

PATENTS ACT 1977

APPLICANT AON Risk Services, Inc. of Maryland

ISSUE Whether patent applications GB1915026.7
and GB1913243.0 comply with section 1(2)
of the Act

HEARING OFFICER H Jones

DECISION

Background

- 1 Patent application GB1915026.7 derives from WO 2018/194799 A1 and takes its priority date of 17 April 2017. It entered the GB national phase on 17 October 2019.
- 2 A first examination report was issued on 11 November 2021, with an objection that the claimed invention was excluded as being to a computer program, a method of doing business and the presentation of information.
- 3 There followed a couple of rounds of correspondence, with no agreement reached. The latest claims are those filed on 10 March 2022. I note that the national phase search update and consideration of all other aspects of the substantive examination are deferred. The issue to be determined, as set out in the examiner's letter of 9 June 2022, is whether the invention is excluded as a computer program, a business method and the presentation of information. If I determine that it is not, then it will be necessary to remit the application to the examiner to update the search and for completion of the examination.
- 4 Patent application GB1913243.0 derives from WO 2018/164926 A1 and takes its priority date of 6 March 2017. It entered the GB national phase on 13 September 2019.
- 5 A first examination report was issued on 29 June 2021, including an objection that the claimed inventions were excluded as being to computer programs, business methods and (some to) the presentation of information.
- 6 There followed several rounds of correspondence, with no agreement reached. The latest claims are essentially those filed on 27 August 2021, though I note that a subsequent correction has been made to a typographical error in claim 1 (see below). I note that the national phase search update and some aspects of the examination were deferred, but that these have now been completed. The only outstanding issues, as set out in the examiner's letter of 26 May 2022, are whether the invention is excluded as a computer program and the presentation of information as such.

- 7 The inventions of these two applications are closely related, and the issues to be decided for both are whether they relate to excluded subject matter. Both were considered together at a hearing on 19 July 2022, at which the applicant was represented by their attorney, Mr Ed Round of Marks and Clerk.
- 8 Mr Round noted in the skeleton arguments that, “While the exact elements of section 1(2) applied differ slightly across the two applications, it is clear that the same legal principles are at work, and it is possible to combine consideration of these two applications as they relate to the law as it stands.” I agree, and I will combine my consideration as much as possible.
- 9 I am grateful to Mr Round for the detailed skeleton arguments which he provided ahead of the hearing. These, along with the pre-hearing reports issued by the respective examiners, were very helpful in setting out the issues to be considered.
- 10 Auxiliary submissions were made in respect of both applications, comprising three sets of alternative claims for GB1915026.7 and one set of alternative claims for GB1913243.0 (in addition to the corrected claim set).
- 11 I note that the (extended) compliance period for GB1913243.0 was due to expire on 26 August 2022. I advised at the hearing that I did not expect to be able to issue my decision by then. In the event that I find the current claims excluded but the auxiliary claims allowable, then it would be necessary to file these as amended claims but that would not be possible after the expiry of the compliance period. I therefore suggested that the applicant should file a further Form 52 with appropriate fee, requesting a further two-month extension of the period, which I confirmed I would allow. The applicant filed this further Form 52 on 26 August 2022, which has the effect of extending the compliance period to 29 October 2022.

The law

- 12 For both applications, the examiner has objected that the invention is excluded from being patented as being at least one of a program for a computer, a method for doing business and the presentation of information as such. The relevant section of the Act are sections 1(1) and 1(2), the most relevant provisions of which (with my emphasis added) are:

1(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –

- (a) ...
- (b) ...
- (c) ...
- (d) *the grant of a patent for it is not excluded by subsections (2)...*

and references in this Act to a patentable invention shall be construed accordingly.

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) ...
- (b) ...
- (c) **a... method for... 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.

- 13 As acknowledged and emphasised in the skeleton arguments, whether or not an invention falls within these excluded categories is assessed on the basis of the four-step approach set out by the Court of Appeal in *Aerotel/Macrossan*¹. The steps are:
- (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.
- 14 The Court of Appeal in *Symbian*² made clear that the *Aerotel* test is not intended to provide a departure from the previous requirement set out in case law, namely that the invention must provide a "technical contribution" if it is not to fall within excluded matter. The *Aerotel* test has subsequently been endorsed by the Court of Appeal in its decisions in both *HTC*³ and *Lantana*⁴.
- 15 As also noted in the skeleton arguments, in determining whether or not a program for a computer makes a relevant technical contribution which takes it beyond being "a program for a computer... as such", it is helpful to consider the five "signposts" first set out in *AT&T/CVON*⁵, and later reformulated in *HTC*⁶. 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.

The inventions

- 16 The inventions of these two applications both relate to receiving a plurality of documents, performing some processing (or pre-processing) of the text of those documents, and thereby generating some analysis to present to a user. The detail of

¹ *Aerotel Ltd v Telco Holdings Ltd & Ors* Rev 1 [2007] RPC 7

² *Symbian Ltd's Application* [2009] RPC 1

³ *HTC Europe Co Ltd v Apple Inc* [2013] RPC 30

⁴ *Lantana Limited and The Comptroller General of Patents, Designs and Trade Marks* [2014] EWCA Civ 1463

⁵ *AT&T Knowledge Ventures/Cvon Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat) (*AT&T/CVON*)

⁶ *HTC v Apple* [2013] EWCA Civ 451

the pre-processing performed and the analysis provided differs between the two, but, at a high level, they may each be summarised in those terms.

GB1915026.7

- 17 GB1915026.7 has three independent claims (1, 6 and 12). There is no dispute that the three independent claims relate to the same invention and that the claims stand or fall together. I shall set out only claim 1 for the purpose of my decision:

1. A system comprising:

one or more processors; and

one or more memories storing instructions that, when executed by the one or more processors, cause the one or more processors to perform operations comprising:

receiving a plurality of documents;

pre-processing each document of the plurality of documents, wherein pre-processing each document includes removing punctuation and stop words in the document, stemming words in the document, removing duplicate words in the document and converting acronyms and abbreviations in the document to full words; calculating, for at least a claim included in a document of the plurality of documents, a word count score by comparing a word count associated with the claim with respective word counts associated with claims from at least one other document of the plurality of documents;

calculating a commonness score for the claim based at least in part on a frequency in which words within the claim are found in the claims from the at least one other document;

calculating an overall breadth score for the document based at least in part on the word count score and the commonness score;

calculating a first score for the document based at least in part on comparing the overall breadth score to at least one other overall breadth score for the at least one other document;

analyzing content of the document to identify a plurality of documents that are related to the document;

determining a number of documents from the plurality of documents that have respective priority dates that predate a priority date of the document;

calculating a second score for the document based at least in part on the number of documents;

analyzing the content of the document to identify, from a plurality of classifications, a classification corresponding to the document;

calculating a third score for the document based at least in part on comparing a value associated with the classification to a total value associated with the plurality of classifications;

calculating a comprehensive score for the document based at least in part on the first score, the second score, and the third score; and

generating a user interface that includes at least the comprehensive score for the document.

- 18 As can be seen from claim 1, the invention is particularly concerned with the processing of patent documents, with an aim of determining scores relating to breadth of monopoly claim, the number of similar documents that pre-date the patent and also the nature of subject-matter it relates to.

GB1913243.0

- 19 GB1913243.0 has one independent claim:

1. A computer-implemented method comprising:

receiving a plurality of documents containing text written in a type of natural language, each document associated with a unique document identification number;

representing text included in the plurality of documents using unique computer representations for each word in the text, the computer representations comprising ASCII, or an equivalent technology;

preprocessing the plurality of documents by:

generating one or more processed document portions from each of the plurality of documents, each one of the processed document portions associated with one of the unique document identification numbers;
and

parsing the text included in the plurality of documents into separate words based at least in part on each word's associated computer representation;

identifying stop words, duplicate words, and punctuation in the text based at least in part on their associated computer representations;
and

removing the stop words, duplicate words, and punctuation from the text;

detecting anomalies in each of the processed document portions and, if anomalies are detected, generating corresponding indicia;

generating a word count for each of the processed document portions by counting the number of computer representations of separate words in each one of the processed document portions;

identifying a referential word count;

calculating a word count ratio for each of the processed document portions by dividing the referential word count by the word count for each individual one of

the processed document portions;

determining, based at least in part on the computer representations a word frequency for each word included in any of the document portions, the word frequency being a total number of instances that a word is found in the document portions prior to removal of duplicate words;

generating a commonness score for each of the processed document portions by taking the square root of the sum of the squares of the inverse of the word frequency for each one of the separate words in the individual ones of the processed document portions;

identifying a highest commonness score of any of the processed document portions; calculating a commonness score ratio for each of the processed document portion by dividing the highest commonness score by the commonness score for the individual ones of the processed document portions;

calculating an overall score for each of the processed document portion based on a normalization of the square root of the sum of the square of the word count ratio and the square of the commonness score ratio for the individual ones of the processed document portions; and

generating the user interface including at least one overall score for one of the processed document portions in proximity to the unique document identification number associated with the one of the processed document portions and an indicia indicating a result from the detecting anomalies for the one of the processed document portions.

- 20 There was a typographical error in the claim filed on 27 August 2021, with the word “processing” included after “preprocessing” in the fourth clause (“preprocessing processing the plurality of documents by:”). A corrected claim 1 was filed, and I have allowed this correction, and have considered the claim as corrected, i.e. as above.
- 21 The invention here is again concerned with analysing text in documents such as patent applications, in this case being able to determine the breadth of document portions compared to other portions, for example in determining whether one monopoly claim is broader than another.

Assessment

(1) Properly construe the claim

- 22 There is no difficulty in construing the claims of either application.

(2) Identify the actual contribution

GB1915026.7

- 23 The pre-hearing report of 9 June 2022 refers back to the previous examination report of 16 March 2022, in which the examiner states when assessing the contribution:

The contribution lies in the method of processing digital documents which is carried out using standard computing hardware and so the contribution does not lie in the hardware per se. As such this is still considered to be an administrative matter concerning the collection and analysis of document data. The advantage of the invention to cut down on time spent processing documents is not considered to provide any technical effect.

24 As Mr Round noted, since the search has not been completed for this application, it is the “alleged contribution” which must be identified and assessed. The court in *Aerotel* acknowledged that, for a patent application (as opposed to a granted patent), it may only be possible to identify the alleged, and not the actual, contribution.

25 Mr Round identified as technical steps contributing to the invention:

receiving a plurality of documents;

pre-processing each document of the plurality of documents, wherein pre-processing each document includes removing punctuation and stop words in the document, stemming words in the document, removing duplicate words in the document and converting acronyms and abbreviations in the document to full words.

26 On that basis, he identified the contribution as:

An improvement in the field of computational technology tools, which may be applied to document analysis.

27 In paragraph 43 of *Aerotel* it is made clear that identifying the contribution is probably best summed up as determining what the inventor has really added to human knowledge, and this involves looking at the substance and not the form of the claim (as construed in step one).

28 So, the contribution is definite in its scope: it is what the invention actually does, which was not done before. So, while the respective assessments provided by Mr Round and the examiner are helpful, I will leave aside reference to what is “standard”, or to an “improvement”, or to what the contribution is not, or to what the invention may be applied.

29 I note particularly that the invention does relate specifically to documents (to documents generally in claims 1 and 6, and to patent documents specifically in claim 12): to receiving them, pre-processing them and analysing their content, and generating an output relating to them. What has been added to human knowledge relates to the way in which documents may be dealt with and the result thus achieved. I will not speculate on whether the same process might have been applied to anything else: the invention, as defined in the claims, is tied to pre-processing documents.

30 I take the contribution to be:

Pre-processing a plurality of documents, comprising textual analysis and comparison of the respective text of each, and providing this to a user interface.

GB1913243.0

- 31 The pre-hearing report of 26 May 2022 repeats the examiner's assessment of the contribution, as stated in earlier reports:

A method of automated analysis of digital natural-language text documents. In a pre-processing stage, portions are extracted from the documents based on their subject-matter content, and semantically important words and non-anomalous content are distilled from the documents. In a subsequent stage, linguistic breadth of each portion is quantified based on measured counts and frequencies of the semantically important words. The breadths of, and any anomalies found in, the portions are displayed by a user interface.

- 32 Again, Mr Round identified technical steps which, he argued, contribute to the nature of the invention:

receiving a plurality of documents containing text written in a type of natural language, each document associated with a unique document identification number;

representing text included in the plurality of documents using unique computer representations for each word in the text, the computer representations comprising ASCII, or an equivalent technology;

preprocessing the plurality of documents by:

generating one or more processed document portions from each of the plurality of documents, each one of the processed document portions associated with one of the unique document identification numbers; and

parsing the text included in the plurality of documents into separate words based at least in part on each word's associated computer representation;

identifying stop words, duplicate words, and punctuation in the text based at least in part on their associated computer representations; and

removing the stop words, duplicate words, and punctuation from the text;

detecting anomalies in each of the processed document portions and, if anomalies are detected, generating corresponding indicia;

generating a word count for each of the processed document portions by counting the number of computer representations of separate words in each one of the processed document portions;

identifying a referential word count;

- 33 On this basis, Mr Round identified the actual contribution as:

(how to) pre-process a large number of documents, perhaps in different languages, so that later analysis can be eased.

- 34 Following the same reasoning as above, in respect of GB1915026.7, I will identify the actual contribution for the invention of this application as being the same as for that application:

Pre-processing a plurality of documents, comprising textual analysis and comparison of the respective text of each, and providing this to a user interface.

(3) Ask whether it falls solely within the excluded subject matter and (4) Check whether the actual or alleged contribution is actually technical in nature

35 I will consider steps (3) and (4) together, and, having determined that the contribution for each is the same, in relation to both applications together.

36 As noted, the invention in each case is tied to a textual analysis of documents. There is some processing and calculating, but the inventions do not relate to the way in which this processing or calculating is performed so much as to what is being processed and calculated. That is essentially an administrative process. As such, each invention comes within the scope of a method for doing business as such.

37 For both inventions there is a step of providing an output to a user interface. Clearly this will involve the presentation of information. However, as assessed above, the contribution does not lie in presenting the information; it lies in the earlier step of analysing and thereby determining what this information is. Therefore, I conclude that neither invention is the presentation of information as such.

38 The inventions are clearly computer implemented. Whether they are no more than programs for a computer as such is determined with reference to the *AT&T* signposts:

(i) Whether the claimed technical effect has a technical effect on a process which is carried on outside the computer

39 The pre-processing steps to which the inventions relate are performed within a processor. There is a concluding step of presenting information regarding the analysis of the documents at a user interface, but there is no technical process performed outside the computer, or any technical effect on any process outside of 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

40 The inventions do not require any change to the architecture of the computer. The inventions defined in the claims relate to pre-processing documents and the textual data contained within them. There is no technical effect produced within the computer which is not related to the type of data being processed, or for anything other than a document analysis application.

(iii) Whether the claimed technical effect results in the computer being made to operate in a new way

41 The computer processor will operate in accordance with the instructions with which it has been programmed, to perform the pre-processing of the documents provided to it. Neither the specific steps of the pre-processing nor the nature of the documents will cause the computer to operate any differently in itself.

(iv) Whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer

- 42 In respect of both inventions, Mr Round suggested that at least the fourth signpost supports patentability. He argued that the system pre-processes a collection of documents to remove unnecessary data, and so enables more efficient and effective processing of the data by the computer, thereby reducing memory and computational power required by the computer.
- 43 He argued that this makes the computer better, inasmuch as it will operate more efficiently, and make more effective use of constrained resources.
- 44 However, while the pre-processing itself might be efficient and effective, the computer on which the pre-processing is performed is not itself made better. It will run this, or any subsequent process as efficiently and effectively as its processor speed and memory capacity allows.

(v) Whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented

- 45 Mr Round also argued that, with regard to this fifth signpost, there is no circumvention. He said that the problem of processing data in such a way as to reduce computer requirements and thereby increase efficiency for document analysis is squarely solved by the inventions.
- 46 This signpost addresses both the nature of the problem to be overcome and the character of the solution. The solution to a technical problem may itself be considered technical since the solution will derive technical character from the technical nature of the problem.
- 47 Here, the problem, at its root, is textual analysis of a plurality of documents, and means of facilitating and simplifying that process. The problem addressed by the inventions is not inherently technical in nature.

Auxiliary submissions

- 48 As noted above, auxiliary submissions were made in respect of both applications, comprising three sets of alternative claims for GB1915026.7, and one set of alternative claims for GB1913243.0 (in addition to the corrected claim set).
- 49 The first auxiliary submission for GB1915026.7 adds a step in the independent claims between “receiving a plurality of documents” and “pre-processing each document” of:

filtering the plurality of documents to limit the plurality of documents to a corpus of documents that share specified characteristics;

or, for claim 12:

filtering the plurality of patents to limit the plurality of patents to a corpus of patents that share specified characteristics;

- 50 The second auxiliary submission includes the same, and also inserts into the beginning of the “pre-processing” clause in each independent claim, between “converting acronyms... to full words” and “calculating for at least a claim..”:

identifying portions of documents of the plurality of documents that likely include an anomaly;
excluding the portions of the documents from further analysis;

(The auxiliary amendment for claim 12 is the same as for claims 1 and 6. I assume that “patents” rather than “documents” was intended. This does not affect the assessment.)

- 51 The third auxiliary submission for GB1915026.7 and the only auxiliary submission for GB1913243.0 both consist of deleting detail of the pre-processing steps from the independent claims, and deleting all the dependent claims; no new features are added.
- 52 I will deal first, and briefly, with these last proposed amendments. Mr Round advised that the intention in deleting details of the pre-processing steps of the inventions was to avoid unwelcome focus on those aspects which the examiners had argued were not technical in nature. But if there is no saving technical contribution with those steps included, there cannot be with them removed.
- 53 Mr Round explained that the first two proposed amendments to GB1915026.7 narrow the scope of the claims and emphasise the technical character of the invention. However, the steps of filtering the received documents as a body, or of excising anomalous portions of individual documents, are further steps of the same character as that currently defined. The invention defined would still relate to textual analysis of a plurality of documents. The technical contribution would remain as above.

Conclusion

- 54 I have found that the inventions of these two applications, as defined in the current claims or as amended in accordance with the auxiliary submissions, relate to no more than methods of doing business as such, and, in their implementation, to no more than programs for a computer as such. The inventions are excluded from patentability under section 1(2)(c) and I therefore refuse both applications in accordance with section 18(3).

Appeal

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

Huw Jones

Deputy Director, acting for the Comptroller