

**PATENTS ACT 1977**

APPLICANT Sony United Kingdom Limited

ISSUE Whether patent application number  
GB0624420.6 complies with Section 1(2)

HEARING OFFICER Peter Slater

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**DECISION****Introduction**

- 1 Patent application GB0624420.6 entitled "Information handling" was filed in the name of Sony United Kingdom Limited on 6 December 2006. The application was then published as GB2444536 on 11 June 2008.
- 2 The examiner has maintained throughout an objection that the invention claimed in this application is excluded from patentability as a computer program and a mental act under section 1(2) of the Patents Act 1977. The applicant has not been able to overcome this objection, despite amendments to the application.
- 3 The matter therefore came before me at a hearing on 16 September 2011 where the applicant was represented by Dr. Doug Ealey of D. Young & Co. The examiner Mr Jake Collins was also present.
- 4 Shortly after the hearing, and before I had issued my decision, the High Court issued its judgments in the cases of *Haliburton*<sup>1</sup> and *Protecting Kids The World Over Limited's Application*<sup>2</sup> (PKTWO), both of which dealt with the issue of excluded subject matter. I therefore considered it appropriate to give the applicant an opportunity to file any additional submissions they might have in relation to these judgments. The agent responded in a letter dated 11 November 2011.

**The Invention**

- 5 The invention relates to a system for managing the storage and retrieval of items of information, for example, video images and/or audio data, and the indexing of those

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<sup>1</sup> *Halliburton Energy Services Inc's Applications* [2011] EWHC 2508 (Pat)

<sup>2</sup> *Protecting Kids The World Over Limited's Application* [2011] EWHC 2720 (Pat)

images by generation of additional keywords and phrases “*textual metadata*” representing the identity or content of those images. This additional data is stored alongside the image to facilitate searching. Traditionally, indexing of images by creation of textual metadata has been done manually by the user inspecting each and every image prior to storage, selecting appropriate keywords and phrases which are then keyed in and stored in association with the image. This process is both onerous to the user and costly. The present invention seeks to solve the problem by at least partly automating the process. The system achieves this by creating a feature vector representing various properties of the image e.g. colour, and using this feature vector to search for similar images which are already stored within the system. The system then searches the textual data stored alongside those images for common keywords and/or phrases and stores these alongside the original image or presents the user with an opportunity to accept, add or edit the metadata before storage. This new combination of feature vector and textual metadata being more representative of the image’s identity and content helps facilitate the process of searching making it faster, more efficient and presenting more reliable results.

6 The most recent set of claims which were filed on 11 May 2011 include two independent claims to an *Information handling apparatus* (claim 1) and a corresponding method of handling information (claim 14). The wording of the claims is as follows:

1. *Information handling apparatus in which textual metadata is generated in respect of a current information item in an ensemble of information items in which the information items comprise audio and/or video data, the apparatus comprising:*

*means for abstracting one or more predetermined properties of the audio and/or video data of the current information item to form a representation which is an abstraction of the audio and/or video data of the current information item;*

*means for detecting a subset of information items from the ensemble of information items, the subset being a predetermined number of information items which have a respective representation most similar to that of the current information item; and*

*means for selecting one or more most frequently occurring words and/or phrases within textual metadata associated with the subset of information items, and*

*storing means to store the representation of the information item and to store selected words and/or phrases in textual metadata associated with the representation of the current information item.*

14. *An information handling method in which textual metadata is generated in respect of a current information item in an ensemble of information items in which the information items comprise audio and/or video data, the method comprising the steps of:*

*abstracting one or more predetermined properties of the audio and/or video data of the current information item to form a representation which is an abstraction of the audio and/or video data of the current information item;*

*detecting a subset of information items from the ensemble of information items, the subset being a predetermined number of information*

*items which have a respective representation most similar to that of the current information item;*  
*selecting one or more most frequently occurring words and/or phrases within textual metadata associated with the subset of information items;*  
*storing the representation of the information item; and*  
*storing the selected words and/or phrases in textual metadata associated with the representation of the current information item.*

## The Law

- 7 The examiner has raised an objection under section 1(2)(c) of the Patents Act 1977 that the invention is not patentable because it relates to a mental act and program for a computer as such; the relevant provisions of this section of the Act are shown in bold below:

**1(2) It is hereby declared that the following (amongst other things) are not inventions for the purpose of the 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 provisions shall prevent anything from being treated as an invention for the purposes of the Act only to the extent that a patent or application for a patent relates to that thing as such.*

- 8 As explained in the notice published by the UK Intellectual Property Office on 8 December 2008<sup>3</sup>, the starting point for determining whether an invention falls within the exclusions of section 1(2) is the judgment of the Court of Appeal in *Aerotel/Macrossan*<sup>4</sup>.
- 9 The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian Ltd's Application*<sup>5</sup>. *Symbian* arose under the computer program exclusion, but as with its previous decision in *Aerotel*, the Court gave general guidance on section 1(2). Although the Court approached the question of excluded matter primarily on the basis of whether there was a technical contribution, it nevertheless (at paragraph 59) considered its conclusion in the light of the *Aerotel* approach. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*<sup>6</sup> which rested on whether the contribution was technical; and that any differences in the two

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<sup>3</sup> <http://www.ipo.gov.uk/p-pn-computer.htm>

<sup>4</sup> *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7

<sup>5</sup> *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1

<sup>6</sup> *Merrill Lynch's Application* [1989] RPC 561

approaches should affect neither the applicable principles nor the outcome in any particular case. But the *Symbian* judgment does make it clear, that in deciding whether an invention is excluded, one must ask does it make a technical contribution? If it does then it is not excluded.

- 10 Subject to the clarification provided by *Symbian*, it is therefore still appropriate for me, and Dr Ealey did not argue otherwise, to proceed on the basis of the four-step approach explained at paragraphs 40-48 of *Aerotel/Macrossan* namely:
- 1) Properly construe the claim
  - 2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution).
  - 3) Ask whether it falls solely within the excluded matter, which (see paragraph 45) is merely an expression of the “as such” qualification of section 1(2).
  - 4) If the third step has not covered it, check whether the actual or alleged contribution is actually technical.
- 11 The operation of this test is explained at paragraphs 40-48 of the decision. Paragraph 43 confirms that identification of the contribution is essentially a matter of determining what it is the inventor has really added to human knowledge, and involves looking at substance, not form. Paragraph 46 explains that the fourth step of checking whether the contribution is technical may not be necessary because the third step should have covered the point.
- 12 At the hearing, Dr Ealey suggested that I should also take into consideration, when considering what was meant by a computer program as such, what the original authors of the EPC had intended the computer program exclusion to cover discussing in some detail the history of the exclusion of computer programs, referring back to the *travaux préparatoires* of the EPC. With respect, these considerations are not particularly helpful. What matters here are not the intentions of the “founding fathers” of the EPC in 1971, but rather the decisions of the Court of Appeal and to some extent those of the EPO’s Board of Appeal, as this is the case law which I am bound to follow. “So, one asks, what help can be had from the *travaux préparatoires* to the EPC? The answer is not a lot.” (Jacob LJ, *Aerotel* paragraph 11).
- 13 I will deal with the rest of the arguments put forward by Dr Ealey as I apply the test set out in *Aerotel/Macrossan* to the present case.

### **Construing the claims**

- 14 The first step of the test is to construe the claims. I do not think this presents any real problems since both the applicant and the examiner appear to agree as to the meaning of the claims.

### **Identify the actual contribution**

- 15 For the second step, it is necessary to identify the contribution made by the invention. Paragraph 43 of *Aerotel/Macrossan* explains that this is to be determined by asking what it is - as a matter of substance not form - that the invention has really

added to human knowledge having regard to the problem to be solved, how the invention works and what its advantages are.

- 16 The examiner's view, as set out in his letter of 31 May 2011, is that the contribution *"lies in a system for generating textual metadata that is more representative of an audio or video data item and associating this metadata with the audio or video data item. More representational textual metadata has advantages in ease and accuracy of retrieval."*
- 17 Dr Ealey does not appear to dispute that the invention does indeed result in more representative textual metadata being associated with the audio/video data items but argues that this is too narrow an interpretation, and that the contribution extends beyond this. He argues throughout the correspondence, and at the hearing, that the invention provides a method/apparatus for making a better audio/video data item by augmenting it with a better (more representative) descriptor, which results in more efficient/reliable retrieval of such items from store. At the hearing, he referred to the example of YouTube™, where thousands of videos are uploaded by users, and are subsequently searched for by users, as a good example of where the benefits that the present invention provides would be felt "as a matter of practical reality", in terms of improving the bandwidth, performance and reliability of search results transmitted to the user, and in terms of not "losing" poorly classified videos.
- 18 So what is the contribution? I would have to agree that the invention provides a new means for generating textual metadata which when associated with the corresponding image is representative of its identity and content, and that a combination of this metadata and associated feature vector provides a more efficient and accurate means of indexing images or other data items. I also think it is important not to lose sight of the fact that the specification envisages the invention reducing the burden and cost associated with manually generating the metadata by at least partially automating the process. However, whilst I can see the merits in Dr Ealey's arguments that the contribution goes beyond this to include, in the case of vast video archives like YouTube™, the benefits which may be achieved in terms of improving the bandwidth, performance and reliability of search results, I am not convinced the contribution extends that far, and note that these advantages were not envisaged by the applicant at the time of filing,

**Does the contribution fall solely within excluded subject matter? Is the contribution technical in nature?**

*A scheme, rule or method for performing a mental act*

- 19 The examiner argues that the generation of textual metadata is an intellectual exercise and should therefore be excluded as a mental act given that he can see no technical contribution associated with the task.
- 20 Dr Ealey considers the present invention to give rise to technical effects that go beyond a mental act as such. At the hearing, he referred me to several paragraphs from the judgment in *Kapur*<sup>7</sup> where Floyd J states the following:

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<sup>7</sup> Kapur's Patent Application [2008] EWHC 649 (Pat)

18. *It is plain that the Court of Appeal in Aerotel took a much narrower view of the exclusion. They said*

*"There is no particular reason to think that "mental act" was intended to exclude things wider than, for example, methods of doing mental arithmetic (every now and then someone comes up with a trick for this, for instance Trachtenberg's system) or remembering things (e.g. in its day, Pelmanism)."*

19. *..... the weight of authority favours a rather narrow view of this exclusion, namely whether the claim actually covers a purely mental implementation of the claimed invention.*

20. *In my judgment the narrow view of the exclusion is the correct one. More specifically I think the correct view is that, provided the claim cannot be infringed by mental acts as such, its subject matter is not caught by the exclusion. It seems to me that if this were not so the scope of the exclusion would be unacceptably broad, as well as being uncertain in scope. It follows that the exclusion will not apply if there are appropriate non-mental limitations in the claim. In those circumstances it will not be possible to infringe the claim by mental acts alone, and the invention will not comprise a method for performing a mental act.*

37. *Firstly, in excluding the physical aspects of the method claimed he gave the mental act exclusion too broad a scope: see the discussion of the law above. A book management system in a library which implemented Mr Kapur's invention would involve the creation of physical records, and the physical separation of documents. I cannot accept that this system is nothing more than a method of performing a mental act as such. Secondly, taking the library implementation, I am not convinced that the indexing scheme is a mental act at all. Certainly what underlies the scheme is a novel concept: but that is true of all inventions, and is another matter. The physical handling of documents is not a mental act.*

21 On that basis, Dr Ealey concludes that *"...a system that processes video images, accesses records of other video images, transfers content between records and creates and stores a new record cannot be considered to encompass a mental act. Similarly the beneficial effects of creating better records, access more relevant files and fewer irrelevant ones, etc., all seem to fall outside Mr Justice Floyd's interpretation of a mental act as such. Finally, even restricting the effect to the examiner's creation of a better record held in association with a AV file, this also appears to be allowable with respect to the mental act exclusion."*

22 Furthermore, in his submissions of 11 November 2011, Dr Ealey argues that on the correct, narrow interpretation of the mental act exclusion, the invention is allowable as it requires a computer to implement it. Referring in support, to paragraph 70 in the *Halliburton* judgement where Judge Birss QC states that:

70. *Approached on the correct, narrow basis, the mental act exclusion is irrelevant in this case. The claimed method cannot be performed by purely mental means and that is the end of the matter. Put another way, the contribution is a computer implemented method and as such cannot fall within the mental act exclusion.*

23 It is clear from the judgment in *Halliburton* that I must apply a narrow interpretation to the mental act exclusion in line with Judge Birss' comments in paragraphs 57 and 63 of that judgment:

57 *So the balance of authority in England is in favour of the narrow approach to the mental act exclusion. I will only add that, if the matter were free from authority, I would favour the narrow interpretation on its own merits. The wide construction seems to me to be uncertain in scope and I am not aware of any good reason why the exclusion needs to be interpreted widely. On the other hand I can see a logic behind the narrow interpretation, preventing patents being granted which could be infringed by a purely mental process.*

*Allowing for the possibility of patent infringement by thought alone seems to me to be undesirable.*

63 *In my judgment the correct scope of the mental act exclusion is a narrow one. Its purpose is to make sure that patent claims cannot be performed by purely mental means and that is all. The exclusion will not apply if there are appropriate non-mental limitations in the claim.*

- 24 Accordingly, when the examiner applied the mental act exclusion to this case he did so, on too broad a basis. Approached on the correct, narrow interpretation, the mental act exclusion is irrelevant in this case. The invention as claimed cannot be performed by purely mental means or to put it another way, the contribution requires a computer for its implementation and as such cannot fall within the mental act exclusion.

*A program for a computer*

- 25 As I have said above in relation to the mental act exclusion, there is no doubt in my mind that the contribution requires a computer program for its implementation. However, the mere fact that the invention is effected in software does not mean that it should be immediately excluded as a computer program as such. What matters is whether or not the program provides a technical contribution.
- 26 The examiner in his letter of 25 March 2011 argues that the contribution relates solely to the manipulation of data within the computer, and hence does not relate to a technical process existing outside of the computer nor does it seek to solve a technical problem within the computer itself. He alleges that the ease and accuracy of information retrieval are not technical problems within the computer instead they are problems with the data. He expands on this in his letter dated 31 May 2011 by drawing upon the list of “signposts” referred to by Justice Lewinson in *AT&T/CVON*<sup>8</sup> stating that *“there is no technical effect outside the computer. The contribution lies in the generation of better metadata for specific data for the specific application of searching that data. Thus, I do not consider that the effect is at the level of the architecture of the computer. I do not see that the computer is operating as a computer in a new way, nor do I see any increase in speed or reliability of the computer. The perceived problem is the ease and accuracy of the retrieval of data items. I do not consider that these are technical problems as they are problems in the accuracy of the data, which I consider to be part of the program. The contribution does not, in my opinion, create a better computer, rather it creates a better database and I consider that databases fall within the computer program exclusion.”*
- 27 At the hearing, Dr Ealey argued that these “signposts” should not be taken as a definitive account of what is and what isn’t technical, that they are signposts and nothing more, and that the guidance I should follow is that set out *Symbian*. Dr Ealey went on to argue that the European Patent Office (EPO) Boards of Appeal (BoA) decision approved by the Court of Appeal in *Symbian*, namely that of *IBM Corp./Computer-related invention*<sup>9</sup>, is similar in nature to the present invention and is particularly helpful in deciding what is or isn’t technical. In particular, Mr Ealey argues that the invention in that case was related to a more efficient data structure in much

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<sup>8</sup> *AT&T Knowledge Ventures’ Application and CVON Innovations Ltd’s Application* [2009] FSR 19  
<sup>9</sup> [1988] T115/85

the same way as is the current application, and that it should not be excluded as it too provides a solution to a technical problem. However, I note in that case the invention related to an arrangement for displaying messages indicating the status of events occurring within an input/output device of a text processor, and whilst the invention may have been considered to reside in a computer program and the way in which data was structured in associated tables, the Board of Appeal ruled that a claim to its use in solving what was a technical problem was not to be excluded. However, in this case we are not seeking to solve a technical problem associated with the workings of a computer, we are concerned with improving the way in which metadata is attributed to images. As such, I do not think this analogy is of much help here.

- 28 Dr Ealey also drew on two analogies to demonstrate what might be considered technical. His first related to the defragmentation of a hard drive. As he observed, this essentially involves the restructuring of data, but has a beneficial effect on the speed of access to that data. I agree with Dr Ealey that the defragmentation of a hard drive might well be considered patentable. However, I think his analogy is flawed. A computer with a defragmented hard drive will run faster in all circumstances irrespective of the nature of the program running on it or the nature of data being accessed. However, this is not the case in the present invention where the speed of the system will only be improved when accessing audio / video data using the associated metadata which would suggest that the contribution is not technical in nature and certainly doesn't provide a technical effect operating at the architectural level.
- 29 Dr Ealey then proposed a scenario in which two computers, each embodying an invention, could perform a given task 20% faster. In the first, this was achieved by shrinking the processor die by 20%, and in the second by providing metadata which enabled identification of 20% of the data items as not requiring processing. He suggested that as the invention embodied on the first computer would no doubt be considered patentable, then so should that embodied on the second. Whilst I can see the logic in Dr Ealey's arguments, each case must be decided on the facts. In the second example, what will determine whether the invention is patentable is whether the computer is actually running faster or whether the problem has been circumvented rather than solved by reducing the amount of data to be processed. It is important again to note that the computer with the smaller processor die will presumably be correspondingly quicker in performing any operation, whereas that which relies on the provision of metadata will only be quicker when processing those data items to which the metadata relates.
- 30 The task of determining whether the invention provides a technical contribution is a difficult one, as is evident from the plethora of case law in this area. However, I think, as did the examiner in his letter of 31 May 2011, it would be useful in this case to use the 'signposts' as set out by Lewison J in *AT&T/CVON* as a guide which states in paragraphs 40-41:

*40. As Lord Neuberger pointed out, it is impossible to define the meaning of "technical effect" in this context, but it seems to me that useful signposts to a relevant technical effect 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 there is an increase in the speed or reliability of the computer;*
- v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.*

*41 If there is a technical effect in this sense, it is still necessary to consider whether the claimed technical effect lies solely in excluded matter.*

- 31 I will deal with “signposts” (i)-(iii) first. It is clear that the invention provides a new means for generating textual metadata which when associated with the corresponding image is more representative of its identity and content, and that a combination of this metadata and associated feature vector provides a more efficient and accurate means of indexing and searching for images or other data items. However, I do not think this constitutes a technical effect on a process outside of the computer.
- 32 There is nothing to suggest that the computer architecture is anything other than conventional, any apparent increase in the efficiency by which the metadata is derived or the accuracy of that data is down to the way in which the program operates. As I have already said, I think the computer is entirely conventional, not only in its architecture, but in the way it operates.
- 33 Is there an increase in the speed or reliability of the computer? There is no doubt that the computer is capable of delivering more relevant images to the user faster than in the conventional case. However, I think that the increase in speed does not result from the computer itself being made to operate faster at a technical level. The increase in speed is in fact achieved by assigning more accurate and consistent metadata to the images prior to the search.
- 34 To my mind, the problem of automatically generating textual metadata with the view to eliminating the need for human intervention to create more reliable and consistent data representative of the image is not a technical one. The invention provides a “new tool” using conventional hardware to automate a process, which would previously have been carried out by the user. The resulting increase in accuracy and reliability of the metadata is just the sort of effect one would expect from computerisation, and which the Court of Appeal in *Fujitsu*<sup>10</sup> confirmed did not confer the necessary technical effect to avoid exclusion. The problem has been circumvented by programming and has not been solved by technical means.
- 35 Does the invention speed up the search for images and/or improve the use of bandwidth as Dr Ealey suggests? I do not think so, the invention provides more relevant and consistent metadata and facilitates searching for images, and may well return more relevant results in terms of not “losing” images which may have been badly indexed by the user but the search engine remains unchanged. The fact that more relevant results may be returned quicker is not as a result of a speedier or more efficient search but in effect by the enhanced accuracy of the metadata

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<sup>10</sup> Fujitsu Limited’s Application [1997] RPC 608

associated with the images. Ironically, this may result in the search returning even more relevant results which may mean that bandwidth is adversely affected.

- 36 What the applicant has done is to create a new computer program, albeit a clever one, which is capable generating textual metadata which provides a more efficient and accurate means of indexing images. I consider this to be nothing more than an advance in programming and indexing of data, and can find no technical contribution here.
- 37 At the hearing, Dr Ealey suggested further amending the independent claims to include the subject matter of claim 9 should I find the present claims to be excluded. Claim 9 includes the additional facility for displaying to a user a selectable list of one or more of the most frequently occurring words and/or phrases from those identified in claim 1. In effect, the system provides an auto-suggestion and/or auto complete feature for the user to agree the metadata before storage with the effect that the user has overall control over the metadata, and has to manually input less data which Dr Ealey considered to convey an additional technical effect. However, I would have to disagree, displaying suggested metadata to the user for agreement to my mind does not convey any technical advantage it merely makes "life easier" for the user. Dr Ealey suggested that alerting a user to the presence of keywords associated with a media item was analogous to the case in *PKTWO*. However, I would have to say that this analogy is again of limited use, as the invention in *PKTWO* involved alerting a remote user to the inappropriate use of language in internet messages or e-mails and was in effect an "alarm" which is clearly not the case here. Hence, I do not consider this further limitation to convey anything additional by way of a technical contribution which would save the invention from exclusion as a computer program as such.
- 38 Having considered all the evidence made available to me, and all the arguments put to me at the hearing, I do not consider the invention to provide a technical contribution, and as such it would seem to fall squarely within the computer program exemption of section 1(2)(c).

## **Conclusion**

- 39 In the light of my findings above, I conclude that the invention as claimed is excluded under section 1(2) because it relates to a computer program as such. Having read the specification I do not think that any saving amendment is possible. I therefore refuse the application under section 18(3).

## **Appeal**

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

**PETER SLATER**

Deputy Director, acting for the Comptroller