Intellectual Property Office

BL O/809/18
14 December 2018

PATENTS ACT 1977

APPLICANT	Hitachi Limited
ISSUE	Whether patent application GB1404925.8 is excluded under section 1(2)
HEARING OFFICER	H Jones

DECISION

Introduction

1 This decision is concerned with the question of whether patent application GB1404925.8 relates to excluded subject-matter. The examiner has maintained throughout the examination of this application that the claimed invention is excluded from patentability under section 1(2) of the Act as a business method and computer program as such. Despite several rounds of argument and amendment, the applicant has not been able to overcome this objection and requested a hearing in to resolve the matter. The hearing took place on 28 November 2018. The applicant was represented by Dr John Addiss and Dr Daniel Brodsky, both of Mewburn Ellis LLP.

2 In view of the impending expiry of the compliance period (currently 26 December 2018) and that a significant portion of the substantive examination had been deferred, an oral decision was given at the conclusion of the hearing. The application was found not to be excluded under section 1(2) and the application was remitted to the examiner. Although the compliance period had already been extended as of right, the applicant was assured that discretion would be awarded in regard to a further request to extend the compliance period.

The invention

3 The invention provides a method of managing a construction field/site which is, at least in part, implemented on a computer. Measurement data corresponding to real-time three-dimensional shape data of the construction site is acquired using a measuring device, such as a laser scanner. The measurement data corresponds to completed and partially completed constructions, as well as associated scaffolding, tools and non-installed items that may be deposited around the construction site.

4 The measurement data is compared with design data, corresponding to a model of the construction, in order to extract non-design data from the measurement data which corresponds to the scaffolding, tools and non-installed items which are present in the construction site during the construction process. In this manner, it is possible to identify non-design items that are present in the construction filed but that are not part of the design data.

5 Using the measurement data and the non-design data, a degree of congestion is calculated for a selected element in the construction site, and a warning is generated if the degree of congestion exceeds a predetermined threshold. Additionally, in response to the warning being generated, a user changes a start time of an activity of the construction that involves the selected element and rearranges elements in the construction site that are within a predetermined range of the selected element.

6 The invention therefore provides a warning to a user in response to localised congestion in a construction site. The user is then able to reduce congestion or mitigate further congestion by altering a schedule and rearranging elements in the construction site. This enables a more efficient construction process and may improve safety in the construction site.

7 Claim 1 is the only independent claim of the amended set filed on the 21 September 2018, which reads as follows:

> 1. A method of managing a construction field in which something is under construction, wherein the method includes generating construction field management information used to manage the construction field, comprising:
>
> causing a construction field management device to:
>
> acquire measurement data that is three-dimensional shape data measured by a measurement device, and
>
> compare design data that is three-dimensional shape data of a design mode created by a designer, with the acquired measurement data, thus extracting non-design data that is an element which is not the design data, from the measurement data,
>
> wherein the construction field management device:
>
> stores, in a storage unit, scaffolding/tool pattern data including information about a shape of a scaffolding/tool, and a feature quantity of an element of the design data,
>
> wherein the construction field management device:
>
> compares the scaffolding/tool pattern data with the extracted non-design data, thus extracting scaffolding/tool information that is information about the scaffolding/tool from the non-design data,
>
> compares a feature quantity calculated from the extracted non-design data with the feature quantity of the element, thus extracting information of a non-installed element that is a design model included in the non-design data,
>
> calculates reference coordinates about each element of the element of the design data, the scaffolding, the tool, and the non-installed element, and
>
> when one of the elements of the element of the design data, the scaffolding, the tool, and the non-installed element is selected via an input unit,
>
> detects another element existing within a predetermined range from the selected element, based on the calculated reference coordinates, calculates a

degree of congestion of the element existing within the predetermined range, based on the measurement data,

displays the calculated degree of congestion on a display unit, and displays a warning on the display unit if the degree of congestion exceeds a predetermined threshold value,

wherein the method further comprises, in response to the warning displayed on the display unit, a user of the construction field management device changing a start time of an activity of the construction that involves the element having the degree of congestion that exceeds the predetermined threshold value, and rearranging elements in the construction field existing within the predetermined range of the element having the degree of congestion that exceeds the predetermined threshold value.

The law

8 Section 1(2) lists certain categories of subject-matter which are not considered to be inventions. These categories of subject-matter are conventionally known as excluded subject-matter:

> *1(2). 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.*

9 The Court of Appeal in *Symbian*[1] stated that the question of whether a computer-implemented invention is patentable has to be resolved by answering the question whether it reveals a technical contribution to the state of the art. It proceeded to answer the question with the aid of the four-step test set out in its earlier judgment in Aerotel[2], namely:

> (1) construe the claim;
> (2) identify the actual (or alleged) 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.

10 The fourth step of the test is to check whether the contribution is technical in nature. It may not be strictly necessary to apply the fourth step as acknowledged at

[1] Symbian Ltd. v Comptroller-General of Patents [2008] EWCA Civ 1066

[2] Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application [2006] EWCA Civ 1371

paragraph 46 of *Aerotel*, as any contribution which is solely in the excluded field cannot count as a "technical contribution".

Argument & analysis

11 There is no particular difficulty construing the meaning of the claims. The claims define a method of managing a construction site wherein a user alters a construction schedule and rearranges elements in the construction site in response to a generated warning.

12 The examiner has set out what she regards to be the contribution in her letter dated 5 October 2018 as follows:

> *"18. The alleged contribution relates to comparing actual measurement data with design data related to a construction site in order to find data relating to construction components (e.g. temporary components required for construction that are not part of the final structure being assembled). This data is used to identify congested areas and display such information to a relevant user, who can then manage the construction site accordingly by delaying the start of activities within a congested area and rearranging components in order to reduce any congestion to within an acceptable level. This has the advantages of enabling the user to manage the construction field efficiently and reduce delays to the construction that could occur due to non-design components causing congestion issues."*

The examiner's assessment is wholly consistent with that of the applicant therefore I am content to proceed to the third and fourth steps of *Aerotel* on the basis of this contribution.

13 The examiner and the applicant are in disagreement as to whether the contribution falls solely within the excluded subject-matter and whether the contribution is technical in nature.

14 In her letter dated 5 October 2018, the examiner argues that the alleged contribution is a method of managing a construction area wherein tools are rearranged and delays in construction are mitigated, and that this itself does not relate to any process control. Instead, the examiner identifies that the impact of the invention on a construction site is one of reducing delays in construction thereby enabling a faster more efficient building, which the examiner asserts is purely a business consideration rather than technical one. The Examiner additionally concludes that the contribution also lies solely in excluded subject-matter as a computer program having applied the signposts set out in *AT&T/CVON*[3](as modified in *HTC/Apple*[4]).

15 The applicant asserts that the alleged contribution is technical in nature for one of two reasons:

> a. any system which is configured to auto-generate a construction scheme from a CAD model would be inherently technical due to its relationship with a construction site, and

[3] AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents [2009] EWHC 343 (Pat)

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

b. alerting a user to problems in a construction plan as a result of a determined congestion and requiring the user to modify the construction plan in light of the alert is technical in nature.

16 The applicant argues that the alleged invention enables faster, more efficient building while additionally increasing site safety. The application is silent in relation to the safety aspect of the invention, although managing congestion, placement of tools, stores and facilities on site and its correlation with general site safety is very well documented, thus this advantage is understood to be implied throughout the application.

17 The applicant further argues that the management of a construction site is inherently technical, relying on the Office decision in *Boeing*[5], amongst others, to support this. I do not agree with this general proposition because it implies that any system or method would be inherently technical as a consequence of being related to construction site management. However, I consider that management of a construction site wherein physical adaptions to the construction site are made in response to real-time parameters in order to increase the efficiency and/or safety of the construction site, goes beyond a mere administrative procedure or a resource management activity. As such, the contribution made by the invention is considered to go beyond a business method as such.

18 In regard to the examiner's argument that the application relates to computer program as such, I referred the applicant to the Patent Court's judgment in *PKTWO*[6] which, although omitted from the applicant's arguments, seems particular relevant to the matter in hand in supporting their arguments. In distinguishing *PKTWO* from *Gemstar*[7], Floyd J. states at paragraph 18:

> *"Thus if the task that the program or computer performs is simply producing a different display, there is no relevant technical effect. Such an effect is too "abstract". But this same passage contrasts abstract and physical concepts. If the effect outside the computer can in principle fairly be described as a physical concept, process or effect then the same considerations do not, in my judgment apply."*

He goes on to conclude at paragraph 32 and 34:

> *"32. In the context of the present case, I would hold that the contribution made by claim 33 includes, in addition to the features identified by the Hearing Officer, the generation of a more rapid and reliable alarm notification. Viewed in that way, although, at a high level of generality, alarm notifications were not novel, the particular alarm notification described in the specification and claimed in claim 33 was not known and formed part of the contribution to human knowledge made by the application.*
>
> *…*

[5] Patent Decision BL O/312/15
[6] Protecting Kids the World Over (PKTWO) Ltd's patent application, [2011] EWHC 2720 (Pat); [2012] R.P.C. 13
[7] Gemstar-TV Guide International Inc v Virgin Media Ltd [2010] RPC 10

34. Accordingly I would hold that the contribution of claim 33 does not reside wholly within the computer program as such exclusion. I think that conclusion is in accordance with the AT&T signposts. In particular I would say that the invention solves a technical problem lying outside the computer, namely how to improve on the inappropriate communication alarm generation provided by the prior art. That is sufficient in my judgment to overcome the objection on the very specific facts of the case before me."

19 It is arguable that the present application meets the threshold for patentability set down by Floyd J. in *PKTWO* merely by the generation of a warning display based on evaluated criteria. However, the present application exceeds this threshold by including actions that are effected as a result of the generation of the warning display and therefore I am in no doubt that the present invention is technical in nature. As a consequence, the invention does not fall solely within excluded subject-matter.

Conclusion

20 I find that the invention in GB1404925.8 is not excluded by section 1(2) either as a program for a computer as such or a business method as such. I will remit the application to the examiner for further examination because the search needs to be updated and all other matters, such as novelty, inventive step and clarity have not yet been fully considered.

H JONES
Deputy Director, acting for the Comptroller