



20 October 2020

## PATENTS ACT 1977

APPLICANT Corey Kaizen Reaux-Savonte

ISSUE Whether patent application number GB 1602269.1  
complies with sections 1(2), 14(3) and 14(5)(c)

HEARING OFFICER Mr B Micklewright

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## DECISION

### Background

- 1 This decision addresses whether the invention claimed in patent application number GB1602269.1 is excluded from patentability, whether the claims are clear, and whether the invention is disclosed clearly and completely enough to be performed by a person skilled in the art.
- 2 The application was filed in the name of Corey Kaizen Reaux-Savonte on 9 February 2016 and was subsequently published as GB2550832 A on 6 December 2017. The two examiners involved with the application argued that the invention is excluded under section 1(2)(c) of the Patents Act 1977 (“the Act”) as a program for a computer as such and is also not sufficiently disclosed under section 14(3) of the Act. The examiner also considered the claims to be unclear under section 14(5)(c) of the Act. The applicant disagreed and, following several rounds of correspondence, the matter came before me at a hearing on 12 February 2020, at which the applicant represented himself.
- 3 Mr Corey Reaux-Savonte filed several rounds of observations and amendments during the examination process, the latest of which included amended claims dated 30 September 2019. Issues to be decided at the hearing were set out by the examiner in a pre-hearing letter of 3 December 2019. Prior to the hearing, Mr Reaux-Savonte’s letter of 3 February 2020 set out skeleton arguments. I thank Mr Reaux-Savonte for his analysis and submissions set out in that letter. I confirm that in reaching my decision I have considered all the correspondence on file.

- 4 I note that all other matters in relation to the application, including the search, have not yet been considered by the examiner and would need consideration if the application was to be allowed on the matters considered in this decision.

### **The Invention**

- 5 The invention relates to a control system involving Artificial Intelligence (AI). An observation is made, for example by a sensor, which generates data, and that data may travel down one of two paths. In one path the AI is able to make certain choices in relation to what actions to perform on the data (if any) and in the other path a set of rules is followed without the AI being able to have any input that can influence the result. The outcome of each path is however based, amongst other things, on the “relationships and/or priorities and/or values of an AI” and according to the application the system enables the AI to have the ability to consider conscious and subconscious inputs when deriving an output.
- 6 The application was last amended with the applicant’s letter of 30 September 2019. It comprises 72 claims. Claim 1, the only independent claim, reads:

*1. A dual-type control system, comprising:*

*one or more methods of observation;  
two or more data paths;  
one or more SAC;  
two or more decision-making abilities; and  
one or more methods of communication;*

*wherein the two or more data paths carrying data from the point of observation to the point of communication allows the data to travel via one of two paths at the point of decision making, wherein:*

*one path leads the data through a decision-making logic process which allows an AI, during at least one stage of the process, to choose at least one of the following:  
whether or not to continue; and/or  
what action to perform; and/or  
whether or not an action should be performed;*

*based on the current result; and*

*one path leads data through a decision-making process that follows a set of rules, without the AI able to have any input that can influence the result, regardless of the current result at any point;*

*where the outcome(s) of each path is based on:*

*the relationships and/or priorities and/or values of an AI;  
and/or the mechanics implemented for conscious and subconscious activity; and/or  
how data was observed.*

### **The Law**

- 7 Section 1(2) of the Act states:

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, a 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 program for 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.

8 The provisions of Section 1(2) were considered by the Court of Appeal in *Aerotel*<sup>1</sup> when a four-step test was laid down to decide whether a claimed invention is excluded from patent protection:

- (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.*

9 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*<sup>2</sup> 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”.

10 The Court of Appeal in *Symbian*<sup>3</sup> ruled that the question of whether the invention makes a technical contribution must be addressed when considering the computer program exclusion, although it does not matter whether that takes place at step 3 or step 4.

11 Lewison J in *AT&T/CVON*<sup>4</sup> set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. Lewison LJ reformulated the signposts in *HTC v Apple* in light of the decision in *Gemstar*<sup>5</sup>. 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.*

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

<sup>2</sup> *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451

<sup>3</sup> *Symbian Ltd v Comptroller-General of Patents* [2009] RPC 1

<sup>4</sup> *AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

<sup>5</sup> *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

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.*

- 12 Section 14 of the Act, entitled '*Making of Application*', sets down a number of requirements for a patent application. Sections 14(3) and 14(5)(c) relate to the specification and the claims respectively and read as follows:

(3) The specification of an application shall disclose the invention in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the art.

.....

(5) The claim or claims shall –

- (a) ...;
- (b) be clear and concise;
- (c) be supported by the description; ...
- (d) ....

## **Arguments and analysis**

### **Excluded matter**

- 13 I will consider each of the *Aerotel* steps in turn in my analysis.

(1) *Properly construe the claim*

- 14 Construing claim 1 presents some difficulties. Claim 1 is directed towards a “dual-type control system” and its components. I will take it that the ‘dual’ feature is referring to the two communication paths, as are defined in the claim. According to page 6 of the description the term “system” may be used to refer to an AI and this is consistent with the other features set out in the claim. Simplistically put, the system (AI) receives input data from an observation, performs actions upon it in separate paths and communicates a decision.
- 15 I am in agreement with both the examiner and Mr Reaux-Savonte as to what constitutes an “observation”. It could, for example, be the output of a sensor, camera or microphone. As such, and for the benefit of this analysis, I take the observation to mean a source of data.
- 16 One issue with the claim is that the components in the claim do not all directly relate to each other. For example, the claim defines “two or more decision-making abilities” and “one or more methods of communication” which are not directly referred to in the rest of the claim. I however consider that the “two or more decision-making abilities” refer to the two ways that data can be processed in the two data paths defined in the claim. The “one or more methods of communication” presumably refers to the manner in which the result of the process is communicated “at the point of

communication". No details of this communication are specified in the claim. I will take a broad view as to what is meant by communication and accept that at its very basic level it could be an output to a screen.

- 17 The claim also refers to "one or more SAC", a SAC being a set of Scales And/or Charts as defined in page 7 of the description. There is however no clear indication as to its purpose or to the features of the claim it is intended to interact with. It could be used in either or both data paths but this is not clear. From reading the description the SAC is defined with reference to application GB1517146.5, wherein a numerical value can be applied to how the AI is feeling (scale). For the purposes of this decision it is sufficient for me to assume that AI technologies mentioned in the claim will base at least some of their calculations on the "one or more SAC" and the "one or more SAC" is therefore part of the decision-making process of each channel, but the claim requires further clarification.
- 18 My interpretation of the system of claim 1 is that the data takes one of two paths, one path which appears to use AI and the other path which uses rule-based logic to process the data. The first of these paths processes the data with the intervention of AI. If the data takes this path the AI selects one or more actions based on a "current result". It is not clear what is being referred to as the "current result". I will take it to mean the values of the data being processed at the point that that AI selects an action. I note that, according to claim 1, the list of actions the AI could select from include choosing not to continue and it could also choose not to perform any actions. The alternative path uses a set of rules (no AI intervention used) to determine an outcome.
- 19 In my view the final four lines of the claim, which relate to the outcome(s) of each path, are obscure. They state that such outcomes are based on "the relationships and/or priorities and/or values of an AI; and/or the mechanics implemented for conscious and subconscious activity; and/or how data was observed". I don't consider these features to be clear, and nor is it clear what their effect is on the data passing through the data paths. As defined on page 7:
- "The term "conscious" refers to processes that an AI means, intends or decides to do.
- The term "subconscious" refers to processes that an AI does not mean, intend or decide to do."
- 20 If I understand the applicant's observations correctly, what is happening is that this is the dynamic or "feeling" part of the AI that can be altered as it learns. This learned behaviour mirrors the Freudian approach of conscious behaviours becoming subconscious behaviour (or automatic thoughts). For the purposes of this decision I will assume that these features contribute in some way to the decision-making process, and therefore the outcome, for each path.

*(2) Identify the actual contribution*

- 21 The second stage of the *Aerotel* test is to identify the contribution. In this instance, it is the alleged contribution since no search has been performed. I have construed the observed data to refer to any standard known data source. The hardware architecture is made up of known common systems, as was acknowledged as such

by Mr Reaux-Savonte at the hearing. The description on pages 20-21 also supports this.

- 22 The implementation of the two processing paths forms part of the contribution. I agree with both the examiner and applicant's assessment that these can be implemented using threads in a multithreaded approach. As a result, the contribution appears to relate to a multithreaded program system for implementing an AI.
- 23 The applicant argues that the examiner is incorrect to take the view that the invention resides solely in software. The application mentions the use of conventional multithreading, multicore processing and multiprocessing which relates to hardware and the use of software which is used to assign data through the various processors associated with particular data path(s). I accept that the claimed AI system would be implemented using an arrangement of hardware, for example multithreaded, multicore processing systems which are commonly used. I note however that the claim does not define any specific hardware and therefore conclude that the specific hardware arrangement does not form part of the contribution.
- 24 I have carefully considered the final four lines of the claim but, given their unclear nature, I cannot identify a clear way in which they contribute to the contribution except in the general sense that the outcomes are said to reflect conscious and subconscious behaviour.
- 25 Having considered the application as a whole and the submissions made by the applicant, I assess the contribution to be an AI system that processes data from a data source through a choice of two different processing paths. In one of the data processing paths a decision-making logic involving an AI is applied to the data, the AI making choices as to whether to continue, what actions to perform, and whether to perform an action at all. In the second data path an AI does not have this input and a set of rules is applied to the data. The outcomes produced are said to reflect conscious and subconscious behaviour.

*Steps (3) and (4): Ask whether the contribution falls solely within the excluded subject matter; check it is actually technical in nature*

- 26 For convenience I will consider the third and fourth steps together.
- 27 The applicant emphasised at the hearing that how the AI perceives and classifies data, how it changes its own organisational structure, how it changes its own digital state and how that digital state effects the output and behaviour of the AI itself, are technical aspects of the invention. The applicant however accepted that claim 1 did not disclose much detail about the how the invention carried out these steps and accepted that amendment would be required to address this.
- 28 The invention is implemented as a program for a computer, although of course it would be installed on computer hardware in order to operate. But this doesn't mean that the invention is necessarily excluded from patentability. I have to decide whether the contribution I have identified above falls wholly in the excluded categories, or whether it makes a technical contribution. For computer-implemented inventions the *AT&T/Cvon* signposts set out above provide helpful pointers in determining whether such inventions make a technical contribution, and I will consider them in turn.

- 29 The first signpost asks whether the claimed technical effect has a technical effect on a process which is carried on outside the computer.
- 30 I have found that the contribution is an AI system with decision-making paths which results in an outcome which is said to mimic conscious and or subconscious behaviour. The claim does not specify any details as to the nature of the outcome, for example in relation to how it is output, nor does it define any actions which may occur as a consequence of that outcome. Nor is there any specified detail as to the nature of the data source which forms the input to the system.
- 31 The applicant expressed his view that the outcome of the AI is a better response with regards to an emotional state. This is achieved in the way in which the software processes the data and how the data is organised within a database. This is not however a technical effect on a process outside of the computer.
- 32 I can identify no technical effect on a process carried on outside a computer in the present case. The processing of the data takes place within the computer and does not result in an action on a process outside of the computer other than, perhaps, a perceived better experience for the user. There is no interaction with a process outside of the computer. The contribution relates to the way the AI system works and does not have any external technical effect.
- 33 Signposts ii to iv relate to the architecture, speed and operation of the computer and can be considered together. The applicant acknowledges that the invention does not improve the computer's architecture or its operational performance. The invention does not operate at the architectural level and does not make any changes to the underlying computer system. Nor does the contribution make the computer operate in a new way or enable the computer to operate more efficiently or effectively as a computer. Any new or improved performance is to the AI application, not to the computer itself.
- 34 The final signpost looks at the problem being solved by the invention and establishes whether the problem has been solved or circumvented. The invention appears to relate to improving the performance of an AI. It does not do this by providing any improvements to the technical infrastructure on which the AI may run, but rather by providing the two data processing paths in its software. The problem of improving the performance of an AI has not been solved in any technical sense.
- 35 Having considered all the signposts, none of them point to the contribution made by claim 1 making a technical contribution. Taking a step back and looking at the contribution as a whole, I find that it relates wholly to improvements in AI software and algorithms which lies wholly in the excluded fields, particularly that of a program for a computer as such. It does not make a technical contribution and is therefore excluded from patentability.

#### **Sufficiency and clarity– Sections 14(3) and 14(5)(c)**

- 36 The examiner also argues that the invention has not been disclosed clearly and completely enough to be performed by a person skilled in the art, and that the claims are unclear. Although I do not need to decide these points given that I have already found that the claimed invention is excluded from patentability, I have however noted

that the last four lines of claim 1 are obscure. At the hearing Mr Reaux-Savonte acknowledged that the claimed invention is broadly defined to encompass the breadth of its possible uses. He argued that a skilled person in the art of programming and AI would be able to perform the invention and expressed the view that, as each component is well known in the art, he did not feel the need to explain them in much detail. During the hearing he discussed an example of how the invention could be worked in a vision system, an example also included in the description. The various aspects of a vision system which includes focussed and non-focussed (peripheral) points are used to determine conscious and subconscious data, respectively. He referred to using the system to assign values to the data in a classification system and rank the data.

- 37 From reading the specification it is not clear how a skilled person would go about linking the classified data to conscious and subconscious thoughts and produce an outcome based on the data. Taking into account the ambiguity with regards to construing the claim and the lack of detail in the description of the AI and how it links an outcome to subconscious and conscious data, it is my view that an undue burden is placed on the skilled person in order to work the invention. I have read the application and do not consider that a person skilled in the art of software design and AI technologies is provided with sufficient disclosure so as to implement the elements of the claim which refer to the AI having conscious and subconscious activity. Moreover, the scope of the monopoly claimed is also not clear.
- 38 I therefore conclude that the invention has not been disclosed sufficiently clearly and completely enough in the specification to be performed by a person skilled in the art.
- 39 In this decision I have highlighted a number of ways in which the claim is unclear, for example in the ways the various features of the claim relate to each other, and in the obscurity of the final four lines of the claim. The claims are therefore not clear as is required by section 14(5)(c). The claim would require amendment in order to address these clarity problems.

### **Conclusion**

- 40 I find that the claimed invention is excluded under section 1(2) because it relates to a program for a computer as such. I also consider that the claimed invention is not disclosed clearly and completely to be performed by a person skilled in the art as is required by section 14(3) and that the claims are not clear as is required by section 14(5)(c). I therefore refuse the application.

### **Appeal**

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

**Benjamin Micklewright**

Deputy Director, acting for the Comptroller