

26 September 2011

PATENTS ACT 1977

APPLICANT Kabushiki Kaisha Toshiba

ISSUE Whether application number 0622187.3 complies
with section 1(2) of the Patents Act

HEARING OFFICER J Pullen

DECISION**Introduction**

- 1 Patent application GB0622187.3 entitled 'Layout design support system, method and program' was filed in the name of Kabushiki Kaisha Toshiba on 7th November 2006, claiming priority from an earlier Japanese application. The application was then published as GB2432239 on 16th May 2007.
- 2 The examiner has maintained throughout objections that the invention claimed in this application is excluded from patentability as a mental act and as a computer program as such under section 1(2)(c) of the Patents Act 1977. The applicant has not been able to overcome this objection despite amendments to the application.
- 3 The matter therefore came before me at a hearing on 27th July 2011 where the applicant was represented by Mr Mark Kenrick and Mr Michael Williams of Marks & Clerk LLP. The examiner, Mr Jake Collins, was also present.

The application

- 4 The application relates to a tool for supporting layout design of a plant, such as chemical or power plants, including the arrangement of equipment, space and connection between the equipment and the presentation of the layout design in a 2D or 3D CAD representation.
- 5 The claims to be considered are those filed on 3rd May 2011. These comprise 8 claims, of which claims 1, 7 and 8 are independent claims directed towards a system, method and computer program respectively. It was accepted by the applicant that claims 7 and 8 stand or fall with claim 1, consequently it is only necessary to consider claim 1 in detail.
- 6 Claim 1 reads as follows:

A layout design support system for supporting a layout design, including an arrangement for a building and a plurality of equipments within a layout range space of a plant and a connection between said equipments, using a computer, wherein said computer comprises:

Interface means for inputting various instructions and data and displaying various screens;

layout editing means for causing said interface means to display a layout design data editing screen relating to layout design data, which include building data relating to a building centre line and a building arrangement, equipment arrangement data relating to an arrangement of said equipments, equipment connection element data relating to the constitution of a physical equipment connection element between said equipments, equipment connection path data relating to the constitution of an ancillary element serving as a path of said equipment connection element, and user-specified range data relating to a range specified by a user, receiving an edit instruction input onto said screen, and editing said layout design data in accordance with said edit instruction;

storage means for storing a layout design data editing result generated by said layout editing means; and

CAD converting means for converting said layout design data generated by said layout editing means into a two-dimensional CAD drawing or a three-dimensional CAD model, and causing said interface means to display said two-dimensional CAD drawing or said three-dimensional CAD model on a screen,

wherein:

said layout editing means comprise, as said layout design data editing screen displayed by said interface means, a plurality of depiction screens which depict the edited content of said layout design data in the form of a layout diagram, and a plurality of control screens which display an input/select/display field or an operation image element relating to an editing subject item of said layout design data, and into which an edit instruction and data corresponding to a user operation are input,

wherein said layout editing means comprise individual editing means for individually editing said building data, said equipment arrangement data, said equipment connection element data, said equipment connection path data, and said user-specified range data as individual data,

wherein each individual editing means comprise said depiction screen and said associated control screen, which is an individual control screen having a screen configuration adapted such that the screen configuration is dedicated to the type of individual data to be edited and acquires a necessary information depending on the data type,

wherein each individual editing means is adapted such that the individual editing means causes said interface means to display said individual control screen of an individual data to be edited, acquires said necessary information depending on the type of individual data based on an instruction and input provided from a user, performs data editing, causes said interface means to display the obtained editing result of the individual data on the depiction screen, and stores the data editing result in said storage means individually,

wherein an individual editing means for editing said building data acquires said necessary information to perform data editing, generate data including a building name and a maximum point and a minimum point in an XY coordinate system, to display and store the generated data as an editing result of the building data,

wherein an individual editing means for editing said equipment arrangement data acquires said necessary information to perform data editing, and generates data including a building, an equipment name and arrangement point of an equipment in an XY coordinate system and an arrangement direction, to display and store the generated data as an editing result of the equipment arrangement data,

wherein an individual editing means for editing said equipment connection element data acquires said necessary information to perform data editing, and generate data including a connection name and an equipment name of a connection destination equipment, to display and store the generated data as an editing result of the equipment connection element data,

wherein an individual editing means for editing said equipment connection path data acquires said necessary information to perform data editing, and generate data including a connection path name and a control point of an equipment connection path in an XY coordinate system, to display and store the generated data as an editing result of the equipment connection path data, and

wherein an individual editing means for editing said user-specified range data acquires said necessary information to perform data editing, and generates data including a range name and a maximum point and a minimum point in an XY coordinate system, to display and store the generated data as an editing result of the user-specified range data.

The law

- 7 The examiner has raised an objection under section 1(2)(c) of the Act that the invention is not patentable because it relates to a mental act and a program for a computer as such; the relevant provisions of this section of the Act are shown below:

1(2) It is hereby declared that the following (amongst other things) are not inventions for the purpose of the Act, that is to say, anything which consists of-

(a) ...

(b) ...

(c) *A scheme, rule, or method for performing a mental act, playing a game or doing business, or a program for a computer;*

(d) ...

But the foregoing provisions shall prevent anything from being treated as an invention for the purposes of the Act only to the extent that a patent or application for a patent relates to that thing as such.

8 There was no disagreement between the applicant and the examiner with regard to the correct approach to the law. As such I will follow the case law established in the UK in *Aerotel/Macrossan*¹, and further elaborated in *Symbian*² and *AT&T/CVON*³. At the hearing Mr Kenrick pointed out that consideration of step 4 of the test set out in *Aerotel/Macrossan* is compulsory. I have no issue with the application of the fourth step so will continue without need for further discussion.

9 I shall now consider the test set out in *Aerotel/Macrossan*, firstly in respect to the computer program exclusion.

Step 1: Properly construe the claim

10 There is no difficulty in construing the claims, the claims are clear and there has been no dispute regarding their meaning. The claims relate to a system, method and computer program for supporting plant layout design, using a computer, which includes layout editing means and means for converting the generated layout design data into a 2D or 3D CAD representation.

Step 2: Identify the actual contribution

11 In paragraph 43 of the *Aerotel/Macrossan* judgement identification of the contribution is described as ‘an exercise in judgement probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to the sum of human knowledge...’

12 The problem identified on pages 5 and 6 of the specification is that ‘specific route design places a large load on the designer, and it is difficult to produce an optimum route design during the layout design process, accurate calculation of the total amount of materials and cost also becomes difficult’, ‘when a design operation is performed using a two-dimensional CAD or three-dimensional CAD, the layout design workload is much greater than that a case in which simple, universal diagrams are used, and ‘to avoid the large risks involved in layout design as an estimate operation, the work load required for layout design must be lightened’.

¹ *Aerotel Ltd v Telco Holdings Ltd (and others) and Macrossan's Application* [2006] EWCA Civ 1371

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

³ *AT&T Knowledge Ventures LP and CVON Innovations Limited* [2009] EWHC 343

From this I have summarised the problem to be a lack of speed and efficiency in the production of layout designs in comparison with the current methods available.

- 13 The invention works by providing the designer with a computer implemented design support tool. The tool supports the editing of layout design data, which has been classified into several discrete areas, which appears to be analogous to a database. The tool also allows the designer to create and edited the layout using simple universal diagrams rather than 2D or 3D CAD representations, but then allows the design output to be converted to 2D or 3D CAD representations.
- 14 The advantages are that the workload of the designer is reduced in producing a plant layout design. A more detailed explanation can be found on pages 7-9 of the specification.
- 15 The contribution as identified by the applicant in the skeleton argument is a 'system which allows the editing of a layout design and the conversion of layout design data into a CAD drawing or model'. At the hearing Mr Kenrick added that the contribution was 'a layout design support system.'
- 16 The examiner has identified the contribution to be a layout design support system that takes construction into account and a user specified range can be set around equipment restricting the connections and arrangement of the equipment using a rational database design.'
- 17 Paragraph 30 of the skeleton argument states 'Indeed, the invention is not concerned with any aspect of a computer program *per se* but rather with a higher level process having as its aim improved design and CAD drawing/model creation'. My interpretation is that the invention allows the designer to more quickly arrive at a design and to express the results in a way which facilitates understanding of the spatial arrangement. Also that the invention is necessarily concerned with a computer program as the invention could not, in my opinion, reasonably be expected to be carried out without the use of a computer (it is this argument which the applicant asserts saves the invention from exclusion as a mental act).
- 18 I clarified, with Mr Kenrick, at the hearing that there was nothing unconventional about the hardware being used in this system. Therefore, having considered the information before me, I am of the opinion that the contribution is a computer program which aids in the layout design and presentation of industrial plant.

Steps 3 and 4: Does the contribution fall solely within the excluded subject matter? and is the contribution actually technical in nature?

- 19 I am of the opinion that the contribution identified above falls solely within the excluded subject matter as a computer program *per se*.
- 20 In the skeleton argument and at the hearing Mr Kenrick drew my attention to EPO Board of Appeal decision *T643/00*⁴. He submitted that 'the Courts of this country should consider technical what the EPO considers technical'. However, I do not believe I am bound to follow the decisions of the EPO Court of Appeal but they are

⁴ T643/00

persuasive, as set out by Lord Hoffmann in *Merrell Dow Pharmaceuticals Inc. v H.N. Norton*⁵ (at page 82).

- 21 I do not consider *T643/00* relevant to these proceedings as the claimed invention in *T643/00* works at a different level of abstraction to the invention being considered here. The way in which the information is displayed appears to be entirely independent from the type of information and also it appears that the invention could be worked irrespective of what the image is. This is not the case for the invention under consideration here.
- 22 With respect to the signpost towards the meaning of technical effect which are set out in paragraph 40 of *AT&T/CVON*, Mr Kenrick submitted that the invention satisfied the first and fifth of these signposts but not the second to third.
- 23 The first of the signposts reads ‘whether the claimed technical effect has a technical effect on a process which is carried on outside a computer’. At the hearing Mr Kenrick clarified that this signpost was met because layout design and CAD conversion exist outside the computer. I do not dispute that a layout design or a CAD representation could exist outside of a computer, but the contribution as identified above does not relate to the use of the layout or CAD representation outside of the computer, it relates entirely to the processes which happen within the bounds of the computer system during the design process.
- 24 The fifth signpost reads ‘whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.’ Mr Kenrick again clarified that the signpost was met as the improved layout design system solved the problem of layout editing and conversion.’ The problems identified in the application relate to commercial issues, such as the time taken for tasks to be performed and the relative cost of carrying them out. As such, I believe the scale of these problems has been reduced rather than the problem having been overcome.
- 25 Therefore, I find that the contribution made lies within the excluded fields and, as it is not ‘technical’ is excluded.

Proposed amendments

- 26 At the hearing Mr Kenrick requested that if I find the invention to be patentable then I allow the applicant the opportunity to amend the claims to recite those originally filed which are broader in form. As I have found the invention to be excluded, this request is no longer relevant.
- 27 Mr Kenrick also requested that I consider the subject matter of claim 5 (by virtue of their dependency upon claims 3 and 4) as a possible saving amendment as he considered that they provided a further technical contribution as the claims relate to ‘features for performing the technical task of providing tools for facilitating the comparison of multiple designs to improve the efficiency of the design process’.

⁵ *Merrell Dow Pharmaceuticals Inc. v H.N. Norton & Co Ltd* [1996] RPC 76

- 28 The proposed addition of claim 5 to the main claim would not appear to affect the substance of the contribution and, for the same reasons as identified above, does not change the technical effect of the contribution.

Other matters

- 29 As I have found that the invention is excluded as a computer program, I do not need to consider the mental act objection.

Conclusion

- 30 I find that the application is excluded under section 1(2) as relating to a computer program. I also find that there are no possible amendments to allow the application to progress to grant and therefore refuse it.

Appeal

- 31 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