



## PATENTS ACT 1977

APPLICANT Thoughtwire Holdings Corp.

ISSUE Whether patent application GB1116597.4 complies with section 1(2)(c) of the Act

HEARING OFFICER A Bartlett

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### DECISION

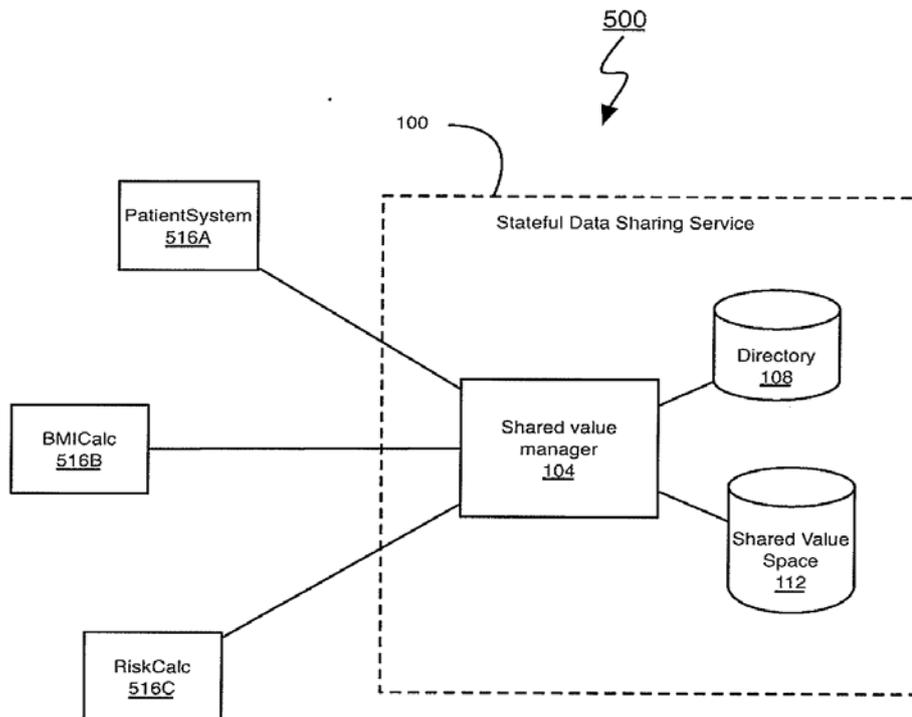
#### Introduction

- 1 This decision addresses the issue of whether the invention claimed in application GB 1116597.4 relates to subject matter that is excluded under section 1(2)(c) as a program for a computer as such.
- 2 The application is entitled 'Method And System For Sharing Data Between Software Systems' and derives from PCT application PCT/CA2011/050020 filed in the name of Thoughtwire Holdings Corp. on 17 January 2011 claiming a priority date of 22 February 2010. The international application was published as WO2011/100836 on 25 August 2011. After entering the national phase in the UK it was reprinted as GB2490372.
- 3 The responses filed to the two examination reports issued under section 18(3) on behalf of the applicants (by their attorneys Bridle Intellectual Property Ltd) have not persuaded the examiner that the invention relates to patentable subject matter. Consequently the matter came before me at a hearing on 29 March 2017 where the applicants were represented by their patent attorney Mr Andrew Bridle.
- 4 I am grateful to Mr Bridle for the skeleton argument he submitted prior to the hearing and for his submissions at the hearing itself. I confirm that I have taken all those submissions and all the other correspondence on file into account in reaching my decision.

#### The application

- 5 The application concerns a system for sharing data between multiple, potentially disparate software systems. It explains that conventional data sharing systems require a point to point (API) mapping to provide various systems with the data they require to fulfil their function. This can be problematic when for example a new system is added to the system to enhance its functionality or to increase its scale.

By way of contrast, the system of the invention provides an intermediate data sharing function which holds data provided by the various systems and information on which systems require what data to perform their function. It is best explained with reference to the specific embodiment disclosed which is an integrated healthcare system (although I emphasise that the claims are not limited to that field). This embodiment is shown schematically in figure 6 of the specification:



**Figure 6**

- 6 According to the embodiment information about a patient such as their date of birth, weight, height a/o gender are provided via the patient system 516A for example in a GP's clinic. This data is stored centrally along with semantic descriptions of the data via a graph data structure. The GP may be interested in providing the patient with an indication of their BMI and of a "health risk" eg for insurance purposes. Both of these calculations in the embodiment are provided anonymously via external software systems. The BMI calculator 516B requests weight and height information for a patient from the central store to calculate BMI for the patient which is then itself stored centrally in the module 100. The risk calculator 516C requests the relevant BMI for the patient from the central data store along with age and gender data and calculates the "risk" for the individual which is again stored centrally. The patient system can then access this data when a request is made. The system provides "semantic resolution" capability to increase potential compatibility of the various systems by helping to resolve inconsistent use of terminology. For example different systems may use "age" or "years old" as the descriptor for age related data but when one system requests "age" data for an individual, the system resolves this to provide

the relevant data even if it has been labelled with the “years old” descriptor. Finally, when a data item is updated, the new value for that data item is provided to all systems that have requested that item so that they can perform their function using the updated item.

7 The latest claims on file were received on 20 July 2016. There are 10 claims in total including two independent claims (1 & 6) which read as follows:

*1. A method for sharing data between software systems, comprising:*

*maintaining a graph data structure in storage of a computing device, said graph data structure having data items and relationships therebetween that are semantically described;*

*storing a request received from a first software system for requested data that is semantically described, and an address declared by said first software system;*

*detecting whenever at least one value of said data items in said graph data structure is updated; and*

*If an update to at least one value of said data items in said graph data structure is detected:*

*semantically resolving said requested data to a set of said data items in said graph data structure; and*

*passing changes to values of said set of said data items to which said requested data semantically resolves to said first software system at said address.*

*6. A computer system for sharing data between software systems, comprising:*

*a data sharing service executing on said computer system, said data sharing service storing a graph data structure in which data items and relationships therebetween are semantically described, said data sharing service storing a request received from a first software system for requested data that is semantically described, and an address for said first software system, detecting whenever at least one value of said data items in said graph data structure is updated, and, if an update to at least one value of said data items in said graph data structure is detected, said data sharing service semantically resolving said requested data to a set of said data items in said graph data structure and passing changes to values of said set of said data items to which said requested data semantically resolves to said first software system at said address.*

## **The Law**

8 Section 1(2) of the Patents Act 1977 sets out various things that are not considered to be inventions for the purposes of the Act. The most relevant provisions of this section of the Act are shown in bold 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 –*

*(a) ... ;*

(b) ... ;

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

(d) ... ;

*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.*

9 These provisions are designated in Section 130(7) as being so framed as to have, as nearly as practicable, the same effect as Article 52 of the European Patent Convention, to which they correspond. I must therefore also have regard to the decisions of the European Patent Office Boards of Appeal that have been issued under this Article in deciding whether the present invention is patentable although I am not bound to follow them. I am bound to follow the decisions of the UK Courts however.

10 There is no shortage of case law in relation to the provisions of section 1(2). The most significant recent judgments of the Court of Appeal on the matter are *Aerotel/Macrossan*<sup>1</sup> and *Symbian*<sup>2</sup>. 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 “excluded matter”. 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.*

11 The Court said in *Symbian* (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel* was not a new departure in domestic law and that it remained bound by its previous decisions, particularly *Merrill Lynch*<sup>3</sup>. Thus in its judgment in *Symbian* the court of Appeal confirmed that the *Aerotel* test is intended to be equivalent to the prior case law test of “technical contribution”. Thus in deciding whether the invention is excluded as a program for a computer as such I must ask whether it makes a technical contribution (though it does not matter whether I do that at step 3 or step 4).

12 The Courts have also provided additional guidance as to what constitutes a “technical contribution” in the form of the ‘AT&T signposts’. The signposts are a helpful summary of case law both from the EPO and the UK Courts. They were set out originally in paragraph 40 of the judgment in *AT&T/CVON*<sup>4</sup> and were

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<sup>1</sup> *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007]

<sup>2</sup> *Symbian Ltd v Comptroller-General of Patents* [2009] RPC 1

<sup>3</sup> *Merrill Lynch's Application* [1989] RPC 561

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

subsequently updated by the Court of Appeal in paragraphs 50-51 of the judgment in *HTC v Apple*<sup>5</sup>; The current form of the signposts read 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.*

- 13 In assessing whether the current invention is excluded or not, I will follow the *Aerotel* approach as interpreted in *Symbian* and use the signposts to assist in identifying any technical contribution.

## **Analysis**

### **1) Properly construe the claims**

- 14 Step 1 of the *Aerotel* test requires me to properly construe the claims. This does not cause any particular difficulties once the technical terminology is understood. As explained above, “semantically resolving” is construed to mean matching the requested data descriptors to those of stored data values in the graph data structure not only when the data descriptors are identical but also when the meanings are the same.

### **(2) Identify the actual contribution**

- 15 At the hearing I agreed to focus primarily on claim 6 since all the claims provide the same contribution and would stand or fall together.

- 16 When identifying the actual contribution, I have regard for the guidance given in paragraph 43 of the *Aerotel* judgment where the court accepted the proposition that identifying the contribution 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’.*

- 17 In his examination report of 5 January 2017, the examiner identified the contribution as being a method and system for sharing data between software systems by semantically resolving requested data to data items in a graph data structure

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<sup>5</sup> *HTC v Apple* [2013] EWCA Civ 451

providing the advantage of more efficient and effective integration between software systems.

- 18 I asked Mr Bridle at the hearing for his definition of the contribution, which he said was a data sharing service acting as an intermediary between systems requesting data and systems potentially updating data, where the service holds mirrors of the data that the services wish to share so that systems do not directly access each other's own data stores.
- 19 Both of these formulations to my mind are a little too high level in that they omit important elements of how the invention actually works. Whilst it includes the stated advantages provided by the invention, the examiner's formulation omits the "updating" aspect of the claim. On the other hand, Mr Bridle's formulation omits the "semantic resolution" aspect that the claims (as amended) now require. At the hearing Mr Bridle accepted my proposal that the contribution should include how the invention works and include the "semantic" and "updating" features.
- 20 In my view the contribution provided by the invention of claim 6 is

A data sharing service acting as an intermediary between software systems, the service storing a copy of semantically described data to be shared in a graph data structure and storing semantic data requests received from a software system and the address of that software system whereby when the service detects any updates to its data it will semantically resolve the requested data from its graph data structure and provide the updated data to the requesting software system.

- 21 In its judgment *Aerotel* the Court of Appeal reiterated the longstanding principle that when assessing the patentability of an invention, it is the substance of the invention that is important, not the form of claim employed. Thus whilst claim 1 is directed to '*A method for sharing data...*' and claim 6 is directed to '*A computer system ... comprising a data sharing service...*', I find they make the same contribution.

### **(3) Ask whether it falls solely within the excluded subject matter**

- 22 I have no doubt from reading the specification that the contribution resides in the program which make the various computer hardware elements perform in a particular way. That of course does not mean that the invention is excluded – it is only excluded if the invention relates to excluded matter *as such*, and a computer program which makes a technical contribution is not a computer program as such.
- 23 In his submissions that the invention was not excluded as a computer program as *such*, Mr Bridle focussed on two lines of argument. First he drew an analogy between the present invention and that found to be patentable by the Court of Appeal in *Aerotel*. More particularly Mr Bridle argued that the data sharing service provided by the present invention was in fact equivalent to the 'special exchange' in *Aerotel* which the court found rendered that invention patentable as contributing to a new arrangement of hardware. Indeed Mr Bridle went to some length to identify common features shared by the data sharing service of the present invention and the special exchange in *Aerotel* – he argued that the present invention requires a processor, memory, data input and output connections and software, and that 'much the same' was required by the special exchange of *Aerotel*.

- 24 I am not persuaded by this line of argument – this is little more than a list of parts of a typical functioning computer system. Moreover as I pointed out at the hearing, in his decision in *Lantana*<sup>6</sup> Birss J found that drawing high-level analogies between the facts of a particular invention and another that has previously been found not to be excluded is of limited value and does not necessarily mean that the particular invention must also be allowable - it merely indicates that inventions have been found to be allowable in fields that are at some level of abstraction similar; each case must be considered on its individual facts. I am not persuaded that the analogies Mr Bridle makes to the facts of the *Aerotel* case helps me in my decision here. The key issue in my view is what function the system has been programmed to perform. I will come back to that, but as regards the analogy with *Aerotel* I observe that processing data requests within a computer system is different to routing calls in a telephone exchange. Furthermore of course, in *Aerotel vs Wavecrest*<sup>7</sup> the *Aerotel* patent was ultimately found not to be patentable because it did not actually provide a new arrangement of hardware.
- 25 In his second line of argument, Mr Bridle sought to rely on certain of the AT&T signposts to support his argument that the invention provides a technical contribution. He did not rely on signposts 2 and 5 as providing the required technical contribution and accepted that signpost 1 was not met as there was no technical effect outside the computer system. For completeness I confirm that in my opinion signposts 1, 2 and 5 do not indicate that the invention makes a technical contribution.
- 26 As for the other signposts, Mr Bridle's submissions as to how signposts 3 and 4 are met are understandably interlinked. Consequently I will deal with them together.
- 27 Mr Bridle argued that signpost 4 was met because in comparison to the traditional one-to-one "API type" connection between systems, the intermediate sharing service resulted in the system performing a different sequence of operations and thus the computer was operating in a new way with the data sharing service effectively acting as a "manifold". Moreover, and with focus on signpost 3, Mr Bridle said the different way of resolving data requests makes the computer system as a whole more efficient and effective because the service allows scaling up of the number of systems that are interacting without increasing the integration complexity in a way that is not possible in the traditional one-to-one 'API type' approach. Mr Bridle also sought to rely on advantages gained from the semantic resolution aspects of the invention but when questioned on this, accepted that this was of itself not new, rather it was one feature of the data sharing service, which as a whole was new.
- 28 Having considered all these submissions very carefully I do not consider that signposts 3 and 4 point to the present invention providing the required technical contribution. What the invention provides is a new way of managing data within a system that enables updated data to be supplied to the systems that have requested that data. To my mind that is merely a database program setting out how data is stored and accessed for use in other systems. Whether it is a better program than

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<sup>6</sup> *Lantana Limited v The Comptroller General of Patents, Designs and Trade Marks* [2013] EWHC 2673 (Pat)

<sup>7</sup> *Aerotel Ltd v Wavecrest Group Enterprises Ltd & Others* [2008] EWHC 1180

previous ones is immaterial – it is still a program for a computer and one which in my view does not make a technical contribution.

- 29 I therefore consider the contribution to fall solely within excluded matter as a program for a computer as such.

**(4) Check whether the contribution is actually technical in nature.**

- 30 I have effectively answered step 4 in my analysis of step 3 above. The invention does not provide a technical contribution and cannot be said to be technical in nature.

- 31 As stated above, whilst drafted as claims to a method for sharing data and a computer system for sharing data respectively, claims 1 and 6 make the same contribution and the same considerations apply to claim 1 as claim 6.

**Decision**

- 32 I have found that the contribution made by the invention defined in claims 1 and 6 falls solely in subject matter excluded under section 1(2) as a program for a computer as such. I have carefully considered the specification as a whole including the remaining claims but can identify no amendment that could reasonably be expected to form the basis of a valid claim. I therefore refuse this application under section 18(3).

**Appeal**

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

**A Bartlett**  
**Divisional Director, acting for the Comptroller**