PATENTS ACT 1977

APPLICANT	Sony United Kingdom Limited
ISSUE	Whether patent application number GB 0207020.9 complies with section 1(2)
HEARING OFFICER	R C Kennell

DECISION

Introduction

1   Application no GB 0207020.9 was filed on 25 March 2002 and published under serial no. GB 2386978 A on 1 October 2003. 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 11 October 2006, at which the applicant's patent attorney, Dr Jonathan DeVile of D Young & Co, gave a helpful slide presentation highlighting the applicant's arguments. The examiner, Mr Jake Collins, assisted via videolink.

3   Dr DeVile's argument at the hearing was based on the law as it stood in the light of *CFPH LLC's Application* [2005] EWHC 1589 (Pat), [2006] RPC 5 and subsequent case law emphasising that the test proposed in *CFPH* was not inconsistent with the "technical contribution" approach which had previously governed the assessment of patentability under section 1(2). However on 27 October 2006, shortly after the hearing, the Court of Appeal handed down its judgment in the matters of *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan's Application* [2006] EWCA Civ 1371 (hereinafter "*Aerotel/Macrossan*") approving a new test for patentability (explained further below). The applicant was therefore given an opportunity to make further submissions in the light of this case.

4   Dr DeVile replied in a letter dated 7 December 2006 arguing that the invention as presently claimed was still patentable. However, in the event that I did not agree, he submitted two auxiliary sets of claims for my consideration.

The invention

5   The invention essentially concerns a data structure for communicating

metadata, which, following amendment of the specification to distinguish the prior art, is presently defined in claim 1 as follows (see below regarding the italicized wording):

> "A data structure *for communicating metadata describing the content of at least one shot or sub-shot of information material between a network of devices forming metadata nodes, each of the devices being interconnected by a data communications network, and the information material being contained on a data carrier*, said data structure comprising
> a volume identification defining a data carrier on which said information material is contained,
> at least one shot identification defining said at least one shot or sub-shot within said information material, and
> at least one type of metadata associated with the content of the shot or sub-shot, wherein the volume identification is arranged at a first hierarchical level and the shot identification is arranged at a lower hierarchical level, said volume identification and said shot identification being defined as tree nodes in accordance with said first and said lower hierarchical levels, said volume identification having a start point and an end point defining a volume node and said shot has a start point and an end point defining a shot node and said metadata describing the shot or sub-shot is contained within said shot hierarchical level." ;

claims 13, 14, 15 and 17 to respectively a signal, a data carrier, a network of devices and a data communications network all include this data structure.

6   Although the invention is not restricted as to the type of information material to be processed, it is specifically described in relation to a system for generating audio and/or video (a/v) productions in which a camera generates the a/v material and has an adapter box for generating metadata describing the content or other attributes of the material. A range of processing devices use the metadata for various purposes (eg storage, navigation, editing) and these are arranged in a network with each device forming a metadata node. The hierarchical arrangement of claim 1 provides a systematic format for interrogating and retrieving metadata, and the hierarchy may be defined by a schema in accordance with predetermined rules, eg a mark-up language such as XML, for compatibility with a wide range of application programs. Figures 6A and 6B illustrate a metadata string in XML form.

Auxiliary requests

7   The first auxiliary request filed by Dr DeVile limits the claims to a data communications network incorporating the data structure, based on present claim 17. The second auxiliary request includes the further restriction that the metadata contained within the shot node includes a resource identifier providing a location address of a metadata resource representing a substantial amount of data.

The law and its interpretation

8   The examiner's objection, which arises under section 1(2)(c) of the Act, is that the invention is not patentable because it relates to a program for a computer

as such. As explained in the notice published by the Patent Office on 2 November 2006[1], 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*, 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.

9   Much of Dr DeVile's argument at the hearing was directed to establishing that the invention made a technical contribution. On the basis of the law as it then stood I would agree that if I had been able to identify a contribution to the art which was of a technical nature, then that would have been a pointer to it lying outside the excluded area as such.

10   However, that is not the approach adopted by *Aerotel/Macrossan* even if it may in practice yield the same result in the vast majority of cases. As stated at paragraphs 45 – 47 of the judgment, reconciling the new test with the earlier judgments of the Court of Appeal in *Merrill Lynch* [1989] RPC 561 and *Fujitsu* [1997] RPC 608, 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 the point. Thus, as I explained in my recent decision in *Khan's Application* (BL O/356/06), the presence or otherwise of a technical effect is a subsidiary factor, to be considered only where the invention passes the first three *Aerotel/Macrossan* steps.

11   In the present case it therefore seems to me that if the contribution made by the invention, considered as a matter of substance rather than the form of claim (see paragraph 43 of *Aerotel/Macrossan*), consists solely of a program for a computer, then the invention will be excluded under section 1(2) and will not be saved by reference to a possible technical effect. I should not now give the applicant benefit of any doubt as to whether the invention arguably covers patentable subject-matter, as paragraph 5 of the judgment makes clear.

12   Nevertheless, it bears emphasising that the exclusion of section 1(2) applies only where the invention relates to excluded matter <u>as such</u>. I must therefore be satisfied that the contribution lies <u>solely</u> in a computer program before finding against the applicant.

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1 http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter.htm

13   Finally, I note that by virtue of section 130(7) of the Act section 1(2) is so framed as to have, as nearly as practicable, the same effects as the corresponding provisions of the European Patent Convention. I should therefore pay due regard to the decisions of the Boards of Appeal of the European Patent Office under Article 52 of the EPC (two of which were particularly relied on by Dr DeVile at the hearing). However, such decisions do not bind me, and the reliance that I can place on them must now be limited in view of the contradictions in the Boards' decisions highlighted by the Court of Appeal in *Aerotel/Macrossan* and its express refusal to follow EPO practice.

Arguments and analysis

<u>The contribution made by the invention as now claimed</u>

14   Having regard to the first step of the *Aerotel/Macrossan* test, the construction of the claims has not been disputed. However, for the avoidance of doubt, I should mention that I do not regard the italicized wording in claim 1 quoted above as part of the data structure of the invention but merely, in accordance with the usual canons of construction, as stating the purpose for which the data structure must be suitable.

15   As regards the remaining steps, Dr DeVile in his letter of 7 December 2006 states:

> "In particular, referring to the new tests under Aerotel/Macrossan, the contribution provided by the invention according to claim 1 is to provide a data structure with a hierarchical arrangement of nodes which includes a volume identification at a first hierarchical level and a shot identification arranged at a lower hierarchical level and metadata describing the shot or sub-shot contained within the shot hierarchical level. Concerning step 3 of the Aerotel/Macrossan tests, as presented at the hearing, a data structure defined and arranged in accordance with claim 1 does not fall solely within subject matter which is excluded because the data structure provides a potential for data processing nodes to more efficiently access metadata which describes information held on a volume (data carrier) which is separate to the data structure. Furthermore, concerning step 4, this contribution is technical in nature because defining the metadata associated with a plurality of shots describing material which is recorded on a data carrier provides an arrangement which can allow a user to navigate more easily through material and/or identify attributes of that material more easily."

16   I accept that this correctly defines the contribution made by the invention for the purposes of the second step. I observe that it is worded differently from the undisputed definition of the advance in the art in Dr DeVile's letter of 3 February 2006, for the purposes of the old *CFPH* test, as "a particular hierarchical storage arrangement of metadata within a data structure with respect to a data carrier on which the information to which the metadata relates is stored, and with respect to the shots and/or subshots of that information". However I do not think there is any difference of substance here.

<u>Whether the contribution is solely a computer program</u>

17   The examiner's objection is founded on an earlier decision of the comptroller, *Oracle Corporation* (O/255/05). This related to a computer-implemented data structure for storing and correlating different versions of data objects such as computer program files or modular elements of computer programs. In refusing the application, the hearing officer held that the invention was an advance in the field of computer programming that nobody outside that field would understand or appreciate and observed that "a data structure is essentially nothing more than a computer programming technique".

18   At the hearing Dr DeVile sought to counter this on the grounds that the claimed invention (i) was not a computer program, (ii) was defined by the technical character of the system in which it was used, and (iii) provided a technical contribution. It follows from my analysis of *Aerotel/Macrossan* above that (ii) and (iii) will not assist, at least for the present claims, if I find under (i) that the contribution is nothing more than a program for a computer.

19   Although not doubting that the decision in *Oracle* was correct on its facts, Dr DeVile questioned the generality of the hearing officer's observation and opined that it did not necessarily follow that a data structure was a computer program as such. He did not think that the data structure in *Oracle* was the same sort of structure as that now claimed: *Oracle* was concerned with the organization of computer program elements within a computer, whereas the present invention was a data format for communicating metadata in a way which provided a technical contribution as explained below.

20   As explained in his letter of 3 February 2006, Dr DeVile considered that a computer program was necessarily a predetermined set of instructions which could be executed on a computer to control its operation, and could in all cases be represented as a sequence of steps or operations. He thought that a data structure did not fulfil these requirements: a better analogy was a signal packet structure in the field of telecommunications, which would under no circumstances be regarded as a computer program as such.

21   Whilst this argument may seem superficially attractive, I do not think that the analogy with a signal packet structure holds good. As described in the application, the data structure provides a facility for interrogating and retrieving metadata and for communicating it between the metadata nodes of the data network, typically between different applications programs via a suitable interface. It seems to me therefore that the hierarchy of the data structure provides a part of the instructions whereby a computer - and in practice I do not think it could be done other than by a computer - is enabled to interrogate, retrieve and communicate the metadata. I consider this suffices for the data structure to constitute a computer program as such for the purposes of section 1(2), even if it requires in use to be interrogated by other programs.

22   I am not persuaded otherwise by Dr DeVile's argument that the data structure provides a potential for data processing nodes to more efficiently access metadata which describes information held on a separate data carrier. That

may foreshadow a technical effect when the data structure is operative to access metadata, but to my mind it does not make the claimed data structure any less a computer program as such. It follows, therefore, that the claimed data structure fails the third *Aerotel/Macrossan* step.

Relevance of technical effect

23   As I explained above, I think this failure makes any check for a technical effect redundant at least as regards the present claims. I do not therefore think that any useful purpose would now be served by establishing that the data structure of claim 1 is defined by the technical system in which it is used, or provides a technical contribution, according to heads (ii) and (iii) of Dr DeVile's argument at the hearing. Accordingly, I do not propose to go over in any detail the case law cited at the hearing to support these arguments - as regards (ii) the decisions of the Technical Boards of Appeal in *BBC* (T 0163/85) and *Philips* (T 1194/97), and as regards (iii) the decisions of the comptroller in *Sun Microsystems Inc* (BL O/057/06) *ARM Limited* (BL O/066/06).

24   The two Board of Appeal decisions were cited by way of analogy to show that there was a "physical reality" which was characterised by the technical features of the system in which it occurred (since it was for communicating metadata describing a content of at least one shot or sub-shot). However, these were decided under the "presentation of information" exclusion (reflected in section 1(2)(d) of the Act) and do not seem to me to be especially persuasive in any event. The observations made by the hearing officers in *Sun Microsystems* and *ARM* about the presence of a technical contribution do not I think now sit altogether easily with the *Aerotel/Macrossan* test. Although the Patent Office notice identifies *ARM* as one of the cases which would appear to be patentable under the new approach as well as the old, it would appear to be distinguished from the present case in providing a contribution going beyond a computer program as such.

25   Nevertheless, I do not think that I can entirely dismiss any consideration of whether there is any technical effect. Even if the present claims to a data structure fall at the third *Aerotel/Macrossan* step, the same may not be true for the auxiliary claim requests submitted by Dr DeVile. At the hearing, he argued that there was a technical contribution in that the data structure mapped the metadata to each shot of information material on the data carrier and separated it from that material in a way which allowed the metadata to be communicated to different data processing devices so as to be accessed only when needed or available. He thought that there was an underlying technical arrangement of the data structure in the arrangement of tree nodes which provided an efficient form in which to communicate the metadata to the metadata nodes in a compatible, convenient and efficient way with improved bandwidth efficiency. In the latest correspondence (see above) he suggests that the contribution is technical in nature because the user would be able to navigate more easily through material and to identify attributes of it more easily.

26   Dr DeVile drew particular attention at the hearing to the embodiment of the

invention where the metadata was a proxy version of a high-definition video (HDV) shot. He said there was a technical problem in sorting through HDV material in an efficient way, and a technical advance in having a proxy version available for reference when manipulating the HDV material, particularly where the metadata included a "resource identifier" providing a location address at which the metadata could be accessed and downloaded only when required (the subject of the second auxiliary request).

27   However, pointing out that processes such as sorting and editing were not generally regarded as technical, the examiner felt that Dr DeVile's argument was reliant on specific embodiments to introduce the necessary technical features. Dr DeVile considered that the claims on file brought out an inherently technical advantage of communicating metadata in a way which allowed devices receiving it to associate it with passages of video material on a separate data carrier.

28   Having considered all these arguments I accept that the data structure has the potential to bring about a technical effect but I do not think this is an argument for allowing the claims to the data structure itself, which must in my view remain excluded. However, it seems to me that claims according to either of the auxiliary requests, which require the incorporation of the data structure into a data communications network, would satisfy all the *Aerotel/Macrossan* steps. The incorporation of a hierarchical database structure into a communications network of data processing devices so that metadata can be communicated between them with the advantages outlined above at paragraph 25 provides in my view a contribution which is not disclosed or foreshadowed by the prior art cited on this application, which is not solely a computer program, and which is technical in nature.

Conclusion and next steps

29   I therefore find that claims 1 – 14/16 of the present claims relate to a computer program as such and are therefore excluded from patentability under section 1(2). This includes claims 13 and 14 respectively to a signal representing the data structure and to a data carrier containing such a signal.

30   However, I find that claim 17 to a data communications network (on which the first auxiliary request is based) is not so excluded. (Claim 15 to a network adapted to communicate metadata as a data structure according to previous claims would seem to be essentially of similar scope to claim 17).

31   In consequence, the application will be remitted to the examiner to continue the prosecution of the application. The period prescribed by rule 34 for putting the application in order expired on 25 December 2006 following an extension under rule 100 on account of an irregularity in procedure. However, it is open to the applicant to apply under rule 110(3) to extend the period for a further two months.

Appeal

32   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