



PATENTS ACT 1977

APPLICANT Logined B.V.

ISSUE Whether patent application GB1013502.8 complies with the requirements of sections 1(1)(d) and 1(2)

HEARING OFFICER B Micklewright

DECISION

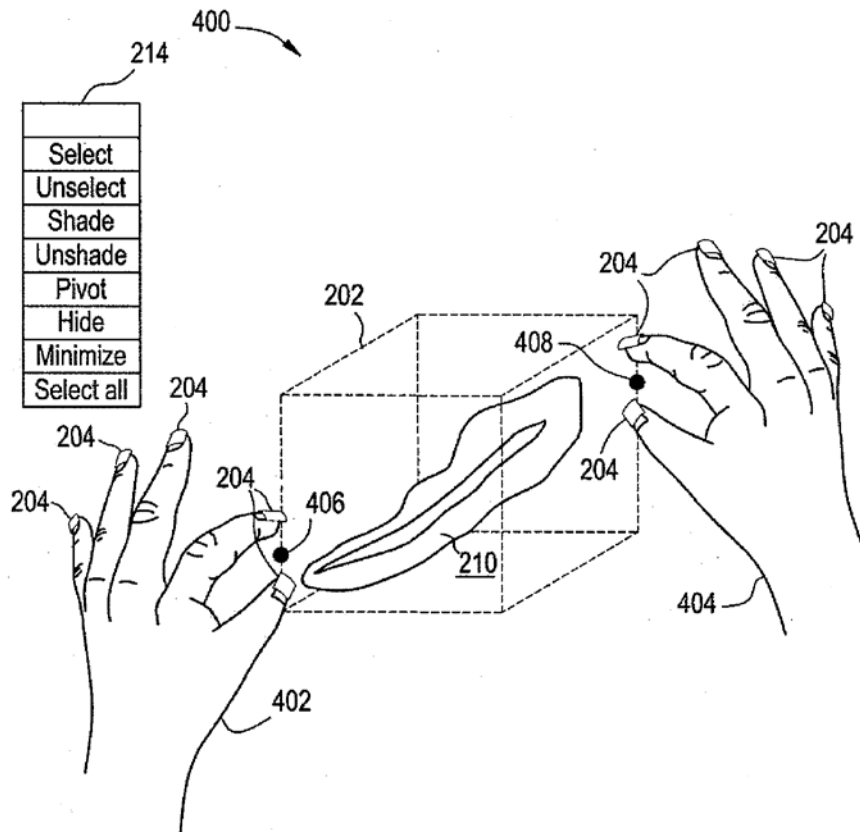
Introduction

- 1 Patent application GB1013502.8 was filed on 12 August 2010 in the name of Logined B.V. with a declared priority date of 27 August 2009. It was published on 6 April 2011 as GB 2474095 A.
- 2 The examiner considered the claimed invention to be excluded from patentability as a program for a computer as such and the presentation of information as such. The examiner also raised an objection on the grounds of a lack of inventive step but this objection was later dropped following amendment to the claims. The examiner and the applicant could not however agree on whether the invention was excluded from patentability and the matter was therefore referred to me for a decision on the papers. Following this referral the applicant filed further amendments on 13 September 2013 which have not been considered by the examiner and requested that I use these amendments as the basis for my decision. This decision is based on those amendments. They do not however alter the substance of the invention but have been made to address one or two clarity issues raised by the examiner. They are therefore immaterial to my decision.

The invention

- 3 The invention relates to a method of allowing a user to interact with a 3D geoscience object displayed on a computer display. The 3D geoscience object is created from seismic data cubes or features taken from seismic data cubes, and is a computer-generated model representing a variety of information including approximations of subsurface geologic conditions within the field. The user traces an outline of a feature of interest in the geoscience object. A three-dimensional volume is then created in the object by examining the geological properties of formations within the traced outline and joining all volumes having geological properties similar to those found within the outline and which are contiguous with the outlined area. The user

may then manipulate the feature in the displayed object using two or more control points in the 3D space. Simultaneous movement of these points is tracked and the displayed feature of the 3D geoscience object is altered accordingly. The control points may be manipulated by the user by, for example, using a camera to track the movement or shape of hands and/or fingers of the user. For example the user can stretch, tilt, translate, rotate or scale the feature using various hand gestures, as in shown in Figure 4 of the application, reproduced below.



4 Claim 1 is the only independent claim and reads, following the latest amendments:

1. A method of allowing a user to interact with a 3D geoscience object displayed using a display device using two or more user-controlled points in 3D free space, wherein the 3D geoscience object includes one or more seismic data cubes or one or more features taken from one or more seismic data cubes; the method comprising:

identifying a feature of interest in the 3D geoscience object and tracing an outline of the feature of interest by guiding a user-controlled point along an outside surface of the feature of interest;

creating a three-dimensional volume in the 3D geoscience object by examining the geological properties of formations within the traced outline and forming a three-dimensional feature by joining all volumes having geological properties similar to those found within the outline and which are contiguous with the outlined area;

manipulating the feature of the 3D geoscience object by tracking simultaneous movement of two or more points in 3D free space, wherein movement of the points is controlled by the user;

interpreting the simultaneous movement of the two or more points as an interaction with the feature of the 3D geoscience object; and

altering a display of the feature of the 3D geoscience object based on the interaction.

The law

- 5 Section 1(1)(d) of the Act states that a patent may be granted only for an invention in respect of which the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A. Section 1(2)(c) states that things which consist of “a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer” are not inventions for the purposes of the Act, but only to the extent that a patent or application for a patent relates to that thing as such.
- 6 There is a large amount of case law in relation to these provisions. The most significant recent judgments of the Court of Appeal on the matter are *Aerotel*¹ and *Symbian*². In *Aerotel* the Court of Appeal reviewed all the previous case law and specified the following four-step test as a methodology of determining whether an invention was excluded from patentability under section 1(1)(d):
- (1) Properly construe the claim;
 - (2) identify the actual contribution;
 - (3) ask whether it falls solely within the excluded subject matter;
 - (4) check whether the actual or alleged contribution is actually technical in nature.
- 7 In *Symbian* the Court of Appeal confirmed that the above test is intended to be equivalent to the prior case law test of “technical contribution”. In the present case I will therefore use the *Aerotel* test and ensure in my consideration of steps (3) and (4) that I determine whether the invention makes a technical contribution.

Assessment

(1) Properly construe the claim

- 8 On the whole the claim is straightforward to construe. There was however a dispute between the examiner and the applicant as to the nature of the method claim. The examiner construed it as a method of interacting with a virtual object. The applicant contended that the examiner had failed to properly identify that the claim is to a method of manipulating an image. The difference is not in my view material. The claim is to “a method of allowing a user to interact with a 3D geoscience object” and includes, amongst other things, the step of “manipulating the feature of the 3D geoscience object”. Read in context it is apparent that this expression relates to the user interacting with the feature on the display so as to better view the properties of the feature, for example by rotating, scaling or translating the object. It is in that sense that the feature, and thus the object, is manipulated.

(2) Identify the actual contribution

¹ *Aerotel Ltd v Telco Holdings Ltd* Ors Rev 1 [2007] RPC 7

² *Symbian Ltd's Application* [2009] RPC 1

- 9 To identify the contribution I have to consider the claim as a whole in substance. Jacob LJ provided some useful guidance in paragraph 43 of *Aerotel* for identifying the contribution:

“The second step – identify the contribution - is said to be more problematical. How do you assess the contribution? Mr Birss submits the test is workable – 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 substance not form – which is surely what the legislator intended.”

- 10 The examiner considered the contribution to lie in indicating a feature of interest by tracing an outline of a feature in a 3D geoscience object generating a 3D volume from the feature of interest by joining all contiguous volumes having geological properties similar to those in the outlined feature. The displayed geoscience object feature can then be manipulated to allow further inspection and understanding.
- 11 The applicant argued that the contribution includes processing an image (the displayed 3D geoscience object) to define a feature within the image based on properties represented in the image, and manipulating the image based on a user interaction with the defined feature by tracking user-controlled points and interpreting their movement in relation to the defined feature for manipulation of the image, producing an altered image.
- 12 There is some debate as to what could be considered conventional with reference to the prior art. The examiner stated that “the way in which the 3D image is manipulated is conventional”. The applicant however argued that the examiner had provided no evidence to show that defining a feature within the image based on the properties of the image and manipulating the image based on user interaction with the defined feature was conventional at the priority date of the patent.
- 13 The applicant’s argument focuses on the aspects of the claim relating to the definition of the feature and does not appear to counter the examiner’s argument that the specific way that the image is then manipulated once the feature has been identified is conventional. In my view it is apparent that this is not what in substance the inventor has added to human knowledge. This rather lies in the way the feature of interest within the 3D geoscience object is indicated so that it can then be manipulated. I would therefore characterise the contribution as follows:

A method of allowing a user to interact with a 3D geoscience object where the user indicates a feature of interest by tracing an outline of a feature in a 3D geoscience object generating a 3D volume from the feature of interest, all contiguous volumes having geological properties similar to those in the outlined feature are joined to the feature, and the user then manipulates the feature of the geoscience object.

- 14 It is worth emphasising that in substance the invention relates to assisting a user in identifying and viewing a portion of a 3D geoscience object (a model representing geological conditions within the field).

(3) Ask whether it falls solely within the excluded subject matter; (4) check whether the actual of alleged contribution is actually technical in nature

- 15 The applicant argued that the examiner was wrong to use signposts set out by Lewison J (as he then was) in *A&T Knowledge Ventures and Cvon Innovations Ltd* (“*AT&T*”)³. The judge considered that these signposts indicated whether a program made a relevant technical contribution that would overcome an excluded matter objection. He modified them slightly in *HTC v Apple*⁴ to read:
- 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 the program made the computer a better computer in the sense of running more efficiently and effectively as a computer;
 - v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.
- 16 The applicant referred to the analysis of *Vicom*⁵ set out in the *AT&T* judgment to support their argument that, when starting with a claim that defines a method of manipulating images, one is faced with an invention that nominally lies in a field that has already been found to be technical in nature. I will come to the applicant’s latter point, but even if it is correct the *AT&T* signposts have been constructed so as to tease out whether the invention makes a technical contribution including whether it lies in a technical field when a computer program is involved in the implementation of the invention. They help in the determination of whether an invention implemented as a computer program relates to a program for a computer as such and is therefore excluded from patentability. It could therefore assist in the present case. I will however begin by dealing directly with the applicant’s contention that the invention lies within the field of image manipulation and therefore, following *Vicom*, makes a technical contribution. The applicant referred me to paragraphs 17-20 of *AT&T*:

17. *Vicom* (T 0208/84) concerned the digital processing of images. The application was rejected by the Examining Division on the ground that it claimed a mathematical method and a computer program as such. On appeal to the Board the appellant argued that a novel technical feature clearly existed in not only the hardware, but also in the method recited in the claims. The invention conferred a technical benefit namely a substantial increase in processing speed compared with the prior art. Digital filtering in general and digital image processing in particular are "real world" activities that start in the real world (with a picture) and end in the real world (with a picture). What goes on in between is not an abstract process, but the physical manipulation of electrical signals representing the picture in accordance with the procedures defined in the claims. Thus the claimed technical benefit was an increase in processing speed. The Board first dealt with whether the claimed invention was susceptible of industrial application. It was in that context that they made the observations quoted by Lord Neuberger in §37 of *Symbian*. They then went on to consider whether the claim was excluded as being a mathematical method as such; and concluded that it was not because the mathematical method which underlay the invention was being used in a technical

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

⁴ *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451

⁵ *Vicom/Computer-related invention* [1987] OJEPO 14 (T208/84)

process which was carried out on a physical entity by technical means. Turning to the computer program exclusion they said (§12):

"The Board is of the opinion that a claim directed to a technical process which process is carried out under the control of a program (be this implemented in hardware or in software), cannot be regarded as relating to a computer program as such within the meaning of Article 52(3) EPC, as it is the application of the program for determining the sequence of steps in the process for which in effect protection is sought. Consequently, such a claim is allowable under Article 52(2)(c) and (3) EPC."

18. The point which I think the Board are making is that what was claimed was not the computer program at all, but the process of manipulating the images. That process was a technical process and hence made a technical contribution. It is, I think, the same point that they make in the other extract quoted by Lord Neuberger (§ 15):

"Generally claims which can be considered as being directed to a computer set up to operate in accordance with a specified program (whether by means of hardware or software) for controlling or carrying out a technical process cannot be regarded as relating to a computer program as such and thus are not objectionable under Article 52(2)(c) and (3) EPC."

19. The Board continued (§ 16):

"Generally speaking, an invention which would be patentable in accordance with conventional patentability criteria should not be excluded from protection by the mere fact that for its implementation modern technical means in the form of a computer program are used. Decisive is what technical contribution the invention as defined in the claim when considered as a whole makes to the known art."

20. What the Board are saying in this paragraph is, I think, that you assess the patentability of a claimed invention ignoring the fact that it operates through a computer program. If, ignoring the computer program, it would be patentable, then the fact that a computer drives the invention does not deprive it of patentability.

- 17 These paragraphs appear within a detailed consideration of both UK and EPO case law and conclude with the judge's five signposts.
- 18 The applicant argues that, based on the above comments, any claim that defines a method of manipulating images lies in a field that has already been found to be inherently technical in nature. I am not convinced that this is what either the judge in *AT&T* or the Board in *Vicom* is saying. In paragraph 18 of *AT&T* the judge says that, in the case of *Vicom*, the Board were making the point that what was claimed in that case was not the computer program at all but the process of manipulating images. I believe he is referring to the specific process of manipulating images set out in the claims of *Vicom*, which the Board found was a technical process and hence made a technical contribution. It does not follow that all processes for manipulating images are technical processes and therefore make a technical contribution. I have to look at the specific process defined in the contribution in the present case and decide whether that is a technical process. Of course the mere fact that the invention is implemented as a computer program does not decide the matter, as is made clear in *AT&T*.
- 19 According to the applicant the contribution made by the present invention comprises a manner of defining a feature in an image that is used for manipulation of that image, the method being tied to real-world elements at each step. The image, a 3D

geoscience object, is a “real world” element based on real world data (seismic data) and is therefore an image of a real world thing (the underground formation from which the seismic data is obtained). The definition of the feature in the image is based on real world data relating to the formation shown in the image. Finally the image is manipulated based on an interaction between user controlled points which exist in the real world and the defined feature (real world data) to produce a manipulated real world element (the image). The applicant concluded that the claimed method is completely tethered to real-world characteristics and whether or not a computer program is used is irrelevant to the assessment of technical contribution.

- 20 There is, according to the applicant, an undoubted technical challenge in manipulating images derived from seismic data due to the difficulty in defining feature structures within this data. Therefore if seismic data is to be manipulated effectively it is necessary to be able to define such features consistently. By defining the features based on properties within a region defined by a user the method allows a user to identify a feature of interest which can be used to extrapolate the features outside the region identified by the user. It is therefore less sensitive to the user accurately identifying the limits of the feature when defining the feature to form the basis of the image manipulation.
- 21 In terms of the nature of the image, the applicant argued that the image is not conventional as it is not possible to display the same image including the defined feature using any existing method or system. The system displays an image in a different way because it creates the defined feature in a new way.
- 22 I am not convinced that the invention is suitably tethered to real-world elements. What the invention is about is assisting with a user in manipulating a defined subset of a 3D image representing a geoscience object so as to better view the image corresponding to that subset. These manipulations can involve translation, rotation, zoom or the like. The invention does not make a technical contribution merely because the image represents physical data. It is important to look at the substance of the contribution and to determine whether that substance provides a relevant technical effect. In substance the invention relates to enabling a user to identify and viewing a portion of an image representing a geoscience object. It does not in itself do any technical analysis of the geoscience object beyond that required to identify the required feature within the image. The selection of the feature and the manipulation of the image is about the user being better able to view the image and does not in itself amount to technical image processing either of the image itself or of the geoscience object represented by the image. The reference to real-world elements in the contribution does not therefore in itself result in a technical contribution.
- 23 The applicant referred to IPO decision in *Hewlett-Packard Development Company, L.P.’s application*⁶ and argued that the hearing officer recognised the synergy between image processing steps which together formed the contribution of the invention. The steps operated in combination to produce the technical effect.

⁶ *Hewlett-Packard Development Company, L.P.’s application* (BL O/466/11)

- 24 I am not convinced that analogies with either *Vicom* or *Hewlett-Packard* help the applicant in the present case. *Vicom* related to an image processing method which produced an image having a better technical quality. In *Hewlett-Packard* the contribution involved processing the image to generate a simplified representation which has particular properties suited to the intended use and the hearing officer considered these to be technical image processing steps. In the present case the invention does not involve technical image processing steps in the same sense. Rather what occurs is that a user traces an outline of a feature of interested and a 3D feature is formed by joining all volumes having geological properties similar to those found within the outline and which are contiguous with the outlined area. The purpose is to identify a feature within the image which may then be manipulated using standard techniques. This does not in my view amount to technical processing of an image but merely to selecting a region of an image. In substance it is a better tool for viewing seismic data, not for processing or modelling either images or seismic data.
- 25 The examiner argued that the present invention also related to the presentation of information as such The applicant argued that the invention was more than the presentation of information on the grounds that it is not merely “painting” the seismic data onto the screen so that it can be read by the user but also requires that the user interact with the image so that a feature can be defined and the image manipulated. The technical relationships between the parts of the image need to be maintained so that the structure of the formation from which the seismic data is obtained can be understood. The applicant contrasted this with the *Gemstar*⁷ case in which, he argued, a distinction is drawn between the production of manipulatable images and merely placing the images on a screen.
- 26 Taking all of the above factors into account I have been unable to identify a relevant technical effect in the present invention. it seem to me that in substance the invention provides a better way of identifying and presenting information relating to a feature within a geoscience object to a user. I therefore conclude that that the invention lies wholly in the excluded fields of a program for a computer as such and the presentation of information as such and does not make a technical contribution.
- 27 By way of a check I will quickly run through the *AT&T* signposts set out above. Firstly the invention does not have a technical effect on a process which is carried on outside the computer. Although an image is manipulated and that image represents real-world data the image is not manipulated in any technical sense. Rather it is merely rotated, stretched, zoomed etc in a standard manner to assist the user in viewing the feature. Moreover the way that the feature within the geoscience object is identified is not a technical process carried on outside the computer but merely a means of selecting which subset of the image, or data represented by the image, to view in the above manner.
- 28 It is apparent that the claimed technical effect does not operate at the level of the architecture of the computer, nor does it result in the computer being made to operate in a new way or make the computer a better computer in the sense of running more efficiently and effectively as a computer. Finally, the perceived problem relates to overcoming the complexity and amount of information in geoscience

⁷ *Gemstar-Tv Guide International Inc & Ors v Virgin Media Ltd & Anor* [2010] RPC 10

objects when presenting that information to users. This problem is not in itself a technical problem but one relating to the presentation of information. Moreover the proposed solution does not overcome the problem in any technical sense, for example by carrying out some clever data processing to simplify the information, but rather provides the user with a means for determining how the information is shown on the screen.

Conclusion

- 29 I therefore conclude that the contribution relates to a way of presenting geological data on a display. It makes no technical contribution and is therefore excluded from patentability as a program for a computer as such and the presentation of information as such. I therefore refuse the application.

Appeal

- 30 Any appeal must be lodged within 28 days

B Micklewright

Deputy Director, acting for the Comptroller