable, is excluded as a program for a computer.

The test bed application

- 49 GB0516997 is somewhat different to the other applications. Whilst in its

⁷ Patents Act 1977: Patentable Subject Matter [2007] RPC 8

embodiments it still utilizes the concept of storing metadata to allow deleted and overwritten documents to be retrieved, the contribution made by the invention defined in the claims is somewhat different. Mr Kapur was however content for me to decide whether all his applications related to excluded matter at the same time and indeed in his letter on this application dated 24 January 2006 he made it clear that he wanted the hearing (and my decision) to cover all his applications. That I will endeavor to do even though the contribution made by this invention is somewhat different to the others

- 50 Rather than the contribution residing in the particular treatment of deleted and overwritten documents, the claims of this application (as last amended with Mr Kapur's fax of 22 April 2006) are concerned with the provision of synchronized, replicated systems. More particularly the invention claimed comprises first and second systems based on separate, connected servers and whereby the two systems are synchronized such that any change made to the data on the first system is replicated in the second system whilst the two are connected. Should the two become disconnected for any reason, then transaction tables (presumably such as those of '365) are used to resynchronize the two upon reconnection so that any change made to the first system is replicated in the second. The reason for doing this, as explained in the description, is to provide a mechanism to allow system changes to be tested on a replica of the real system without operation of the real (primary) system being interrupted. Once the results of the test have been validated and the two systems re-connected and re-synchronised, then the secondary system can be adopted as the primary system or, if the validation proves unsatisfactory, continues as a replica of the primary system.
- 51 Applying the four step test from *Aerotel* to this application raises a number of different issues. At step 1, I think it is clear that the claims are limited to implementation via a computer. They all require the existence of servers and a network and I fail to see how that could be interpreted in any other way - the only embodiment described is once again computer implemented. Possibly more problematic though is the identification of the type of system which the invention allows to be validated. Claim 1 is the broadest claim in this respect. In its preamble the type of system is not specified but later in the claim it is stated that the data that is replicated and synchronized is "business information". According to section 125 of the Act the scope of protection conferred by a patent is that specified in the claims "as interpreted by the description and any drawings" contained in the specification. In the only embodiment described, the invention is applied to a document management system, a limitation included in the only other independent claim (claim 18). I do not think there is enabling disclosure in the specification for the invention to be put into effect with any type of system other than a document management system. Moreover, the scope of "business information" is broader than documents in a DMS and seems to be both unclear in scope (contrary to section 14(5)(b)) and to add matter (contrary to section 76 of the Act).
- 52 Thus the claims of this application are defective in a number of respects such that even if not excluded, they could not be granted. Since those are resolvable issues however, I will go on to consider whether the application could support a

patentable claim. Those problems, however, do not lend themselves to a precise formulation of the contribution made by the invention although for present purposes the contribution I have identified in paragraph 48 above will, I think, suffice.

- 53 Does that contribution fall solely in excluded matter? I think it does. On the face of it, the concept of providing a replicated system as a system testbed sounds patentable. However on closer scrutiny of the present application I do not think that is borne out. The hardware through which the invention is implemented is, once again, conventional. Thus the contribution must reside in what that hardware is programmed to do. I can envisage systems whereby the provision of a replica of a primary system allowing changes to be tested offline and, if acceptable, for the replica to take over as the primary, could be patentable. An example might be a gas turbine generating power where modifications to the generator are first tested offline before the replica goes live as the primary generator. That though is very different to the present invention.
- 54 In '997, the changes to be tested are changes to a database. More specifically they are changes to the program in which the database is embodied. Thus the contribution made by this invention is a program through which changes to another program (the database) are tested and implemented. That contribution must in my view fall solely within excluded matter as a program for a computer as such.
- 55 Given this finding, I do not consider it necessary to apply step 4 of the *Aerotel* test to this application.
- 56 In addition, '997 also contains a claim (claim 34) in the form of a program on a carrier which as explained above is not considered patentable under current UK practice.

The disaster recovery applications

- 57 Mr Kapur's remaining three applications all relate to recovering data in the event of a system failure. The applications are 0515579.1 ('579), 0518016.1 ('016) and 0519463.4 ('463). '016 and '463 were last amended with Mr Kapur's letters dated 11 April 2006. '579 remains in the form it was originally filed. Of all his applications '463 is the only one that has so far been published – as GB2425376.
- 58 As with the delete/overwrite applications, these applications overlap in scope and there are potential conflict issues. They also have numerous other shortcomings which have yet to be addressed. For example all three have had prior art cited against them over which Mr Kapur contends his applications are distinguished. However, because of the decision to focus on '365, the questions of novelty and inventiveness have not (the files suggest) finally been laid to rest. There are also a number of clarity issues, particularly in relation to '579, which have not been resolved and which, when coupled to the numerous independent claims in each of these applications, does not make the job of deciding whether they are excluded or not an easy one.

59 The three applications share the common concept of providing a replica of the primary system filestore and primary system database so that should an element of the system fail (for whatever reason) the data can be recovered. As I understand it, '579 focuses on the feature that the replica filestore is periodically updated eg hourly whilst the system database is continuously updated ie each time a delete/update or insert command is issued within the primary system.

60 '463 and '016 build upon this feature. In '016, the system also includes a second replica filestore, the contents of which are used along with the data stored in the replica database to reconstitute the system if the primary system fails. Mr Kapur does not use the term "reconstitute" but I have chosen it to cover the various update, rollback and fast forward alternatives that are variously specified in the independent claims.

61 It is not immediately clear to me how regularly that second replica filestore is updated. The term "synchronously" in claim 7 suggests this occurs whenever a change is made to the primary filestore. That though seems somewhat illogical because if the second replica filestore is a complete mirror of the primary one I can see no purpose for the first replica filestore. This is borne out by page 11 of the description which provides the only indication of the timing when update of the second replica filestore occurs. The statement that changes to the primary filestore are captured to the second replica filestore only

"when a user has finished working on a document locally. From time to time a copy of the primary filestore is applied (sic) the replica filestore through conventional means"

suggests that the operation is not a continuous one but occurs more frequently than the update to the first replica filestore. The application contains no more detail beyond that.

62 '463 on the other hand is concerned with providing a working system in the event of a failure in either the primary system or the network between the primary system and the replica. The various independent claims provide different specific ways to achieve that but basically they provide different options for ensuring that the replica system database and replica filestore are synchronized.

63 In deciding whether these three applications relate to excluded matter I must apply the *Aerotel* test to each of them.

GB0515579

64 As I have mentioned above, this application is subject to numerous other shortcomings including the presence of a number of "optional" features in the only independent claim – claim 1 – which is reproduced in the annex. Whilst inconvenient, that does not prevent me deciding the excluded matter issue.

65 Applying step one of the test, the claims are framed as a method of preserving access to document data within a system. The claims require the existence of a server and a network which leaves me in no doubt that the system is limited to implementation via computers. Again there is no disclosure in the description

that it could be implemented other than via computers.

- 66 Moving on to step 2, there is no suggestion in the specification that the hardware is anything other than conventional and it is clear to me that the contribution resides in the functions that conventional hardware is programmed to perform. The provision of replica systems to provide a back up is of course entirely conventional as illustrated by the prior art documents cited by the examiner. Any contribution made by this particular invention seems to me to reside in the particular updating regime employed ie what data is backed up and when. That, it seems to me, is nothing more than a computer program up and running. It may be useful, but that as I have said above does not make it patentable.
- 67 Applying step 3 of the *Aerotel* test, any contribution made by the invention defined in the claims of this application must in my view fall solely within excluded matter as a computer program.
- 68 Given this finding I do not need to apply step 4 of the test.

GB0518016

- 69 The claims of '016 as amended on 13 April 2006 raise a number of issues as regards construction which I must comment on in applying step one of the *Aerotel* test. Claim 1 is reproduced in the Annex. I have already mentioned above that it is not clear when the second replica filestore is updated in the claims. Furthermore the various claims of the application specify different ways that access is preserved. For example in claim 1 the contents of the replica database and the second replica file store are used to update the first replica file store. However, in claim 2 which is notionally dependent on claim 1, and independent claim 7, that data seems to be used either to update (fast forward) the first replica filestore to be consistent with the database or to roll back the database so that it is consistent with the replica filestore as last updated. Independent claim 11 merely states that the replicated system is restored to a point in time just before disaster occurred. I take the common underlying theme of the invention to be that a working system is retrieved by ensuring consistency between the replica database and the replica filestore.
- 70 The final point on construction is once again whether the claims are limited to computer implementation. Independent claim 11 requires the presence of servers and a network and is clearly a computer implemented invention. Whilst no other implementation is specifically described, the other independent claims have no such limitation and thus presumably in Mr Kapur's view also cover manual implementation.
- 71 Dealing with this latter interpretation first, irrespective of how it might differ from any previous method, I have no doubt that a manually implemented system for replicating filestores and data indexes, updated using the regime specified in the claims to allow system recovery should the primary system be subject to some disaster, would not be patentable. The contribution would appear to fall solely in excluded matter as a mental act. That physical files would be copied and moved around does not in my view alter that. Thus if this is the correct interpretation to be given to claims 1-10 then they are unpatentable because they encompass an

excluded implementation, namely a mental act.

72 Likewise in my view the claims are also excluded as a program for a computer irrespective of the interpretation to be given to them. It is clear from the description that even if not so limited, the claims encompass implementation via a program. Once again there is no suggestion that the hardware used to implement the invention is anything other than conventional. Indeed it is also known to provide multiple backup systems to provide additional contingencies, particularly in safety critical systems. The particular way that the data is processed by the present system to allow system recovery is achieved by virtue of what the system is programmed to do. That is no more than a program up and running and all the claims of the application are in my view excluded as a program for a computer irrespective of whether the claims are specifically limited to computer implementation or just encompass computer implementation within their scope.

73 Having found the contribution of this invention to fall solely within excluded matter, I do not need to consider step 4 of the test.

GB0519463

74 The claims as last amended on this particular application number 27 in total of which claims 1,12,13 and 15 are independent. Claim 15 is extremely broad and amounts merely to first and second servers connected to a network providing primary and secondary systems. That is clearly not novel and I do not intend giving any further coverage to it (or its dependent claims). Claims 1 and 12 are reproduced in the annex.

75 Claim 27 is in the form of “a computer readable medium embodying database software” which for the reason given above in relation to some of the other applications is not allowable.

76 Thus this application could not be granted whilst it includes these claims irrespective of whether the remaining claims relate to patentable subject matter. In my view however, the invention defined in the remaining claims is excluded.

77 The remaining independent claims all concern a system allowing a working system to be recovered when a failure occurs within the system. They all use the basic system of ‘579, namely primary and secondary systems each including a filestore and database with continual update of the secondary database to mirror the primary one and periodic update of the secondary filestore. They differ however in the action that is taken to recover a working system – in claim 1 the secondary filestore and/or database is modified depending on whether the primary system or network connecting the two servers fails. In claim 12 a failure to the primary system is overcome by changing the replica database to be consistent with the replica filestore. In claim 13, the replica database is rolled back to correspond to the primary filestore which has been copied to the secondary filestore when the primary system fails but the primary filestore survives.

78 Applying the *Aerotel* test, at step 1, claim 1 requires the presence of servers and

a network connecting them. Thus I have no doubt that this claim is limited to implementation via computers. Claims 12 and 13 do not specifically include that limitation and Mr Kapur would presumably argue they are not limited to computer implementation.

- 79 In applying step 2 – identifying the actual contribution – this must be the provision of duplicate filestores and databases, the particular scheme for copying the filestore and database to the secondary system and the particular process for recovering a working system after a failure. In claim 1 that contribution is within a computerized system, a limitation that may or may not apply to claims 12 and 13 depending on the correct construction to be applied to those claims.
- 80 The answer to step 3 – does the contribution fall solely in excluded matter – must in my view be “yes” although once again the particular category of exclusion depends upon the correct interpretation to be given the claims in step one. I have no doubt that a wholly manual implementation of the invention would be excluded, a scheme for copying and reconstituting files and indexes being a mental act. If claims 12 and 13 when properly construed cover such an implementation then they are not patentable because as explained earlier they cover a wholly excluded implementation.
- 81 Claims 12 and 13 both of course cover implementation via a computer – the only embodiment described being computer implemented. Claim 1 is explicitly limited to implementation via computers. As in Mr Kapur’s other applications, there is nothing to suggest that the hardware involved is anything other than conventional and the contribution must therefore be provided by the functionality that hardware is programmed to perform. Again I fail to see how the contribution made by the particular scheme for copying and manipulating data specified in the claims could be anything more than a program up and running. Thus I consider the claims of the application to be excluded as relating to (claim 1) or encompassing (claims 12 and 13) a program for a computer.
- 82 Thus I consider the invention defined in claim 1 of this application to be excluded as a program for a computer as such and claims 12 and 13 to be excluded as a program for a computer or a mental act as such according to the correct construction to be given to them. In light of that finding it is again not necessary for me to address step 4 of the *Aerotel* test.

Decision

- 83 I have found that the inventions defined in the independent claims of all the applications are excluded because the contribution they make falls solely in excluded matter as a program for a computer and/or a method of performing a mental act. I trust that the degree of analysis I have provided above illustrates how carefully I have read each of Mr Kapur’s applications, including the dependent claims. In reading them I have not been able to identify any amendment by which the excluded matter objections could be overcome no matter how much time and effort Mr Kapur might invest in amending his

applications further. I therefore refuse them under section 18(3) for failing to comply with the requirements of section 1(2).

- 84 Whilst I have reached this conclusion by following the approach approved by the Court of Appeal in *Aerotel/Macrossan* I should add at this point that I am sure that the invention would have been found to be unpatentable under the approaches previously adopted, namely that adopted in *CFPH*⁸ and the technical contribution approach that preceded it.

Appeal

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

A BARTLETT

Deputy Director acting for the Comptroller

⁸ *CFPH LLC's Application [2006] RPC 5*

Annex to Decision O/264/07

Reproduced here is the text of relevant claims of the applications as indicated. They are grouped according to the order set out in paragraph 39 above of the decision:-

Preserving access:-

0519365.1

1. A method for recycling intentionally, and or unintentionally deleted or overwritten deleted document data within a system, wherein copies or versions of said document data exist and wherein said document data is stored in a system filestore associated with a system database containing reference data pointing to the document data in the filestore, the method comprising the steps of:

(a) determining that a delete or overwrite command has been issued and recording the deleted or overwritten deleted reference data wherein the reference data comprises object, parent and version identification of the document data prior to and or after the deleting or updating of the reference document data; and

(b) inserting and physically separating the recorded, deleted reference data from the overwritten reference data into a set of access-preservation tables with a date timestamp; and

(c) inserting all other salient information connected with the before delete or overwritten delete reference data contained within system tables including parent and object reference data into a second set of access preservation tables; and

(d) providing a set of combination tables to combine data in the first and the second set of access preservation tables thereby pointing to the deleted/overwritten document data within the filestore before a clean task runs;

and

(e) identifying and storing the document data deleted and, or the document data overwritten deleted to a separate empty filestore the new location of the document data deleted and, or the document data overwritten deleted stored in the set of combination tables;

and

(f) automatically recycling the deleted document data required by the user back to the system database and filestore, and , or to a secondary archive system database and filestore as necessary depending on user requirements manipulating the data, to provide the document in the required way and version requested by the user;

(g) automatically recycling the overwritten deleted document data required by the user back to the system database and the filestore, and , or to a secondary archive system database and archive filestore as necessary depending on said user requesting a copy of the overwritten document data as a new copy or as a replacement of the current version of the document data.

36. A document management system, the document management system containing a document recovery and archival system comprising a replica filestore and or storage media to store the deleted and or overwritten documents, the document recovery system also comprising at least one database table added to the system database to preserve, combine and , point to the filestore and reference metadata captured from the system tables upon a delete and or update command issued in response to a document deleted or overwritten, the document recovery system whereby in the event a user wishes to recover the document also comprises at least one procedure to reverse the delete and or overwrite command by manipulating and returning information as necessary depending on user requirement and the connected document concerned to both system database and filestore respectively.

0516374.6

1. A method for preserving access to versions of deleted and or overwritten document data from a system, in order to allow the identification of delete command or an overwritten delete being issued, and the capture, of the document data based on document version and time. and date information allowing physical separation of the document data and retrieval of a document in case

the document or the document data was deleted or overwritten in error wherein said document is stored in a system filestore associated with a system database or store that contains said document data which consists of reference data to point to documents within the system filestore, and supplementary data regarding the document the method comprising steps of :

- a) determining that the delete or overwrite command has been issued;
- b) recording the reference data with identification information after the command is issued but at the time and date prior to or after the deleting or updating of the reference data;
- c) inserting the recorded reference data into newly added set of access preservation records or tables; and
- d) combining and separating document data using the identification information including date and time information stored in the said reference data within the access preservation tables together with the supplementary data consisting of any remaining reference data and document data still residing within the system before it is cleaned from the system, using at least one procedure to do the combining and separating in regards to the deleted and or overwritten document; and
- e) providing at least one but preferably two access preservation or combination tables or records , the first to point to the deleted documents, the second to point to the overwritten documents within the system filestore; and
- f) retrieving the deleted and or overwritten document version or versions on user request by using time and date information from the combination tables.

7. A system for preserving access to versions of deleted or overwritten document information comprising:

- a) a database for storing document information consisting of reference information to point to a document in a filestore and document information;
- b) at least one trigger containing at least one procedure for catching and recording, identifying deleted and overwritten reference information from at least one system table containing reference information that has been deleted and/or updated from the database;
- c) at least one access preservation table for storing the deleted and overwritten reference information, the access preservation data being operable to point to the data that has been deleted and/or updated; and
- d) at least one database procedure to combine and separate reference information from the at least one access preservation table and supplementary document information comprising the reference and the document information still within the database before it is cleaned into the at least one access preservation or combination table.

0516995.8

1. A method for preserving access to deleted final documents within a system, to allow their identification, separation and manual migration to other document management systems or to conventional systems and or manual archival in case the document is deleted for said purpose , wherein said document is stored in a system filestore associated with a system database or store that contains reference data to point to the document data within the system filestore, the method comprising the steps of:

- determining that a delete command has been issued;
- recording the reference data prior to or after the deleting or updating of the reference data;
- inserting the recorded reference data into a newly added access preservation store or table; and
- combining and separating final deleted documents from any overwritten

documents by means of manual run procedure(s)
to combine all other salient reference data connected with the reference data
before system reference and documents are cleaned ; and
providing at least one access preservation or combination table to hold the
metadata pointing to the deleted documents awaiting storage or transfer.

0519238.0

1. A Method for preserving access to versions of deleted and or overwritten document data from a system, in order to allow the identification, of delete command or an overwritten delete being issued and the capture, of the document data based on document version and time and date information allowing physical separation of the document data in case the document data was deleted or overwritten in error or for the purpose of archiving or migration wherein said document is stored in a system filestore associated with a system database or store that contains said document data which consists of reference data to point to documents within the system filestore, and supplementary data regarding the document the method comprising steps of :

- a. determining that a delete or overwrite command has been issued;
- b. recording and the reference data with identification information after the command is issued and separating the reference data at the time just prior to or after the deleting or updating of the reference data;
- c. inserting the recorded and separated data into a newly added set of access preservation records or tables or combination tables by means of procedures; and
- d. providing at least one but preferably two access preservation or combination tables or records , the first to point to the deleted documents, the second to point to the overwritten documents within the system file store;
- e. recovering the deleted and or overwritten document versions or version on user request by retrieving and using reference data including time and date information from the combination tables.

8. A system for preserving access to versions of deleted or overwritten document data comprising:

- a) a database for storing document information consisting of reference information to point to a document in a filestore and document information;
- b) at least one trigger for catching, identifying and recording and separating deleted and overwritten reference information from at least one system table containing reference information that has been deleted and/or updated from the database into at least one access preservation table or combination table for storing access preservation data, the access preservation data being operable to point to the data that has been deleted and/or updated.

Disaster recovery:-

0518016.1

1. A method for preserving access of a system in case of disaster having a primary filestore associated with a primary system database, the method comprising the steps of:

creating a replica system having a replica filestore and a replica system database;

periodically copying data from the primary filestore to the replica filestore;

in response to a change to the data in primary filestore copying the said data and continuously storing it to a second initially empty replica filestore.

in response to a change to the primary system database, continuously making a corresponding change to the replica system database based on the time of earliest recorded data; and

in the event of complete failure of the primary system, using the changes and transaction information stored to the replica system database and data stored in the second replica filestore to update the earlier copy of the replica filestore.

0519463.4

1. A method for preserving access to document data entered by the user community within a primary system located on a primary server to a separate location, wherein said document data is stored in a system filestore associated with a system database, the system database containing reference data to point to the document data within the system filestore, by use of a replicated server containing a secondary system as a disaster recovery system the method comprising steps of:

a) creating said replicated server containing the secondary system in which the reference data is configured to point to document data in a secondary system filestore the document data periodically being updated by copying data from the primary filestore and containing system database tables that mirror the primary system database tables save those tables containing reference data that uniquely identify the secondary system from the primary on a network;

b) determining that an insert, an update, or a delete command has been issued within the primary production system database upon its system tables excepting those containing reference information that uniquely identifies the primary system from the secondary system on the network fabric;

c) transferring and recording the said issued commands upon the primary system database tables to the database system tables of the secondary system based on time of earliest recorded data;

d) in the event of failure of the primary system or of the network between the primary and replica server, changing the secondary system's database and or the secondary filestore so that the secondary system database corresponds with either the secondary or primary filestore.

12. A document management recovery system, the document management recovery system comprising:

a replica system having a replica filestore and a replica system database for connection to a primary system having a primary filestore and a primary system database;

the system being arranged to periodically copy data from the primary filestore to the replica filestore and being arranged such that in response to a change to the primary system database, a corresponding change is made to the replica system database whereby in the event of failure of the primary system the system is controlled to change the replica system database to the replica filestore so that the replica system database corresponds with the replica filestore.

0515579.1

1. A method for preserving access to document data within a system in a separate location, wherein said document data is stored in a system filestore associated with a system database, the system database containing reference data to point to the document data within the system filestore, in case of disaster to the primary system such as, earthquake, the secondary system can be used, the method comprising steps of:

creating a replicated server containing the system database and filestore;

determining that a insert, update, delete command has been issued within the primary production system database upon its system tables excepting those containing reference information that uniquely identifies the production system database from its replica on the network fabric;

transferring and recording the commands above to the database system tables of the replica based on time of earliest recorded data;

transferring recorded document data to secondary filestore using incremental primary filestore backup restores; and

the Invention can be used as a "Standby" backup system and;

the Invention can be embodied in a multi-operating system embodiment; and

the invention can be embodied in a multi-document management system embodiment; and

the invention can be implemented in a multi-database embodiment.

Testbed:-

0516997.4

1. An apparatus for aiding real-time validation of system changes, comprising: a primary system based on a first server; and a secondary system based on a second server, wherein the primary and secondary system are operable to be connected to a network fabric and attached to each other; and

wherein business information loaded onto the primary system initially is replicated onto the secondary system whilst the primary and secondary systems are unattached; and

further business information entered, altered, deleted and overwritten by the user base at real-time is continuously transferred from the primary system to the attached secondary system such that the secondary system is operable to achieve continuous synchronization and at real-time replicate the primary system; and

wherein the secondary system can be resynchronized to changes to business information upon the primary system after any breakage of the link for any reason using at least one transaction table and at least one database procedure once the secondary system is reattached such that the secondary system continues to be continuously synchronized; and

wherein the secondary system on successful upgrade validation is re-

attached and interchanged to become the primary system.

A BARTLETT