Intellectual Property Office

BL O/345/20

04 August 2020

PATENTS ACT 1977

APPLICANT	Motorola Solutions, Inc.
ISSUE	Whether patent application GB1509562.3 complies with section 1(2) of the Patents Act 1977
HEARING OFFICER	Phil Thorpe

DECISION

Introduction

1 Patent application GB1509562.3 was filed on 25 November 2013 as a Patent Cooperation Treaty application and was published on 26 August 2015 as GB 2523496.

2 There have been several rounds of correspondence between the applicant and the examiner and several amendments made to the application. Nevertheless, they have been unable to agree that the application complies with section 1(2) of the Patents Act 1977 ("the Act") and specifically whether it consists of a program for a computer. Consequently, the matter has come to me to reach a decision based upon the papers on file.

3 Along with skeleton arguments supporting the claims as amended, Ms. Tolfts of Optimus Patents Limited acting on behalf of the applicant has provided an auxiliary request in the form of amended claims and accompanying arguments.

The invention

4 The invention is concerned with video tagging and analytics and more particularly to systems and methods for using Computer Assisted Dispatch (CAD) incident reports for video tagging, searching, analytics or the like.

5 According to the description the invention integrates CAD with video surveillance systems to aid in searching video content and subsequent tagging of the video content for video analytics. This includes extracting keywords from a CAD incident report and creating a small, focused, and incident-specific dictionary on which to perform video searching in real-time or later. The description suggests that the small, focused, and incident- specific dictionary increases tagging accuracy and reduces tagging processing time with respect to video analytics. Further, the invention can continually update the incident- specific dictionary as the CAD incident report is updated and as the incident of interest plays out. This can be used for real-time, near

real-time, or later processing of captured video. The CAD system can be communicatively coupled to a video surveillance system for dissemination of the incident-specific dictionary based on individual camera's relevance to the incident of interest.

6 Figure 2 illustrates the method of the invention:

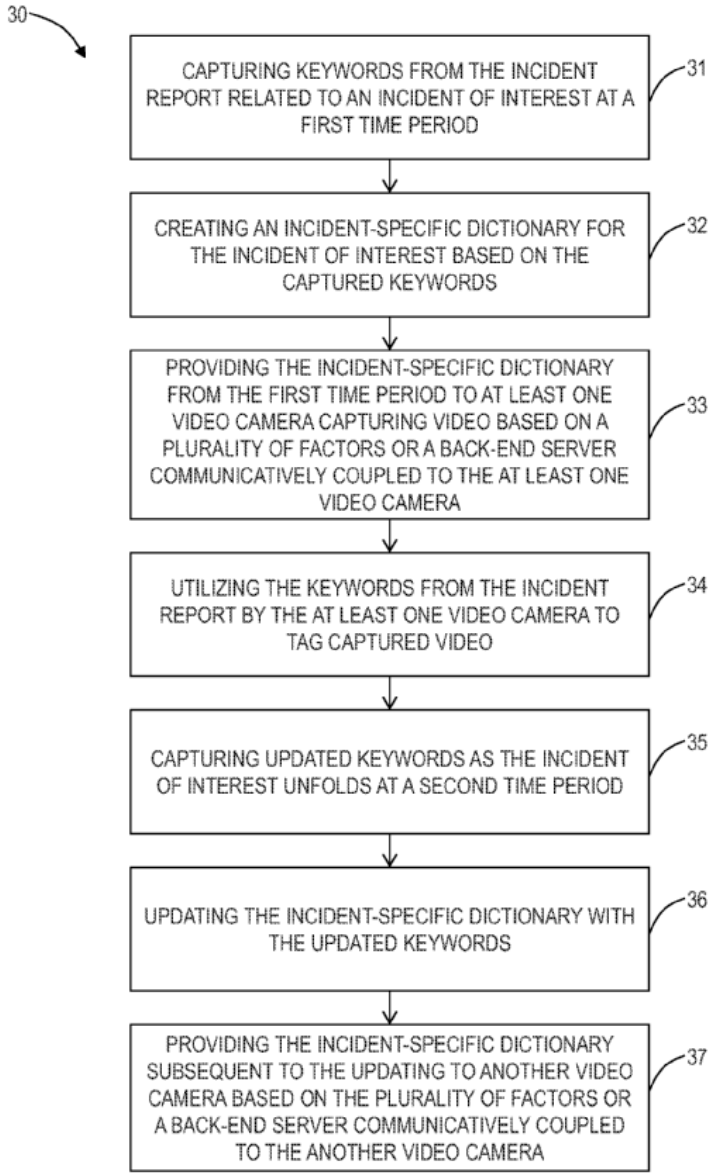

FIG. 2

7 The application provides a number of examples to illustrate the invention. In the following the CAD report reads:

> INCIDENT: Armed Robbery (in progress)
>
> SYNOPSIS: “Caller reports Quick Mart convenience store being held up/Caller advises suspect is in a white 2 door sedan speeding away heading west/Unit 746 in pursuit of the white 2 door sedan heading north on South Blvd/Suspect driver is wearing a red jacket and glasses.”

UNITS: 746 (in pursuit), 749 (in route)

8 From this report the CAD system might extract the following keywords for the incident specific dictionary:

> White 2 door sedan; red jacket; glasses as well as various geographic descriptions i.e. 1234 Main St; speeding away heading west; heading north on South Blvd;

9 The dictionary can then be used by a video capture system to tag video captured during the incident or afterwards. It can also be used to tag previously captured video. As the incident develops, the dictionary can be updated.

10 The claims as currently amended were filed on 2nd March 2020. There is a single independent method claim as follows:

> *A video tagging method based on an incident report and an associated incident-specific dictionary, comprising:*
> *capturing keywords from the incident report related to an incident of interest at a first time period;*
> *creating an incident-specific dictionary for the incident of interest based on the captured keywords;*
> *capturing updated keywords as the incident of interest unfolds at a second time period;*
> *updating the incident-specific dictionary with the updated keywords;*
> *providing the incident-specific dictionary from the first time period to at least one video camera capturing video based on a plurality of factors or a back-end server communicatively coupled to the at least one video camera;*
> *utilizing the keywords from the incident report by the at least one video camera to tag captured video; and*
> *providing the incident-specific dictionary subsequent to the updating to another video camera based on the plurality of factors or a back-end server communicatively coupled to the another video camera.*

11 As I noted earlier Ms. Tolfts has also provided an auxiliary request. Once again there is a single independent method claim, which is as follows with the changes highlighted:

> *A video tagging method based on an incident report and an associated incident-specific dictionary, comprising:*
> *capturing keywords by a Computer Aided Dispatch (CAD) system from the incident report related to an incident of interest at a first time period;*
> *creating an incident-specific dictionary for the incident of interest based on the captured keywords by the CAD system;*
> *capturing updated keywords as the incident of interest unfolds at a second time period;*
> *updating the incident-specific dictionary with the updated keywords;*
> *wherein the CAD system is configured to disseminate ~~providing~~ the incident-specific dictionary from the first time period to at least one video camera capturing video based on a plurality of factors or a back-end server communicatively coupled to the at least one video camera;*
> *utilizing the keywords from the incident report by the at least one video camera to tag captured video; and*
> *wherein the CAD system is configured to disseminate ~~providing~~ the incident-specific dictionary subsequent to the updating to another video camera based on the plurality of factors or a back-end server communicatively coupled to the another video camera, further comprising*
> *receiving the incident-specific dictionary at the at least one video camera or the back-end server communicatively coupled to the at least one video camera;*

capturing video by the at least one video camera;
tagging the captured video with the keywords from the incident-specific dictionary; and
uploading the captured video with the tagged keywords,
analyzing the captured video for detection based on the keywords; and
providing an alert upon detecting one of the keywords in a portion of the captured video.

The law

12 The examiner has raised an objection under section 1(2) of the Patents Act 1977 that the invention is not patentable because it relates to one or more categories of excluded matter. The relevant provisions of this section of the Act are shown with added emphasis 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*
>
> *–*
>
> *(c) … **a program for a computer**;*
>
> *–*
>
> *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.*

13 As explained in the notice published by the UK Intellectual Property Office (IPO) on the 8th December 2008[1], the starting point for determining whether an invention falls within the exclusions of section 1(2) is the judgment of the Court of Appeal in *Aerotel/Macrossan*[2].

14 The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian*[3]. *Symbian* arose under the computer program exclusion, but as with its previous decision in *Aerotel* the Court gave general guidance on section 1(2). Although the Court approached the question of excluded matter primarily on the basis of whether there was a technical contribution, it nevertheless (at paragraph 59) considered its conclusion in the light of the *Aerotel* approach. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*[4] which rested on whether the contribution was technical; and that any differences in the two approaches should affect neither the applicable principles nor the outcome in any particular case.

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[1] http://www.ipo.gov.uk/pro-types/pro-patent/p-law/p-pn/p-pn-computer.htm
[2] *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7
[3] *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1
[4] *Merrill Lynch's Appn*. [1989] RPC 561

15 Subject to the clarification provided by *Symbian*, it is therefore appropriate to proceed on the basis of the four-step approach explained at paragraphs 40–48 of *Aerotel* namely:

> *(1) Properly construe the claim.*
> *(2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution).*
> *(3) Ask whether it falls solely within the excluded matter.*
> *(4) If the third step has not covered it, check whether the actual or alleged contribution is actually technical.*

16 Lewison J (as he then was) set out in *AT&T/CVON*[5] five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. In *HTC*[6] the signposts were reformulated slightly in light of the decision in *Gemstar*[7] and so they are as follows:

> *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.*

17 It is important to stress that these signposts are just that. They are not barriers or hurdles that need to be individually or collectively overcome by the applicant. They are rather a non-exhaustive list of some of the factors that can indicate whether a particular contribution may be technical.

Applying the Aerotel test

Step 1 - Properly construe the claim

18 Whilst the claims are generally clear, there are a couple of aspects that I wish to highlight. Claim 1 as amended is directed to a video tagging method with the penultimate step specified as tagging captured video forming. The final step however refers to providing the updated dictionary to another video camera or to a back-end server connected to that camera. However, nothing further is said in claim 1 about what is done with the updated dictionary. It is I believe implicit that it is or

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[5] *AT&T Knowledge Ventures/CVON Innovations v Comptroller General of Patents [2009] EWHC 343 (Pat); [2009] FSR 19*
[6] *HTC v Apple [2013] EWCA Civ 451*
[7] *Gemstar-TV Guide International Inc v Virgin Media Ltd [2009] EWHC 3068 (Pat); [2010] RPC 10*

might be used for tagging video captured by the another video camera. There is another minor issue with the updated dictionary in claim 1 as amended. The dictionary is first created with keywords at a first time period and then updated with keywords at a second time period, but the step after updating the dictionary is to provide the dictionary from the first time period to a camera or a server, i.e. the original dictionary before updating. It is this un-updated dictionary that is used for tagging captured video. It is not entirely clear that all of the steps in the method occur sequentially, but I note that figure 2 does present a sequential flow whose steps occur in a different order to claim 1. I think the skilled reader would conclude that figure 2 shows the correct the sequence of events. Overall, I question what role the updated dictionary plays in the method of claim 1 as amended.

19 Essentially, I think I have two choices. I could construe the claim such that the updated keywords and updated dictionary are irrelevant to the video tagging method of claim 1 as amended, since they are required to play no role in the tagging method claimed. Alternatively, I could conclude that there is an implicit final step of using the updated dictionary to tag video captured by the another video camera. As originally filed claim 1 of the PCT application did not refer to updating the dictionary or to another video camera. These steps were incorporated prior to entering the national phase. In light of this I shall proceed on the basis that there is an implicit final step to claim 1 as amended. However, should I decide that the invention claimed is not excluded from patentability I would refer the application back to the examiner to resolve these matters.

20 The auxiliary request causes me the same difficulties with the role of the updated dictionary. In addition, the step of tagging video captured by the video camera first referred to seems to be repeated, as by implication is the step of capturing video with that camera. Having concluded above that there is an implicit step of tagging video captured by the another camera using the updated dictionary there is a question of whether there are further implied steps of uploading and analysing this video. Tentatively I would suggest that it would be odd to exclude the video from the another camera from the uploading and analysis steps. I also feel that the method in claim 1 in the auxiliary request goes beyond a video tagging method to which the claim is currently directed and might be better described as a video analytics method. Once again, I feel that these issues would need to be resolved before a patent could be granted.

Step 2 - Identify the actual contribution

21 In this context there is a quote from Jacob LJ in *Aerotel/Macrossan* to which reference is often made and part of that quote is *"What has the inventor really added to human knowledge perhaps best sums up the exercise.*". Jacob LJ goes on to say "*[i]n the end the test must be what contribution has actually been made, not what the inventor says he has made*".

22 The applicant suggests that the contribution of the invention in the amended claims is characterised as an improved method for tagging a video with keywords, so that the video can be easily searched and more particularly the keyword dictionary that is used for tagging the video can be updated with additional keywords, as an incident is occurring to reflect the events that are happening in the real-time in the incident.

23 It suggests that the contribution of the first auxiliary request is to provide a video tagging method that can take keywords from a CAD system to tag the video, upload the video with tagged keywords so the video can be analysed and then provided as an alert when a keyword is detected in a portion of the captured video.

24 The application has been searched and has been examined for novelty and inventive step, although that search has yet to be updated. In the absence of any objections I take it that the invention claimed is novel and inventive and reflects what the inventor has really added to human knowledge.

25 In the application the discussion of preceding systems is limited, but it seems to me that the inventors are not laying claim to the notion of tagging captured video per se nor of employing a dictionary in doing so. What the inventors have apparently added is the creation of an incident specific dictionary and updating that dictionary as the incident unfolds.

26 Despite the claims making no explicit mention of a computer system it seems clear to me that the invention is computer implemented and further it seems reasonable to reflect this in the contribution.

27 To my mind the contribution of the amended claim is an improved, computer implemented video tagging method using an incident-specific dictionary that is updated as the incident unfolds. I do not think this differs significantly from what the applicant is suggesting except to acknowledge the computer implementation but stopping short of declaring immediately that the contribution is a computer program and thereby rendering the remaining *Aerotel* steps redundant.

Step 3 - Ask whether it falls solely within the excluded matter
Step 4 - Check whether the actual or alleged contribution is actually technical

28 I will consider steps 3 and 4 together, i.e. whether the contribution is technical or whether it falls solely within the excluded matter of a program for a computer. I will consider initially the signposts from *HTC*. The applicant focuses its argument in respect of the amended claim on signposts (iii) and (v).

29 The applicant notes that the computer does indeed operate in a new way and hence the third signpost is present. Referring to claim 1 as amended it is argued that the method creates a new dictionary whose keywords are used for tagging captured video and which is provided to a second video camera. Whilst this is true, I do not understand how it addresses the third signpost. A similar argument is advanced for the claim in the auxiliary request.

30 The only way in which the invention could be said to make the computing system operate in a new way is in the sense that on some level new software invariably results in a computer being made to operate in a new way. It cannot be correct that simply demonstrating that a computer program is novel means that it necessarily avoids the exclusion in section 1(2). Rather what signpost iii) is concerned with is whether the computer itself is operating in a new way. What is new here however is not how the computer operates but how the process of tagging video is performed. In other words it is how the particular data is processed that is new. This may enable

the particular data to be processed more efficiently but that is not the result of the computer operating in a new way. To my mind the third signpost is not present.

31 I would add, even though it has not been argued, that any increased speed or efficiency in the processing of the data here is not because the speed of the computer has been increased but rather because of the different way the data is being processed. Hence, I do not believe that signpost iv) is of assistance here.

32 The applicant highlights in respect of signpost v) that the problem that the invention addresses is the large amount of complex and time-consuming processing necessary when tagging video using conventional dictionaries which are large. I am content to accept that employing a smaller, incident-specific dictionary that can be updated for the tagging task does improve the efficiency of the processing and indeed may save time. However, as Lewison J highlighted in paragraph 35 of *AT&T*, what signpost v) is referring to is the sort of invention where "a technical problem" is solved by "technical means". In this instance the problem of the speed of processing the data is in effect solved by changing in a non-technical way the underlying way the data is processed ie. it uses an incident specific and updatable dictionary. That is not a technical solution to the problem as envisaged by signpost v).

The Auxiliary claims

33 The auxiliary claims differ from the amended claims discussed above most significantly in that they include a final step of "providing an alert upon detecting one of the keywords in a portion of the captured video". The nature and purpose of this alert is not entirely clear. The only part of the description in the application that sheds any light is paragraph 34 which notes that:

> "The instructions that, when executed, further can cause the processor to receive an alert from one of a plurality of video cameras that a keyword from the incident-specific dictionary or the updated incident-specific dictionary has been detected in captured video."

34 The applicant suggests with reference to signpost i) of AT&T that the "very nature of the alert is that it is an external feature" and hence the invention provides a "technical effect on a process carried on outside the computer". Even if I accept that the alert is generated for the benefit of the user of the method, that still would not in my opinion provide any technical effect on a process outside of the computer. Indeed I do not believe that the applicant or the application provides any indication of what process outside of the computer is affected let alone whether the effect on that process is technical in nature.

35 In *Protecting Kids the World Over (PKTWO) Ltd's Patent Application*[8] the provision of an alarm was considered relevant in the determination of whether the invention in issue there was excluded. Floyd J noted that:

> "I start with the proposition that the generation and transmission of an alert notification to the user/administrator is not a relevant technical process. I accept that in many cases this may be correct. Plainly it was correct in the case of two out of the three patents considered by Mann J. in Gemstar, where information was simply displayed on a screen. But what is in play in the present case, namely an alarm alerting the user, at a remote terminal such as a mobile device, to the fact that inappropriate content is being processed within the computer, is in my

[8] *Protecting Kids the World Over (PKTWO) Ltd's Patent Application* [2012] RPC 13

> judgment qualitatively different. First of all, the concept, although relating to the content of electronic communications, is undoubtedly a physical one rather than an abstract one. In that respect it was more akin to the third of the three patents considered by Mann J. in Gemstar .
>
> Secondly, the contribution of claim 33 does not simply produce a different display, or merely rely on the output of the computer and its effect on the user. The effect here, viewed as a whole, is an improved monitoring of the content of electronic communications. The monitoring is said to be technically superior to that produced by the prior art. That seems to me to have the necessary characteristics of a technical contribution outside the computer itself. The generation and transmission of an alert notification to the user/administrator might not be a relevant technical process in many cases. However the invention in the present case, an alarm alerting the user, at a remote terminal such as a mobile device, to the fact that inappropriate content was being processed within the computer, was qualitatively different. The concept, although relating to the content of electronic communications, was undoubtedly a physical one rather than an abstract one and the contribution of claim 33 did not simply produce a different display, or merely rely on the output of the computer and its effect on the user. The effect, viewed as a whole was an improved monitoring of the content of electronic communications. The monitoring was said to be technically superior to that produced by the prior art and that had the necessary characteristics of a technical contribution outside the computer itself.
>
> 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.

36 I can find nothing in this judgement to lead me to conclude that the provision of the alert in the application in issue here renders the claimed invention allowable. In *PKTWO* the alert or alarm was provided to the user in an electronic communication and/or was able to shut down the equipment being monitored. In contrast the application here is silent on what if anything the alert does. Indeed it is closer I believe

37 The applicant has sought to argue that signposts iii) to v) are also met by the invention in the auxiliary claim. These arguments however repeat much of the arguments made in respect of the amended claims which I have already found to be unpersuasive. The additional steps of providing an alert and uploading the captured and tagged video do not in my opinion alter the conclusions I have already reached. For example, the applicant argues that the invention in the auxiliary claim provides for a quicker and more efficient generation of an alert that a video has been tagged with a keyword from the incident specific dictionary. However, as I noted previously the solution provided by the invention to the problem, even If I consider the problem to be a technical one, is not by means of something that is technical in the sense required. Rather it is achieved by employing a smaller, incident-specific dictionary for the tagging task and hence is in effect the same solution as for amended claim 1.

38 Hence, I am not persuaded that any of the signposts are of assistance to the applicant in respect of both the amended claims and the auxiliary claims. Further if I take a step back from the signposts, I remain of the view that notwithstanding that the invention is implemented by a computing system and that such a system is undeniably a technical device, the contribution made by the invention is not technical.

Conclusion

39 I find that the invention claimed in GB1509562.3 falls solely within matter excluded under section 1(2) as a program for a computer as such. I also find that the invention set out in the auxiliary request also falls solely within matter excluded under section 1(2) as a program for a computer as such. I therefore refuse this application under section 18(3).

Appeal

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

PHIL THORPE

Deputy Director, acting for the Comptroller