



incompatibility by getting the file system to start looking from a different level in the hierarchy in the storage medium directory structure for the requested file without the need for string substitution.

- 5 As currently amended, there are two independent claims (claims 1 and 11).  
Claim 1 reads:

A method of controlling how a portable computing device interacts with a removable file storage medium in order to access files stored on that medium, in which the device uses an operating system within a first directory hierarchy and the removable file storage medium uses a second file directory hierarchy that is incompatible with the first; the method comprising the following steps:

- (a) an application, running on the operating system, sending a file request with a path that conforms to the first directory hierarchy to a file system;
- (b) the file system receiving that file request and, without manipulation or substitution of the path, performing a directory lookup using a start location in the path that (i) is different from the start location defined in the file request and (ii) results in a file request path that conforms to the second directory hierarchy.

- 6 Claim 11 relates to a portable computing device programmed to enable an application running on it to access files stored on a removable storage medium, in accordance with the above method steps.

### **The law and its interpretation**

- 7 Section 1(2) reads (emphasis added):

“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.**”

- 8 The correct approach for assessing patentability is now governed by the judgment of the Court of Appeal in *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan’s Application*.<sup>1</sup> (“*Aerotel/Macrossan*”). In this case 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

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<sup>1</sup> *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan’s Application* [2006] EWCA Civ 1371, [2007] RPC 7

- 3) Ask whether it falls solely within the excluded matter
- 4) Check whether the actual or alleged contribution is actually technical in nature.

9 The operation of this test is explained at paragraphs 40-48. 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. 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*<sup>2</sup> and *Fujitsu*<sup>3</sup>, 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. If a claim fails the third step, it cannot be “revived” by the fourth.

### **Arguments and analysis**

10 The examiner had maintained objection that the invention was excluded as a computer program *as such*, but Miss Harper argued that it made a contribution which did not lie solely within this excluded area and which was technical in nature. I shall deal with these arguments in accordance with the above four-step test.

#### *Construction of the claims*

11 The construction of the claims is not disputed. They are directed towards a method of controlling how a portable computing device interacts with a removable file storage medium, and such a device programmed to enable an application running on it to access a removable file storage medium. The storage medium uses a file directory hierarchy that is incompatible with that used by the operating system of the device.

12 The claims do not, however, define *how* the directory lookup is achieved and thus cover all means of such achievement *except* for manipulation or substitution of the path which is explicitly disclaimed. The applicant argues that it is not essential to define the specific manner in which the directory lookup is performed and how conformity with the hierarchy on the storage medium is assured and maintains that the skilled person having been informed of the present invention would be well aware how to achieve these aims. Whilst this matter may touch on the clarity and inventiveness of the claims, to which the examiner has also objected, I do not consider that it prevents me from coming to a decision on the patentability question.

#### *Identification of the contribution of the invention*

13 Again, there is no dispute between the agent and the examiner over the contribution made by the invention. Miss Harper presented the contribution as:

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<sup>2</sup> [1989] RPC 561

<sup>3</sup> [1997] RPC 608

“Performing a directory lookup using a start location that is different from that in a file request and that conforms to a second file directory hierarchy thereby enabling a computing device to access files on a removable storage medium which uses the second directory hierarchy.” In other words, the contribution enabled interaction between a computing device and a removable storage medium that was not previously possible.

- 14 Miss Harper also drew my attention to paragraph 12 of *Press Star*<sup>4</sup> in which the Hearing Officer accepted that advantages resulting from the invention should be considered to be part of the contribution, so she thought the “enabling” clause in the definition of the contribution was appropriate here. Be that as it may, it seems to me that the enabling clause defines the result of the directory lookup rather than an advantage. However, nothing turns on it and I accept Miss Harper’s assessment of the contribution.

*Whether the contribution relates solely to excluded matters*

- 15 Miss Harper’s starting point was that the question of whether the substance of the invention was implemented by means of a program for a computer was not the correct test to apply.
- 16 Firstly, Miss Harper argued that there was no basis for that test in the *Aerotel* decision and she referred me to the Patent Office Practice Notice<sup>5</sup> at paragraph 4 which says “... *the Office takes the view that Aerotel/Macrossan must be treated as a definitive statement of how the law on patentable subject matter is now to be applied in the UK*”. The question of whether the substance of the invention was implemented by means of a program for a computer was never discussed in the *Aerotel* judgment (she said).
- 17 Secondly, Miss Harper argued that applying such a test would lead to a result that contradicted the reasoning given in the *IBM/Data Processor Network*<sup>6</sup> decision. In support of her argument, she pointed to paragraph 26 of the *Aerotel* judgment in which Jacob LJ summarized the three approaches that have been followed by the EPO in assessing whether subject matter is excluded as being a computer program *as such*. She noted that in the discussion of the technical effect approach under point (2), Jacob LJ concluded that “*This is the approach adopted by the Court of Appeal in Merrill Lynch. It has been followed in the subsequent decisions of this Court, Gale and Fujitsu*” and observed that this was the test applied by the EPO Boards of Appeal in various cases, including *IBM/Data processor network*. Miss Harper also referred to paragraph 38 of the *Aerotel* decision which Jacob LJ observed that “... *this court is bound by its own precedent: that decided in Merrill Lynch, Gale and Fujitsu - the technical effect approach with the rider*” - which, as he previously observed, was the same as the test applied in *IBM/Data processor network*. Finally, Miss Harper referred to paragraph 41, where Jacob LJ noted that the structured approach provided by the four step *Aerotel* test, was consistent with what has been decided previously

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<sup>4</sup> BL O214/07

<sup>5</sup> <http://www.ipo.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter.htm>

<sup>6</sup> EPO Board of Appeal Decision T 06/83

by the Court of Appeal, and that it was a re-formulation in a different order of the *Merrill Lynch* test. She argued that Jacob LJ in the *Aerotel* decision concluded that the test that was applied in the *IBM* decision was the same as that applied in *Merrill Lynch*, *Gale* and *Fujitsu*, and was the same as the four step *Aerotel* test. In her submission, the outcome of that EPO decision ought therefore to be consistent with any outcomes using the *Aerotel* questions.

- 18 Thirdly, Miss Harper believed that applying such a test was contrary to the *Sun*<sup>7</sup> decision. Paraphrasing paragraphs 22 and 23, she emphasised that it cannot be right to say that an invention when implemented in software is not patentable, when implemented in hardware it would be patentable. She acknowledged that I am not bound by previous hearing officers' decisions but she noted that the Practice Notice<sup>5</sup> said that the *Aerotel* decision was not believed to fundamentally change the boundary between what was and was not patentable. Whether something was implemented in software or not was not relevant to determining whether it was patentable subject matter or not. She said that if it were the case that this had now changed, and under the *Aerotel* decision we must now look at whether something was implemented in software or not as being definitive as to whether or not it was patentable then, in her submission, that would represent a significant change in the boundary between what was and was not patentable. If anything that was implemented in software were automatically excluded as being a computer program *as such*, then that would be a significant change in the boundary.
- 19 I agree with Miss Harper that questioning whether the substance of the invention is implemented by means of a computer program is not the correct test. Indeed, in the course of the hearing, I made it plain that I was mindful of the *Aerotel* decision which warns of the potential trap in saying "*Well, the claim involves the use of a computer program so it must be excluded*". Simply because an invention is implemented by a computer does not automatically exclude it from patentability: neither, of course, does it automatically render it patentable. To decide which side of the line the invention falls as regards patentability, is a question of applying the four tests and, in the case of a computer program, deciding whether the contribution made by the computer program is solely a computer program *as such* (in which case it would be unpatentable), or whether there is something extra which takes it outside the exclusion.
- 20 I shall now consider Miss Harper's second point. Referring back to the three EPO approaches discussed in paragraph 26 of *Aerotel*, Jacob LJ plainly states in paragraph 29: "*All we decide now is that we do not follow any of the trio*". In addition, in paragraph 26 sub-paragraph (2), Jacob LJ clearly distinguishes between the *Merrill Lynch* approach adopted by the UK Court, namely, "*the technical effect approach with the rider*" and the EPO Board of Appeal approach without the rider which it applied to the *IBM* decision. I therefore do not think that Miss Harper is correct in her argument that the test that was applied in the *IBM* EPO decision is the same as that applied in *Merrill Lynch*, *Gale* and *Fujitsu*, and is the same as the four step *Aerotel* test. I must apply the law as handed down by the UK Courts to the facts of the case before me – in so doing, I am not bound by previous Office or EPO decisions.

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<sup>7</sup> *Sun Microsystems Inc* BL 0/057/06

- 21 Addressing step (3) of the test, Miss Harper argued that the contribution provided by the invention solved a technical problem and hence went beyond a computer program as such. To support her case, she submitted that the facts of the claimed invention were at least analogous to those in *IBM/Data processor network*<sup>6</sup>. In the present invention, one device is enabled to gain access to programs or data held on files on a removable storage medium. In *IBM*, one terminal in a data processing network is enabled to communicate with multiple application programs to gain access to data or programs held at different terminals within the network. In *IBM*, the problem that was overcome was that, in the prior art, a terminal was only allowed to interact with one application at any time, the application that initiated the interaction. Until the application released that terminal, that terminal could not interact with any other applications. This problem that the *IBM* invention was seeking to overcome was therefore purely a software generated problem and was solved by means of control functions which improved the communication facilities between the programs and files held at different terminals in the network. It was a software solution; and in paragraph 4 of the Reasons for the Decision the Board of Appeal noted that it did not involve any changes in the physical structure of the processors or the transmission network.
- 22 Miss Harper also referred me to the first paragraph under point 6 in the Reasons for the Decision which says: “*The Board holds the view that an invention relating to the coordination and control of the internal communication between programs and data files held at different processors in a data processing system having a plurality of interconnected data processors in a telecommunication network and the features of which are not concerned with the nature of the data and the way in which a particular application program operates on them, is to be regarded as solving a problem which is essentially technical. Such an invention is therefore to be regarded as an invention within the meaning of Article 52(1) EPC*”.
- 23 Comparing the facts in *IBM* with those of the present invention, Miss Harper pointed out that the limitation in the prior art in relation to the present invention was due to software features. She noted that the examiner of the present case concluded that the problem solved was that of overcoming incompatibility between software – with which she agreed. She also agreed that the solution of the present invention was provided by means of software. In her submission, those facts did not mean that the invention is excluded from patentability: they were the same facts as were present in *IBM*, which Jacob LJ considered to be applying the same test as was used in *Aerotel* – only reformulated in a different order.
- 24 Miss Harper said the contribution provided by the invention enabled a device to access physical memory on a separate storage medium. This gave improved flexibility of the device and enhanced operation: it enabled the device to perform functionality that previously it could not, by obtaining and processing data that was held in files in a removable storage medium. In her submission, this was a contribution outside the field of computer programming. It went beyond mere software as it related to the physical operation of the device – the physical communication between two pieces of hardware – and it enabled functionality that could not previously have been achieved. In her view, this was a technical

invention, and she drew support from the *IBM* decision which concluded that this type of interaction between two different devices was essentially technical in nature: it was concerned with communication between programs and data files held in different hardware. Hence the present invention related to patentable subject matter.

- 25 I pressed Miss Harper on what she meant by “the physical operation of the device” and the nature of the physical communication between the two pieces of hardware. Miss Harper explained that the removable storage medium constituted physical memory where data and programs could be stored and the computing device comprised the usual components of a computing device. The invention enabled physical access by the computing device of the data stored in the memory on the removable storage medium. She reiterated her view that accessing the physical memory on the medium by virtue of a software enablement was a technical operation.
- 26 It 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. Nevertheless, it bears emphasising that the exclusion of section 1(2) applies only where the invention relates to excluded matter as such. I must therefore be satisfied that the contribution lies solely in a computer program before finding against the applicant. I observe that Office decisions are not binding on me and I must make my decision based on the facts of this case.
- 27 I have carefully considered Miss Harper’s submissions which, if I have understood her correctly, were cited by way of analogy to show that claims to a process relating to the internal communication between programs and data files held at different locations and also involving the physical step of performing a directory lookup were patentable.
- 28 So does the contribution fall solely within the excluded subject matter? From a close reading of the specification, it is clear to me that the compatibility realized by the invention is not, in substance, between incompatible hardware. It is between incompatible file directory hierarchies and these are, themselves, each a program for a computer. The problem solved is thus that of overcoming incompatibility between software and the solution lies in the manner in which the second file directory is accessed. Despite Miss Harper’s valiant efforts to persuade me otherwise, I cannot agree that the internal communication between a computing device and the storage medium is a physical process which involves a technical operation. I am in no doubt that the solution is carried out by an additional piece of software which enables the computing device to talk to the storage medium. I draw support for this view from the specification at lines 23-27 of page 6: “*In practice, the file system is programmed [my emphasis] such that it is aware of where within the target directory hierarchy the client requests are located... When a file system receives a request for a certain path, it will*

*locate the requested file or directory by looking up each element of the path until the entire path has been scanned”.*

- 29 I therefore find that the contribution made by the claims boils down to nothing more than a computer program and hence sits squarely within the computer program exclusion.

*Check the contribution is actually technical*

- 30 I do not need to apply the fourth step of the test as the contribution has failed the third step.

### **Conclusion**

- 31 I therefore find the invention as claimed is excluded under Section 1(2) in that it relates to a computer program as such. I have carefully read the specification but I do not see any possible saving amendment. I therefore refuse the application.

### **Appeal**

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

**MRS S E CHALMERS**

Deputy Director acting for the Comptroller