



PATENTS ACT 1977

APPLICANT	Innoplexus AG
ISSUE	Whether patent application GB 1804921.3 is excluded under section 1(2)
HEARING OFFICER	Peter Mason

DECISION

Background

- 1 Patent application GB 1804921.3 ("the application") entitled "System and method for crawling a wide area computer network for retrieving contextual information" was filed on 27 March 2018 in the name of Innoplexus AG. It was published as GB 2572544 A on 9 October 2019.
- 2 On 24 September 2018, the examiner issued a Combined Search Report under section 17(5)(b) and an Abbreviated Examination Report under section 18(3), stating that search would serve no useful purpose because the application seeks to claim subject matter excluded under section 1(2). In the Abbreviated Examination Report the examiner set out an objection that the invention relates to a program for a computer as such and is excluded from patent protection under s.1(2).
- 3 The applicant responded with their attorney's letter of 27 March 2020. The applicant respectfully disagreed with the examiner's objection and argued that the invention was not excluded under s.1(2). The examiner maintained the objection in a second examination report dated 8 July 2021.
- 4 The applicant responded with their attorney's letter dated 30 July 2021, filing no further arguments but requested a decision based on the papers on file. The examiner issued a pre-hearing report dated 7 December 2021.
- 5 There is only one matter before me, that of the invention being excluded under section 1(2) all other matters have been deferred. I note that no search has been carried out at this time.
- 6 In reaching my decision I can confirm that I have considered all papers currently on file.

The Invention

- 7 The application relates to computer networks; and more specifically to a system that crawls a wide area computer network retrieving 'contextual information' and organising the 'contextual information' into one or more databases. The term 'wide area computer network' relates to i) a distributed collection of interlinked, user viewable hypertext documents (web documents or pages) stored in a computing device and accessible via the internet and ii) client and server software components which provide user access to said documents above, stored in computing devices using standard protocols.
- 8 The operation of the invention is best shown in Figure 1 depicted below:

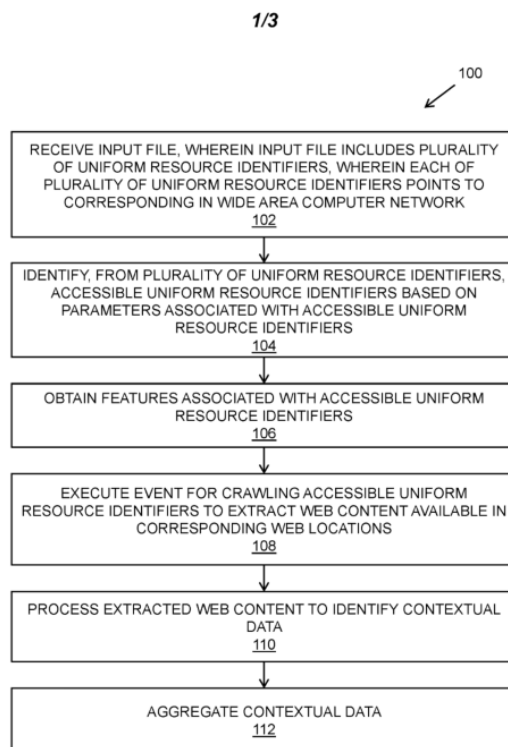


FIG. 1

- 9 There are three independent claims, claim 1 a system, claim 16 a method and claim 30 a computer readable medium. The claims are recited below:

Claim 1. A system that crawls a wide area computer network for retrieving contextual information, wherein the system includes a computer system, characterized in that the system comprises:

- a data processing arrangement comprising a communication interface for accessing the wide area computer network and a web crawl module, wherein the web crawl module is operable to:

- receive an input file via a user interface provided by the data processing arrangement, wherein the input file includes a plurality of Uniform Resource Identifiers, wherein each of the plurality of Uniform Resource Identifiers points to a corresponding web location in the wide area computer network;
- identify, from the plurality of Uniform Resource Identifiers, accessible Uniform Resource Identifiers based on one or more parameters associated with each of the plurality of Uniform Resource Identifiers;
- obtain one or more features associated with the accessible Uniform Resource Identifiers; and
- execute an event for crawling the accessible Uniform Resource Identifiers to extract web content available in the corresponding web locations, wherein executing the event comprises:
 - creating at least one resource cluster for executing the event, wherein the at least one resource cluster comprises one or more resource acquired based on the one or more features associated with the accessible Uniform Resource Identifiers;
 - acquiring at least one electronic record file to be executed by the at least one resource cluster, wherein acquiring the at least one electronic record file is based on one or more features associated with the accessible Uniform Resource Identifiers; and
- a database arrangement communicably coupled to the data processing arrangement via the communication interface, wherein the database arrangement is operable to aggregate the contextual data into one or more databases arranged therein.

Claim 16. A method of crawling a wide area computer network for retrieving contextual information, wherein the method includes a computer system, characterized in that the method comprises:

- a data processing arrangement comprising a communication interface for accessing the wide area computer network and a web crawl module, wherein the web crawl module is operable to:
 - receive an input file, wherein the input file includes a plurality of Uniform Resource Identifiers, wherein each of the plurality of Uniform Resource Identifiers points to a corresponding web location in the wide area computer network;
 - identifying, from the plurality of Uniform Resource Identifiers, accessible Uniform Resource Identifiers based on one or more parameters associated with each of the plurality of Uniform Resource Identifiers;

- obtaining one or more features associated with the accessible Uniform Resource Identifiers; and
- executing an event for crawling the accessible Uniform Resource Identifiers to extract web content available in the corresponding web locations, wherein executing the event comprises:
 - creating at least one resource cluster for executing the event, wherein the at least one resource cluster comprises one or more resource acquired based on the one or more features associated with the accessible Uniform Resource Identifiers;
 - acquiring at least one electronic record file to be executed by the at least one resource cluster, wherein acquiring the at least one electronic record file is based on one or more features associated with the accessible Uniform Resource Identifiers; and
 - crawling the accessible Uniform Resource Identifiers using the at least one resource cluster;
- processing the extracted web content to identify contextual data, wherein the contextual data is organized into one or more data structure; and
- aggregating the contextual data.

Claim 30. A computer readable medium containing program instructions for execution in a computer system, which when executed by a computer, causes the computer to perform method steps for identifying at least one relevant topic related to a subject matter, the method comprising the steps of:

- receiving an input file, wherein the input file includes a plurality of Uniform Resource Identifiers, wherein each of the plurality of Uniform Resource Identifiers points to a corresponding web location in the wide area computer network;
- identifying, from the plurality of Uniform Resource Identifiers, accessible Uniform Resource Identifiers based on one or more parameters associated with each of the plurality of Uniform Resource Identifiers;
- obtaining one or more features associated with the accessible Uniform Resource Identifiers; and
- executing an event for crawling the accessible Uniform Resource Identifiers to extract web content available in the corresponding web locations, wherein executing the event comprises:
 - creating at least one resource cluster for executing the event, wherein the at least one resource cluster comprises one or more resource

acquired based on the one or more features associated with the accessible Uniform Resource Identifiers;

- acquiring at least one electronic record file to be executed by the at least one resource cluster, wherein acquiring the at least one electronic record file is based on one or more features associated with the accessible Uniform Resource Identifiers; and

- crawling the accessible Uniform Resource Identifiers using the at least one resource cluster;

- processing the extracted web content to identify contextual data, wherein the contextual data is organised into one or more data structure; and

- aggregating the contextual data.

- 10 The independent claims are consistent in scope and as such will stand or fall together.

The Law

- 11 The examiner has raised an objection under section 1(2) of the Patents Act 1977 that the invention is not patentable because it relates inter-alia to one or more categories of excluded matter. The relevant provisions of this section of the Act are shown in bold below:

1(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of –

(a) a discovery, scientific theory or mathematical method;

(b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;

*(c) a scheme, rule or method for performing a mental act, playing a game or doing business, **or a program for a computer.****

(d) the presentation of information;

but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.

*[my emphasis]

- 12 The assessment of patentability under section 1(2) is governed by the judgment of the Court of Appeal in *Aerotel*¹, as further interpreted by the Court of Appeal in *Symbian*².
- 13 In *Aerotel*, the court reviewed the case law on the interpretation of section 1(2) and approved a four-step test for the assessment of what is often called "excluded matter", as follows:

Step one: properly construe the claim

Step two: identify the actual contribution (although at the application stage this might have to be the alleged contribution)

Step three: ask whether it falls solely within the excluded matter

Step four: check whether the actual or alleged contribution is actually technical in nature.

- 14 Subsequently, the Court of Appeal in *Symbian* 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 Lewison J (as he then was) in *AT&T/CVON*⁵ set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. In *HTC* the signposts were reformulated slightly in light of the decision in *Gemstar*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.

¹ *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371, [2007] RPC 7

² *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1

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

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

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

⁶ *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

- 16 Paragraph 41 of AT&T/CVON emphasises that consideration of the signposts should properly reflect both stages 3 and 4 of the Aerotel approach:

“If there is a technical effect in this sense, it is still necessary to consider whether the claimed technical effect lies solely in excluded matter.”

- 17 The signposts are merely guidelines; although they provide a useful aid in assessing the technical character of a claimed invention, they were not intended to provide a definitive test (as Lewison LJ’s obiter remarks in paragraph 149 of HTC make clear). Several judgments have emphasised this point - John Baldwin QC (sitting as a Deputy Judge) in Really Virtual⁷ noted that the signposts, although useful, are no more than signposts and that there will be some cases in which they are more helpful than in others. Kitchin LJ made similar remarks in paragraph 51 of HTC that their usefulness does not mean they will be determinative in every case.

European Patent Office (EPO) decisions

- 18 The attorney’s letter dated 27 March 2020 refers to two decisions of the EPO Boards of Appeal, T 0721/09 and T 1351/04. The applicant argues these decisions are of persuasive value and that the examiner’s assessment that the present invention is excluded subject matter is inconsistent with these two decisions.
- 19 I accept that, taking into account s.130(7), the provisions of s.1(2) are intended to have, as nearly as practicable, the same effect as the corresponding provisions of the EPC, in this case Art. 52 EPC. I also accept that although decisions of the EPO Boards of Appeal regarding patentability are not binding on me, they may have persuasive value.
- 20 I am however bound to follow the Aerotel approach and that each case must be determined on its own facts bearing in mind the guidance handed down by the UK Courts⁸.

Arguments and analysis

- 21 The examiner maintains that the claims define an invention for a computer program for a computer. Their position is set out in the pre-hearing report dated 7 December 2021. The detailed response from the applicant is contained in their response dated 27 March 2021 to the original abbreviated examination report. In arriving at my decision I will follow the approach outlined in Aerotel above.

Step 1: Properly construe the claims

- 22 There appears to be no dispute between the applicant and the examiner as to how the claims should be construed. I do not think the claims presents any problems in understanding and are clear in meaning. The applicant does argue in their response dated 27 March 2021 that the examiner has ‘overlooked certain aspects’ but this is in relation to the contribution and will be considered below.

⁷ Really Virtual Co Ltd v UK Intellectual Property Office [2012] EWHC 1086 (Ch)

⁸ See e.g. HTC v Apple [2013] EWCA Civ 451 at § 45

Step 2: Identify the actual or alleged contribution

- 23 Jacob LJ outlined the considerations to be applied when identifying the contribution made by the claims in paragraph 43 of Aerotel – the critical factors for the examiner to consider are emphasised:

“The second step – identify the contribution - is said to be more problematical. How do you assess the contribution? Mr Birss submits the test is workable – it is an exercise in judgment probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise. The formulation involves looking at substance not form – which is surely what the legislator intended.”

- 24 The examiner agrees with the applicant that the contribution is that set out in their response dated 27 March 2020. The contribution being:

“A method of crawling the web for more relevant data elements, processing said content to identify contextual data then organising the contextual data into one or more data structures.”

- 25 I have no reason to depart from this definition of the contribution.
- 26 The applicant argues that the alleged advantage of the invention is to improve the efficiency and effectiveness of crawling by providing a smaller database(s) containing only relevant information and as such the time spent crawling is reduced.
- 27 The examiner considers the alleged advantages of the invention to relate to overcoming problems with previous systems and that conventional web crawling arrangements are only suited to access a fixed number of Uniform Reference Indicators (URIs) and that these arrangements can be time consuming in that the conventional crawlers do not consider the relevancy of the retrieved data. The problem with conventional crawling arrangements is that they are ‘non-optimised’, time consuming and cumbersome to operate.

Step 3: Does the contribution fall solely within excluded subject matter

- 28 In this case, it is clear that the arrangement of hardware used to implement the invention is immaterial to the working of the invention. The hardware is all conventional hardware. Given this point, the contribution must therefore be viewed as being embodied purely in a computer program. Whilst the invention undoubtedly uses a computer program for its implementation, the mere fact that the invention is effected in software does not mean that it should necessarily be excluded as a program for a computer as such. What matters is whether or not the program provides a technical contribution.
- 29 The examiner and the applicant have made reference to the AT&T/CVON signposts in their respective arguments. In their assessment of the five signposts the examiner determined that the contribution failed to satisfy signposts (i), (iv) and (v). To the contrary, the applicant has argued that these signposts are in fact satisfied by the contribution.

30 I note that the applicant has not relied on signposts (ii) or (iii) during prosecution and has made no argument in their respect. I agree with the examiner that signposts (ii) and (iii) do not assist the applicant, and will not consider them further below.

Signpost 1: whether the claimed technical effect has a technical effect on a process which is carried on outside the computer

31 The applicant's attorney argues:

*"The technical effect provided by the Applicant's claimed invention is that more relevant information from the web is provided. The web crawling module of the Applicant's invention is operable to process the extracted web content to identify contextual data, wherein the contextual data is organised into one or more data structure and the database arrangement of the Applicant's invention is operable to aggregate the contextual data into one or more database arranged therein. Thus aggregating the contextual data into one or more database results into **smaller databases that with relevant data**. Thus, the Applicant's claimed invention provides an optimized, faster and efficient method on web crawling and extracting relevant information from the web. The above-mentioned technical effect is in relation to the databases **which are obviously external to the computer system**, thus the first signpost is met."*

32 The examiner disagrees and argues that the databases are "wholly within a computer system" and that there is no effect on a process outside of the computer.

33 I agree with the examiner, the term 'outside the computer' in the context of this signpost can be read as outside of a computer system or network of computers. In this case everything is accomplished within the computer system of the claims and that the databases are similarly wholly within the system.

34 As Birss J points out in paragraph 30 in *Lantana v Comptroller-General of Patents*⁹

"The fact that two computers and the internet are required is not what makes a software invention patentable."

35 It is my view that this signpost is not satisfied as the claimed technical effect has no technical effect on a process which is carried on outside the computer.

Signpost 4: whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer.

36 The applicant attorney argues:

"The above-mentioned technical effect is in relation to databases of the computer system. As a database arrangement is not necessarily application specific but is a large collection of data that may be used by many different applications. Adapting the executional framework provided by a different database structure, namely aggregating relevant data elements from the pool

⁹ *Lantana v Comptroller-General of Patents* [2013] EWHC 2673 (Pat)

of data elements as disclosed in the Applicant's claim 1 affects the computer as a whole, not only a single program."

37 The examiner disagrees and argues that the application is concerned with gathering and storing "specific web based data", that there is no change to the way in which a usual database works. The examiner goes on to state:

"I do not consider that [the] computer as a whole is not running more efficiently or effectively as a computer as such, it is merely a normal computer running a new web crawling application".

38 I agree with the examiner. The application may be concerned with a new (better) web crawler but it does not result in a better computer. The underlying operation of the computer remains unchanged and as such signpost 4 is not satisfied.

Signpost 5: whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented

39 The Applicant's attorney makes two arguments for this signpost which I will consider in turn.

40 Firstly the applicant argues:

"[The] claimed invention solves problem associated with the conventional techniques for crawling the World Wide Web. Such conventional techniques did not consider the relevancy or the retrieved data which results in larger sized databases (which may contain a huge amount or irrelevant data. ... the Applicant's invention solves problems related to databases of the conventional techniques of crawling web pages, 'databases' being technical in nature. Thus the problem being solved is technical in nature."

41 The examiner disagrees and states that "Even if I were to consider that a problem with the underlying database had been overcome such a problem would not be considered a technical one."

42 I agree with the examiner the problem here is not a technical one and as such there is no technical effect.

43 Secondly the Applicant argues:

"Moreover, at an instance of unexpected increase in number of URIs to be crawled, the conventional crawling arrangements get overloaded. Consequently, such overloading may lead to hardware failure, high maintenance and thereby increasing the operation cost. The Applicant's invention provides a solution to the problems associated with hardware of the conventional techniques."

44 The examiner disagrees that the application is concerned with the underlying hardware as such. Rather the examiner states that the application relates to gathering more relevant information such that the databases comprise less, but more relevant data. The databases remain unchanged only the volume of data is changed by implementation of more efficient crawling software.

- 45 I agree with the examiner, the invention is not concerned with a problem associated with the hardware, but with the nature and configuration of the data stored. This may result in smaller databases but does not impact on the underlying hardware or network arrangement and as such does not overcome any inherent problems with said hardware or network.
- 46 I do not consider the contribution satisfies this signpost as the problem being solved is not technical in nature.
- 47 Taking the above into account, I therefore conclude that the contribution falls within the excluded category of a computer program as such.

Step four: check whether the actual or alleged contribution is actually technical in nature.

- 48 Although I have found that the contribution falls within the computer program exclusion, for completeness I do not consider the invention to be technical in nature as required by this step.

Consideration of the EPO decisions

- 49 For completeness of consideration of the arguments presented by the applicant, I have considered T 0721/09 and T1351/04 carefully and I find nothing in them that persuades me that the present claims makes a contribution that is technical in nature, as required by the Aerotel approach applied above.

Conclusion

- 50 I find that the claimed invention is excluded under section 1(2)(c) as a computer program for a computer as such. I therefore refuse this application under section 18(3).

Appeal

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

Peter Mason

Deputy Director, acting for the Comptroller