

individual textile substrates such that no individual textile substrate in the series carries a pattern that is superimposable upon the pattern of any other textile substrate in the series, by:

- (a) forming a first virtual layer and a second virtual layer, said first layer being referred to as a base layer and said second layer being referred to as an overlay layer, each of said layers storing pattern data;
- (b) establishing an overlay pattern library of predetermined overlay layers, each of said predetermined overlay layers having a pattern that is not superimposable upon the pattern of any other overlay layer in said library; and
- (c) forming a series of composite patterns, each comprised of a base pattern and at least one overlay pattern, said series being formed by randomly selecting overlay layers from said library until each overlay layer is chosen, and

using said series of randomly ordered virtual composite patterns to pattern a series of textile substrates.

The law

- 5 The examiner raised objections under section 1(2) that the invention is not patentable as it relates to a computer program and is an aesthetic creation. The relevant parts of section 1(2) read as follows (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.**

- 6 The test to be applied when determining whether an invention relates to excluded matter is that laid down by the Court of Appeal in its judgement *Aerotel/Macrossan*¹. That test comprises four steps:

- (1) Properly construe the claim
- (2) Identify the actual contribution
- (3) Ask whether it falls solely within the excluded matter
- (4) Check whether the actual or alleged contribution is actually technical in nature.

¹ *Aerotel Ltd v Telco Holdings Ltd Macrossan's Patent Application* [2006] EWCA Civ 1371

- 7 In its subsequent judgment in *Symbian*², the Court made clear that the *Aerotel* test is not intended to provide a departure from the requirement set out in the previous case law that the invention must provide a “technical contribution” if it is not to fall within excluded matter.
- 8 From that I take that I should apply the *Aerotel* test but that in doing so I must ask the question “is the contribution technical?”.

Arguments and analysis

Step 1 – properly construe the claim

- 9 There has been no disagreement between the examiner and applicant as to the correct construction of the claim at any stage during the examination process.
- 10 At the hearing Mr Russell reiterated that there was no issue with construing the claim. I am in agreement and can see no reason to depart from the construction put on the claim by the examiner in his final examination report.

Step 2 – identify the actual contribution

- 11 Identifying the actual contribution appears to be where the problem lies in this case. The examiner and applicant have failed to reach a common position on defining the contribution made by the claimed invention. The examiner in his final examination report defined the contribution as being:
- “the automation of steps of a method of choosing a random image from a database and not choosing that image again until all possible candidates have been chosen so as to make a more aesthetically pleasing carpet pattern”.
- 12 At the hearing Mr Russell claimed the examiner had interpreted the contribution made by the claimed invention too narrowly, without taking account of the real world benefits obtained by putting the invention into effect. The examiner, in Mr Russell’s opinion, has approached step 2 from the angle “there’s a problem and the contribution is in how you solve it”. Mr Russell explained that he disagreed with this approach and that how the problem is solved is what the inventor does but the contribution to the art is in solving the problem itself. He further clarified that the process set out in claim 1 overcomes the problems with the prior art as it removes the patterning artefacts when the tiles are laid over a large expanse. Thus, he argued, the contribution lies in solving the problem of patterning artefacts and not merely in the way in which the problem is solved. He further added that although this is done by a series of steps carried out by a computer, it is established law that if you solve a technical problem using computerised steps then that takes you beyond a computer program as such.
- 13 I cannot agree with Mr Russell’s assertion that how the problem is solved is what the inventor does but the contribution to the art is in solving the problem itself, otherwise any computer program, mathematical method, mental act or business method per se which solved a problem would result in a patentable invention.

² *Symbian Ltd’s Application* [2008] EWCA Civ 1066

14 During the hearing I discussed with Mr Russell how I considered the contribution to encompass more than merely the problem to be solved and made reference to paragraph 43 of *Aerotel* which gives guidance on how to assess the contribution, and it reads:

“it is an exercise in judgment probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise. The formulation involves looking at the substance not form – which is surely what the legislator intended.”

15 Following this discussion Mr Russell then defined the contribution as the way in which you program or operate a system to pattern carpet tiles to solve the prior art problem.

16 I cannot agree that the contribution lies in the operation of a carpet patterning system as the final pages of the description (see page 29, line 31- page 30 line 16) state that techniques known to those skilled in the art are used to form a composite pattern which is fundamentally identical to a conventionally derived pattern and therefore, requires no special processing to convert the pattern data to firing instructions for the patterning machine to be used. So it would seem from this information that the operation of the machinery itself is conventional within the art.

17 The description goes on to give examples of textile patterning machines which are suitable for use with this invention. So it would also seem that the patterning machinery itself is conventional within the art.

18 I should note also that the carpet tile blanks “may be of any suitable construction” (see page 30, lines 18-24 of the description).

19 Returning to the guidance provided in *Aerotel* and looking at the problem said to be solved by the invention, the applicant outlines in the early part of the description what problems exist with prior art patterning techniques. On page 2 the description states:

“One of the generally acknowledged key attributes of a successful modular carpet tile installation, and one that may be helpful in achieving the look of broadloom carpet, is the inconspicuousness of the seams between contiguous carpet tiles. Where design elements within a single tile are duplicated in adjacent tiles and/or extend into adjacent tiles, and those design elements are not perfectly duplicated within each tile, the region around the seam can become visually obtrusive due to pattern discontinuities between adjacent tiles and can draw attention to any imperfections in the form of mismatched color or misaligned design elements. This condition, which shall be referred to as “seam discontinuity,” occurs frequently when there are design elements -for example, a simple band of colour- that extend across the boundary separating adjacent tiles and that tend to emphasize the transition from one tile to a contiguous tile.”

20 The applicant also identifies a challenge in “developing a system by which a series of such composite patterns can be generated and printed at the time of manufacture” These problems, such as “seam discontinuity” and “patterning artefacts” and definitions of what constitutes each of these can be found in the opening paragraphs of the description. This is consistent with what Mr Russell said at the hearing.

- 21 The invention as defined by claim 1 works to overcome the above mentioned problems by minimising or eliminating such discontinuities and artefacts, through the use of a non-repeating design. The non-repeating design shares common colours and design elements with adjacent tiles. The non-repeating design is formed of a series of textile substrates each having a random pattern. The random pattern is a composite pattern made up of a base pattern and at least one overlay pattern. The series of composite patterns comprise a series of overlay patterns selected from a library of overlay patterns in turn until each overlay pattern is chosen.
- 22 One advantage of the invention is that it “has been found to be effective in eliminating the subconscious expectation of uniformity or symmetry, thereby minimizing the visual impact of patterning artefacts as well as seam discontinuities.”. A second advantage is “at least one common design element or motif is incorporated into the composite pattern to serve as a visually unifying element across all tiles in the installation...the carpet tiles exhibit a distinct random or pseudo-random appearance when installed”. An additional benefit is identified as ‘the random or pseudo-random elements incorporated into the design tend to mask any visually obtrusive, large-scale design lines...as well as any unintended mis-matching of patterns or colors at the boundaries of the individual tiles.’.
- 23 I must take all of these things into account when considering what the contribution to the art is, and I believe the contribution of the claimed invention to lie in the process which selects and forms the random composite patterns. This is what the inventor has added to the stock of human knowledge. Therefore I consider the contribution to be a computer based process for generating a composite pattern comprised of a base pattern and at least one overlay by randomly selecting overlay patterns from a library of overlay patterns until each overlay pattern has been chosen.

Step 3 – ask whether it falls solely within the excluded subject matter

- 24 I do not believe the contribution, as identified above, is anything more than a computer program, however this does not necessarily mean the invention is excluded from patentability, what matters is whether or not the program provides a technical contribution.

Step 4 – check whether the actual or alleged contribution is actually technical in nature

- 25 After a short discussion at the hearing Mr Russell and I were both in agreement that we did not consider the signposts set out in AT&T CVON³ to be helpful in this case, either in support of the applicant or the examiner. For this reason I have not considered them further.
- 26 The invention does not appear to make a contribution to the art of patterning in the way that improvements to, for example, the patterning machinery or substrate transport mechanism would. As set out in the assessment of step 2 above, it appears that this invention can be implemented using conventional patterning machinery and using known substrates. The contribution is concerned with what the pattern is, not how the patterning is done; whilst the invention does result in items

³ AT&T Knowledge Ventures’ Application and CVON Innovations Ltd’s Application [2009] FSR 19

having different visual characteristics being produced, this is solely as a result of the instructions sent to the patterning machinery rather than any new or unexpected operation of the patterning machinery. It is for this reason I do not consider that the contribution is technical in nature.

Conclusion

- 27 For the reasons set out above I consider the invention as claimed is excluded under section 1(2) because it relates to a computer program as such. I do not, therefore, need to consider whether the invention is excluded as an aesthetic creation.
- 28 I have read the specification and can find no saving amendment which will take the invention outside of the computer program exclusion.
- 29 I therefore refuse the application under section 18(3) for failure to comply with section 1(2).

Appeal

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

J PULLEN

Deputy Director, acting for the Comptroller