Intellectual Property Office

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PATENTS ACT 1977

APPLICANT	Ford Global Technologies, LLC
ISSUE	Whether patent application GB1114727.9 complies with the requirements of section 1(2)
HEARING OFFICER	B Micklewright

DECISION

Introduction

1 Patent application GB1114727.9 entitled "*Method and apparatus for providing a navigation summary"* was filed under the provisions of the Patent Cooperation Treaty on 29 December 2009 in the name of Ford Global Technologies, LLC. The application claimed an earliest priority date of 29 January 2009 and was initially published as WO2010/087932 on 5 August 2010. On entering the national phase in the UK it was subsequently re-published as GB2480575 A.

2 The examiner objected that the invention is excluded from patentability under section 1(2) of the Patents Act 1977 ("the Act") because it is no more than a program for a computer as such. The examiner and the applicant's attorney were unable to reach an agreement on this issue, all other objections having been resolved. The applicant therefore requested that the matter be referred for a decision on the papers.

The Invention

3 The application relates to obtaining a series of navigation directions and then, based at least in part on defined rules, providing a subset of those navigation directions as a summary of the directions. In this way travellers can input a starting location and a destination and be provided with accurate directions that are not overly complicated. If concise enough the summary can be delivered to the traveller as, for example, an SMS message.

4 In the final set of claims filed on 15 November 2016, there are 22 claims which includes two independent claims. I will focus on claim 1 in my considerations but they apply equally to claim 15.

> *1. A computer-implemented method of summarizing a navigation route comprising:*
> *receiving input specifying a destination from a source;*
> *determining a navigation route between at least a first location and the destination, wherein the navigation route consists of one or more roads;*

building a route summary comprising a subset of the one or more roads in the navigation route based at least in part on evaluating the one or more roads in the navigation route according to at least one rule for inclusion, wherein the basis for inclusion include at least one of: distance of travel on a road, whether the road is a main road, number of roads, type of road, road speed limits, number of characters in the road name, or how commonly travelled a road is; and

outputting the route summary via a delivery medium.

15. A computer-implemented route-summarizing apparatus including:

direction receiving programmed logic circuitry to receive input specifying a destination from a source;

direction determining programmed logic circuitry to determine a navigation route between at least a first location and the destination, wherein the navigation route consists of one or more roads;

summary building programmed logic circuitry configured to build a route summary comprising a subset of the one or more roads in the navigation route based at least in part on evaluating the one or more roads in the navigation route according to at least one rule for inclusion, wherein the basis for inclusion includes at least one of: distance of travel on a road, whether a road is a main road, number of roads, type of road, road speed limits, number of characters in the road name, or how commonly travelled a road is; and

delivery programmed logic circuitry to deliver the route summary via a delivery medium.

The Law

5 Section 1(2) of the Act declares that certain things are not inventions for the purposes of the Act, as follows:

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) 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 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.

6 The provisions of section 1(2) were considered by the Court of Appeal in *Aerotel*[1] where the following four-step test was laid down to decide whether a claimed invention is excluded from patentability:

i) Properly construe the claim;
ii) identify the actual contribution;
iii) ask whether it falls solely within the excluded subject matter;
iv) check whether the actual or alleged contribution is actually technical in nature.

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

7 It was stated by Jacob LJ in *Aerotel* that the test is a re-formulation of and is consistent with the previous "technical effect approach with rider" test established in previous UK case law. Kitchen LJ noted in *HTC v Apple*[2] that the *Aerotel* test is followed in order to address whether the invention makes a technical contribution to the art, with the rider that novel or inventive purely excluded matter does not count as a "technical contribution".

8 The Court of Appeal in *Symbian*[3] ruled that the question of whether the invention makes a technical contribution has to be addressed when considering the computer program exclusion, although it isn't critical whether that takes place at step 3 or 4.

9 In *AT&T/CVON*[4] Lewison J (as he then was) set out five signposts that he considered to be helpful when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple* Lewison LJ reconsidered the signposts in light of the decision in *Gemstar*[5]. The signposts are:

> *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 makes 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*

Assessment

Step (1): Properly construe the claims

10 The construction of claim 1 poses no particular problems and has not been disputed. Claim 1 defines a computer-implemented method of summarising a navigation route that comprises the steps of: receiving a specified destination from a source; determining a navigation route between a location and this destination, the navigation route consisting of one or more roads; building a route summary comprising a subset of these roads included in the navigation route by evaluating the roads against at least one rule for inclusion; and outputting the route summary via a delivery medium.

Step (2): Identify the actual contribution

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[2] *HTC v Apple* [2013] EWCA Civ 451
[3] *Symbian Ltd v Comptroller-General of Patents* [2009] RPC 1
[4] *AT&T Knowledge Ventures/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)
[5] *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

11 In paragraph 43 of *Aerotel,* Jacob LJ outlined the considerations to be applied when identifying the contribution made by the claims. He explained that this is probably best summed up by determining what the inventor has really added to human knowledge and involves looking at the substance not the form of the claims. However, the court acknowledged that for a patent application, rather than a granted patent, it may only be possible to identify the alleged and not the actual contribution. Paragraph 43 of *Aerotel* goes on to explain that determining the contribution is an exercise in judgment probably involving the problem said to be solved, how the invention works and what its advantages are. It is useful to consider these three factors.

12 Beginning with the problem to be solved, the description on page 1 informs us that with the advent of personal navigation devices and Internet mapping engines travellers can routinely input a starting location and a destination and receive a detailed series of instructions on how to reach the destination. The specification goes on to explain that the instructions are however often overly precise and detailed. The user, especially if familiar with the area in which they are travelling, may only want a brief summary of the route to be travelled and unnecessary precision may serve only to confuse the traveller. The problem to be solved is therefore how to produce summarised navigation directions based on detailed navigation directions to provide a traveller with an accurate, concise set of instructions as to how to reach a destination.

13 The illustrative embodiments are centred on system architecture of an on-board communication system for delivery of directions to an automobile. A processor within the vehicle controls the operation of the system. Upon receiving input (by button selection, voice prompt etc.) defining a desired destination, the processor will first determine a complete route between, for example, the user's present position and the desired location. This route information may be obtained from a personal navigation device, vehicle navigation device or remote source. The navigation route comprises a series of roads. Once the route has been determined each road in the route is assigned a weighted value and these weightings are used to determine which roads are to be included in the summary by measuring the roads against each other. There are many ways of measuring the roads against each other for inclusion/exclusion. As specified in the independent claims the rules for inclusion can be based on distance of travel on a road, whether the road is a main road, number of roads, type of road, road speed limits, number of characters in the road name, or how commonly travelled a road is. After assigning weighted values to the roads, one or more further rules may be used to determine which roads should be included in the summary, for example to keep the summary within a certain size. Once the roads have been included or excluded from the summary, the summarised route is displayed or otherwise delivered to the user. A multitude of delivery modes are envisaged including SMS messaging, email, on-board display and spoken delivery via voice synthesis.

14 The key advantage of the invention is that the user is presented with a simple summary route tailored according to particular criteria rather than a superfluous, overly-detailed route. The applicant's attorney in his letter of 15 November 2016 explains that the invention has further advantages. Firstly the reduced size of the output summaries means the system may be implemented effectively in association with delivery targets having limited processing capability of their own. Similarly the

reduced output summaries make them more conveniently transmitted through means such as SMS so that important directions can be delivered to the driver when this might not otherwise be possible and/or timely. The attorney points out that the route summaries contribute to an improved level of safety since the driver will not be distracted by overly-detailed directions. He explains further that the driver will be able to have a single route-setting event before setting out rather than trying to reduce the number of unnecessary directions by setting or re-setting the navigation system once a familiar route at the beginning of a journey has been passed. Finally, directions delivered at important unfamiliar junctions, he explains, are not cluttered by familiar directions so that a turn is notified more clearly.

15 I am willing to accept that the invention may indeed have some of these advantages, in particular those arising directly from a route summary which includes a subset of the roads in the navigation route, but I must be careful not to read more into the claim than is present. For instance there are no specific limitations in claim 1 which would ensure that the route summaries could be transmitted through delivery targets with limited processing capability or through means such as SMS. Moreover, although the summarised routes may at times improve safety, there is no limitation in the claim which would ensure they have this effect. Furthermore it is not necessarily the case that familiar directions are excluded and unfamiliar directions included, although this may occur depending on the specific rules for inclusion selected. I therefore conclude that, although these potential advantages provide some context to the contribution, they do not form part of the contribution itself. I will however bear them in mind when considering whether the contribution lies solely in the excluded fields.

16 I also note that the invention is implemented using conventional hardware such as the on board processor itself, the navigation device or remote source providing the original detailed route instructions, and the delivery media. These elements therefore do not form part of the contribution.

17 From these considerations, I regard the contribution to be a computer-implemented method of summarising a navigation route consisting of one or more roads by evaluating the roads in the route and subsequently including a subset of them in a more convenient route summary according to at least one rule.

Steps (3) & (4): Does the contribution fall solely within the excluded subject matter; Check if the contribution is actually technical.

18 I will deal with steps (3) and (4) together. I must now decide whether the contribution is technical in nature or whether it falls solely within excluded subject matter and will consider the *AT&T* signposts listed above.

19 Signpost (i) is concerned with whether the claimed technical effect has a technical effect on a process which is carried on outside the computer. Regarding this signpost, the attorney notes that the claimed method is implemented in a processor that receives destination input from a source and outputs the route summary via a delivery medium. He explains further that the processor is separate from the source of the destination information and the target for delivery, both of which may be remote from the processing system. I note however that the hardware employed is entirely conventional including the navigation device providing the necessary input

and the delivery media outputting the route summary. Further, it is commonplace for a method implemented in a processor of a computer to take input and provide output to or from one or more separate or even remote devices. This feature on its own cannot confer a technical aspect to the invention. Moreover the processor, input and output devices together form a computer system, albeit one which may be distributed, and therefore do not in themselves result in a technical effect on a process carried on outside the computer.

20 The applicant's attorney also argues that the summarised route directions of the invention contribute to an improved level of safety since the vehicle driver will not be distracted by overly detailed directions, and that the driver's journey will not be interrupted with the need to reset the navigation system en route. Further, he submits that the driver will be less distracted by unnecessary directions at familiar junctions and will therefore be less likely to miss a turn. None of these proposed effects has however been quantified in any way either in the description or the claims and, as I have already found, are not necessary features of the invention. For example there is no claimed requirement to ensure a route is reduced in such a way so that it will not distract the driver. In any case, I cannot see that these effects have a *technical* effect on a process outside the computer. The driver may have a safer, less-interrupted journey, but this is achieved through the processing and subsequent reduction of the navigation directions rather than through any technical means.

21 Also of relevance to signpost (i), the attorney asserts that the reduced size of the route summaries reduces the overall signalling and thus the system may be implemented in association with delivery targets having limited processing capability. Similarly, he argues that the reduced size of the route summaries makes them capable of delivery via 'limited capacity' media such as SMS. Therefore, he argues, it is possible to get 'important' directions to the driver where this might not otherwise be possible and/or timely. These contributions, he argues, relate to processes taking place outside the computer system in which the method is implemented. I note however that claim 1 allows summaries of any length without any restriction according to delivery target. These perceived advantages are not therefore a required outcome of the invention. Moreover, I cannot see that these features have a *technical* effect on a process outside the computer. The invention uses a computer program to reduce the data sent via the delivery targets. The delivery targets are entirely conventional and operate as normal but with the reduced dataset.

22 The attorney has not presented any arguments with respect to signposts (ii) and (iii) which are concerned with whether the claimed technical effect operates at the level of the architecture of the computer or results in the computer being made to operate in a new way. For completeness I will consider these signposts. It is clear that the claimed invention is implemented using conventional hardware. The processors in these components may have less data to process but will otherwise operate as normal. Moreover the invention clearly operates at the application level and is not independent of the data being processed. There is no effect at the level of the architecture in these devices. The claimed invention does not therefore satisfy these signposts.

23 Regarding signpost (iv) which is concerned with whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer, the attorney argues that the combined operation of the invention

generates a route summary from a destination input that reduces the processing of legs of the route that will not appear in the summary. This he argues will lead to a more efficiently running system for generating route summaries. As however I have already observed for signposts (ii) and (iii), the processor (and other components) are entirely conventional. They may have less data to process as a result of summarising the navigation route but will be running as normal. This signpost therefore also does not point to a technical contribution.

24 The attorney has not presented any specific arguments with respect to signpost (v) which is concerned with whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented. Again, I will cover this signpost for completeness. As discussed above the perceived problem appears to be how to produce summarised navigation directions based on detailed navigation directions to provide a traveller with an accurate, concise set of instructions as to how to reach a destination. The problem is therefore essentially how to reduce a set of known instructions to a smaller set of instructions. This is not a technical problem. Moreover, the problem has been addressed by the invention in a non-technical way by using a conventional processor to implement an appropriate programming routine. It has been established that the solution of a non-technical problem cannot take technical character from the problem but it may have some other technical effect. However, as discussed above no relevant technical effect is apparent. Even if the problem could be seen as, for example, how to allow navigation instructions to be sent over delivery media of limited processing and/or display capability, the invention does not solve this problem in any technical sense. It merely circumvents the problem by using a computer program to limit the data sent via the delivery media in the first place.

25 In summary I have considered all of the attorney's arguments in light of the five *AT&T* signposts and I am satisfied that the identified contribution is not a technical contribution in nature and falls solely within excluded subject matter. I am unable to find any technical effect which would extend the effect of the contribution outside excluded subject matter. My conclusion applies equally to independent claim 15.

Conclusion

26 I conclude that the invention as defined in independent claims 1 and 15 relates to a program for a computer as such and thus is excluded from patentability under section 1(2)(c). After carefully examining the application as a whole I can see no amendment that would render the claims patentable. I therefore refuse the application.

Appeal

27 Any appeal must be lodged within 28 days after the date of this decision.

B Micklewright

Deputy Director, acting for the Comptroller