Intellectual Property Office
For Creativity and Innovation

BL O/174/07

21 June 2007

**PATENTS ACT 1977**

APPLICANT Sony United Kingdom Limited

ISSUE Whether patent application number GB 0227657.4 complies with section 1(2)

HEARING OFFICER R C Kennell

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# DECISION

## Introduction

1 Application no GB 0227657.4 was filed on 27 November 2002 and published under serial no. GB 2395804 A on 2 June 2004. The examiner has maintained an objection that the invention is excluded from patentability under section 1(2) of the Act, which the applicant has not been able to overcome despite amendment of the specification.

2 The matter therefore came before me at a hearing on 26 April 2007. The applicant was represented by its patent attorney, Mr Jonathan Jackson of D Young & Co, and the examiner, Mr Jake Collins, assisted via videolink.

## The invention

3 The invention relates to information storage and retrieval in respect of systems containing a large amount of information, sometimes referred to as "massive content collections", in which it can be difficult to formulate effective search questions to give a manageable number of "hits". The specification refers to a paper by Kohonen et al[1] (hereinafter "Kohonen") in which "feature vectors" representing the properties of each document, typically as histograms showing the relative frequencies of occurrence of each of the words in a dictionary, are mapped on to the nodes of a "self-organising map". The map is generally in the form of a two-dimensional array of nodes and can be "trained" by an iterative process to align the nodes with the input vectors resulting in a map in which each

[1] "Self Organisation of a Massive Document Collection", IEEE Transactions on Neural Networks, Vol 11, No 3, May 2000, pages 574 - 585

document is represented by (x,y) position co-ordinates. The position of the document on the map is therefore determined by its content, and documents which are very close in content will cluster together when the map is viewed on a screen.

4 The invention recognizes that the user of such a system needs to be aware of the information associated with the selected node(s) in order to be able to check the selected information and/or refine the search. It therefore provides a user interface which allows the user to associate displayed points on screen with representations of the information items to which they relate.

5 In order to distinguish them from the cited prior art, the claims have been restricted to the case where the information items are metadata related to captured video material. In the latest form, submitted for consideration at the hearing, claim 19 reads:

> "An information retrieval method for a video processing apparatus in which a set of stored distinct information items which are metadata related to captured video material map to respective nodes in an array of nodes by mutual similarity of the information items, so that similar information items map to nodes at similar positions in the array of nodes; the method comprising the steps of:
> defining a search criterion for selecting a subset of the stored information items;
> detecting those positions within the array of nodes corresponding to the selected information items; and
> displaying display points which are at positions within a display area on a user display corresponding to the selected information items;
> the graphical user interface also automatically and sequentially displaying in time pictorial representations of the captured video material to which the selected information items relate.";

claim 1 is to a video processing apparatus comprising storage means, operable to store a set of the information items, and an information retrieval system having features corresponding to the above method steps; claim 24 is to computer software having program code which, when loaded onto a video processing apparatus, configures the apparatus to carry out the above method; and claim 25 is to a providing medium for providing the program code (which can be a storage medium or a transmission medium).

## The law and its interpretation

6 Section 1(2) reads (emphasis added to show the particular provisions in issue):

> "It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of –
> (a) a discovery, scientific theory or mathematical method;
> (b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;
> (c) a scheme, rule or method **for performing a mental act**, playing a game or doing business, or a **program for a computer**;
> (d) the **presentation of information**;

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

7 As explained in the notice published by the Patent Office on 2 November 2006[2], the starting point for determining whether an invention falls within the exclusions of section 1(2) is now the judgment of the Court of Appeal in *Aerotel/Macrossan*[3], although it is not expected that this will fundamentally change the boundary between what is and is not patentable in the UK, except possibly for the odd borderline case. In *Aerotel/Macrossan* the court reviewed the case law on the interpretation of section 1(2) and approved a new four-step test for the assessment of patentability, namely:

1) Properly construe the claim

2) Identify the actual contribution

3) Ask whether it falls solely within the excluded matter

4) Check whether the contribution is actually technical in nature.

I will therefore apply this test to the present invention.

## Arguments and analysis

First and second steps

8 The first step of the *Aerotel/Macrossan* test is to construe the claims, but this not in issue.

9 The second step is to identify the contribution made by the invention. Mr Jackson thought that, having regard to the test in paragraph 43 of *Aerotel/Macrossan* of what has been added to human knowledge, the contribution was two-fold. In his view, first, the invention had contributed a video processing device which, in comparison with the prior art, improved the speed of navigation through a large volume of video data because the sequential display and search of representations of the captured video material in the form of metadata avoided the need to trawl through a large number of potentially long video clips. Second, the storage and processing of the information as metadata rather than the full video clip reduced the power needed to process the information.

10 Mr Jackson was at pains to point out that neither Kohonen nor the prior art cited by the examiner (showing similar mapping techniques) specifically mentioned searching information in the form of video metadata; all of these documents were directed to the search of the actual content. I note that in some cases the content

[2] http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter.htm

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

may be video material - see eg US 5794178 (Caid) at col 16 line 45 – col 17 line 25 and US 5877766 (Bates) at col 6 lines 37-59 and col 13 lines 20-36, although I accept that none of the documents mention metadata.

11 I do not think this is necessarily decisive of the contribution which the invention makes in the sense explained in *Aerotel/Macrossan* at paragraph 43. Mr Jackson's argument turns on whether there is any contribution to the invention in the fact that video information is searched in the form of metadata rather than the video clip itself, and I explored this at the hearing.

12 The examiner did not accept Mr Jackson's argument, believing that it was common general knowledge in the art of searching video material to search by means of metadata. Mr Jackson suspected that metadata might have been used in some instances of image searching via the Internet, but went no further than that. Although the point was perhaps not argued in great depth, I accept the examiner's view. There is certainly nothing unusual in the generation of metadata about video material, and I do not think the contribution of the invention lies in the fact that metadata is being searched rather than the whole content of a video clip. I think that the specification as filed places reinforces this view. The passage at page 4 lines 22-30 merely mentions video material and metadata as examples of a wide range of types of information that can be processed by means of the invention. It specifically mentions the association or linkage of audio or video material with metadata defining it in textual terms, and Figure 13 illustrates a camcorder with a disk or other random access storage on which metadata relating to the captured video material can be stored. However, as I read the description of Figure 13 at page 15 lines 12-20, this seems to be a conventional item of equipment rather than a new piece of hardware which might be part of the contribution made by the invention. All this suggests to me that by the earliest date of the invention there was nothing unusual in searching video material by means of associated metadata.

13 Mr Jackson also argued that the storage means of claim 1, defined as "operable to store a set of distinct information items which are metadata" provided a contribution to the invention. In his view, by analogy with the special exchange in the Aerotel patent (see paragraphs 50-57 of *Aerotel/Macrossan*, particularly paragraph 53) the storage means was a new piece of apparatus because it was storing metadata and so the overall result was a new physical combination of hardware constituting a new video processing apparatus. I do not accept this. Even if I were minded to accept that the contribution lay in the use of metadata, like the examiner I do not see how the storage means could become a new piece of hardware merely by virtue of the type of information stored on it. I do not therefore think that the contribution is in reality a new form of video processing apparatus.

14 Paragraph 43 of *Aerotel/Macrossan* makes clear that the contribution of the invention must still be assessed as a matter of substance rather than the particular form in which the invention is claimed. Accordingly, it seems to me that, as the specification suggests at page 3 lines 8-12, the contribution lies in the area of associating selected information items with representations thereof for greater awareness, rather than in the specific use of metadata to speed up the searching of video material and to reduce the power requirements for storing and

processing video information. I therefore consider that, whatever the form of the claims, the contribution of the invention of the amended application is allowing the user of a self-organising map of the Kohonen type to have a greater awareness of the information actually represented by the display points, in the case where the information is video metadata, by displaying selected information items together with a sequential display of pictorial representations of the captured video information to which the selected items relate.

Third step

15 I must now consider whether this contribution lies solely in excluded matter, bearing in mind that the examiner has maintained arguments under the computer program, presentation of information and mental act heads of exclusion under section 1(2).

16 Mr Jackson emphasised that *Aerotel/Macrossan* was not necessarily trying to exclude all computer programs from patentability, and thought that it needed to be read in conjunction with earlier case law. He took me back to the judgment of the Patents Court in *CFPH LLC's Application* [2005] EWHC 1589 (Pat), [2006] RPC 5, in which the Deputy Judge said (paragraph 104) that the question to be asked was whether an artefact or process was new and non-obvious because there was a computer program, and that if this was not the case then the computer program was merely a tool and the invention would not be about computer programming at all. As Mr Jackson stated at the hearing:

> "Essentially, what the inventors have done with this computer program is to provide a tool for making a video processing apparatus run more quickly and allow navigation to be quicker and easier. For me, although it is to a computer program, it is not to a computer program as such."

17 I do not think this argument follows from *Aerotel/Macrossan*. Paragraph 22 of the judgment cautions me against excluding the invention just because it involves the use of a computer program. However under the third *Aerotel/Macrossan* step I still have to decide whether the contribution is realised solely as a computer program: if it is then I think it is clear from paragraph 45 that the fourth step – deciding whether the contribution is technical in nature – is redundant and the invention will not be saved by reference to a technical effect (such as speeding up video processing and making navigation of video material quicker and easier in the present case). The fact that a new "tool" may have been provided to do this does not solve the question, as paragraph 71 explains.

18 It would seem to be common ground in the light of Mr Jackson's comment above that the contribution of the invention lies in a computer program, in that a set of procedures have been devised to control the operation of a computer (which can be a camcorder as shown in Figure 13 of the application). However, going back to the contribution that I have identified above, it seems to me that it consists of nothing in substance beyond a computer program "up and running" (to use the language of paragraph 73 of *Aerotel/Macrossan*), and that the hardware is entirely conventional. The program is a tool controlling an operation only in the sense that it controls what is being displayed on the graphical display unit of the computer: as the examiner pointed out it is not causing the computer to operate

in any new physical way.

19 Thus in my view the contribution of the invention lies solely in a computer program. Even if I am wrong on that, there is still the presentation of information head of exclusion to consider. Mr Jackson put no specific arguments on this to me at the hearing. However, it seems to me that the contribution is in substance about what is displayed – pictorial representations of the video items to which the selected metadata items relate – and therefore relates solely to the presentation of information.

20 The examiner also considers the contribution to relate solely to a mental act. I am somewhat doubtful that the contribution I have identified can be regarded solely as a mental act, even if it is related to the way in which video material is searched. However I will make no finding under this head given that there is some uncertainty about whether the exclusion extends to electronic means of what could have otherwise been done mentally (see paragraph 13 of the above Office notice).

Fourth step and other matters

21 Having found that the contribution lies solely in excluded matter, as explained above I do not need to go on to consider whether it has a technical effect. In correspondence Mr Jackson drew attention to my decision BL O/010/07 on an earlier Sony application. In this decision I identified a possible technical contribution in easier navigation through metadata and was prepared to allow the application to go forward. Mr Jackson did not in fact place any reliance on this decision at the hearing, believing it on further consideration to be of limited relevance. However I think it appropriate to mention that whilst I did see the possibility in O/010/07 of a technical contribution in the way in which video metadata was communicated, that did not mean that claims to matter excluded under the third *Aerotel/Macrossan* step (a data structure) could be allowed: it would be necessary to restrict the claims to the incorporation of the data structure into a communications network to reflect the contribution in a way which satisfied both the third and fourth steps.

22 In the present case, for the reasons explained above, I do not consider that the “hardware” aspects can form part of the contribution. Having read the specification of the present application, I do not see that any limitation of the claims akin to that in O/010/07 is possible which would define a contribution within the third *Aerotel/Macrossan* step.

## Conclusion

23 I therefore find the invention of the amended claims to relate to a computer program as such and to the presentation of information as such, and therefore to be excluded from patentability under sections 1(2)(c) and (d). Since no saving amendment appears possible, I refuse the application under section 18(3).

## Appeal

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

**R C KENNELL**
Deputy Director acting for the Comptroller