Intellectual Property Office

BL O/833/21

12 November 2021

PATENTS ACT 1977

APPLICANT	F-Secure Corporation
ISSUE	Whether patent application number GB1901942.1 complies with the requirements of section 1(2)
HEARING OFFICER	B Micklewright

DECISION

Introduction

1 Patent application number GB 1901942.1 entitled “Device safety notification method and system” was filed on 12 February 2019 in the name of F-Secure Corporation. It was published on 19 August 2020 as GB 2581350 A. The examiner considered the invention to be excluded from patentability as a method of doing business as such and a program for a computer as such. Despite several rounds of arguments and amendments the applicant and the examiner did not reach agreement. The matter was therefore referred to me for a decision on the papers.

2 I note that the search is complete but considerations of matters such as clarity and support have been deferred. If the application is found to be allowable on the issue of excluded subject matter it would therefore need to be referred back to the examiner for consideration of these matters.

The invention

3 The invention relates to identifying potentially unsafe devices or devices otherwise subject to a product recall when such devices are registered to a network. Registration data associated with these devices, including a MAC address, is collected at the router to which they are connected and compared to a table of device fingerprints in order to identify the device type. In a backend system an update table is maintained which comprises device types associated with device safety notices. A table of unsafe devices is stored at the router and is updated based on this update table. The identified device is then compared with those in the table to determine if any of the devices are unsafe or are otherwise subject to a product recall. If a device is so identified, the user or administrator is notified of the unsafe device. Figure 2 summarises the steps of the invention.

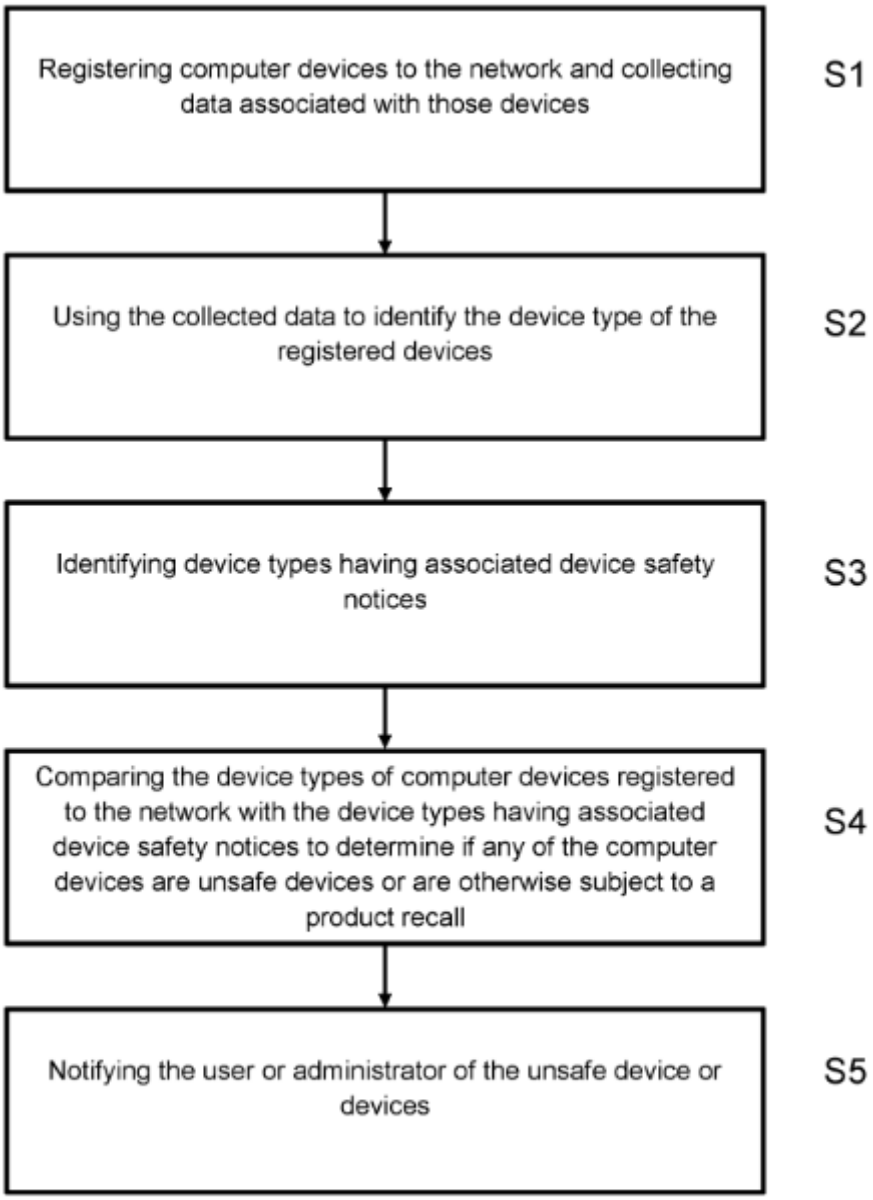

Figure 2

4 The latest claims were filed on 12 February 2021. Claims 1 and 11 are independent claims, relating to a method and system respectively. They have similar features and for the purposes of this decision it is only necessary to consider claim 1, which reads:

> 1. A computer implemented method of identifying potentially unsafe devices or devices otherwise subject to a product recall, and which devices are registered to a wired or wireless network, and of notifying a user or administrator, the method comprising:
>
> at a router of the network, registering computer devices to the network and collecting registration data associated with those devices, wherein the collected registration data comprises a Media Access Control, MAC, address,

at the router, identifying fingerprints for known device types and maintaining a mapping between those fingerprints and the associated device types at the router, mapping the MAC address to a device type by comparing the MAC address to the table of device fingerprints in order to identify the device type of the registered computer devices,

at a backend system, maintaining an update table comprising device types having associated device safety notices and sending the update table to the router, at the router, storing a table of unsafe device types and updating the table based on the update table,

comparing the device types of computer devices registered to the network with the device types in the table to determine if any of the computer devices are unsafe devices or are otherwise subject to a product recall, and for devices so identified, notifying the user or administrator of the unsafe device or devices.

The law

5 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.

6 The provisions of Section 1(2) were considered by the Court of Appeal in *Aerotel*[1] 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.*

7 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*[2] 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".

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[1] *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371
[2] *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451

8 Lewison J in *AT&T/CVON*[3] 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*[4]. 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.*

Assessment

9 I will apply the *Aerotel* approach in my assessment.

(1) Properly construe the claim

10 A Media Access Control (MAC) address is a unique identifier assigned to a device on a network. The claim refers to "identifying fingerprints for known device types". Although the expression is not explicitly defined in the description it is evident that a fingerprint for a device type is data relating to that device type which enables the device type to be identified. In claim 1 the present invention uses the collected MAC address of the device to identify the device type in this manner.

(2) Identify the actual contribution

11 Identifying the contribution in the second step of this test is critical and I refer to the following paragraph in *Aerotel* for guidance:

> *"43. 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."*

12 The applicant does not explicitly set out what they believe the contribution to be, but, in their letter of 6 February 2020, they do specify what they consider to be the problem the invention is solving, and the solution to that problem. They identify the technical problem as being how to identify device types at the router and how to maintain a table at the router. This, they argue, is solved by the step of identifying the types of devices on the network based on the (supplied) network registration

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[3] *AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)
[4] *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

data, and the step of updating the table stored by the router using update data maintained at a backend system and provided by that system to the router. In their letter of 8 April 2020 the applicant highlights the use of a Wi-Fi router to identify potentially unsafe devices and the use by the router of the MAC addresses (received during standard device registration) to achieve this. The applicant in their letter dated 12 February 2021 states that identifying "dangerous" computer devices on a network and notifying a user or administrator that such a computer device has been identified, and also identifying device fingerprints and comparing them to the MAC address in order to identify device types, are elements of the contribution.

13 It is apparent to me that this invention is primarily about solving the problem of how to warn users or administrators when a device which is connected to a network is unsafe or subject to a product recall. This problem is solved by, at the router to which the device is connectee, identifying the device type by comparing its MAC address with stored fingerprint data for device types, maintaining at the router a table of unsafe device types, the table being updated from an update table at a backend system, and notifying the user or administrator of unsafe devices if, when the device type is compared with those stored in the table, the table indicates that the device is unsafe or otherwise subject to a product recall.

14 I note that page 5 of the description makes it clear that identifying devices, including their device types, using their MAC address as a fingerprint is a known router-deployed device type identification procedure. Page 5 lines 7-10 and 30-33 reads:

> *"In some cases, routers also perform a separate device identification step in which the information exchanged during registration is used to identify the type of device that is registered. One such router is the SENSETM router by F-Secure™, Helsinki, Finland.*
>
> *…*
>
> *The present inventors have recognised that these known, router-deployed device type identification procedures can be employed in a new and surprising way to alert users and network administrators to relevant product recall information, potentially reducing the risks associated with using unsafe devices."*

15 I am not therefore convinced that the claimed method of identifying device types is in itself something that has been added to human knowledge. Although it is necessary to identify device types as part of the invention, I note that this achieved in a conventional manner. The contribution relates to using this conventionally collected information to provide notifications of unsafe device types by maintaining at the router a table of unsafe device types, the table being updated from an update table at a backend system, and notifying the user or administrator of unsafe devices if, when the device type is compared with those stored in the table, the table indicates that the device is unsafe or otherwise subject to a product recall.

16 I therefore identify the contribution as:

> A method of identifying potentially unsafe devices or devices subject to a product recall when such devices are connected to a network via a router, the method comprising using known methods to identify device types at routers by comparing device MAC addresses with stored fingerprint data for device

types, maintaining at the router a table of unsafe device types, the table being updated from an update table at a backend system, and notifying the user or administrator of unsafe devices if, when the device type is compared with those stored in the table, the table indicates that the device is unsafe or otherwise subject to a product recall.

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

17 For convenience I will consider steps (3) and (4) together.

18 At its core this invention is about notifying users and administrators about unsafe devices or devices subject to a product recall for devices connected to a network via a router. It does this by maintaining a table at the router of devices which indicates which devices are unsafe. This table is updated from an update table stored at a backend system. It involves using a known process (identifying devices and device types at a router using their MAC address) to carry out what in my view is an administrative task, namely, to notify users or administrators of unsafe devices or devices which are subject to a product recall. The invention lies in a new way of using the data that routers routinely collect on the devices connected to them, and using the known device identification systems based on fingerprint data to provide notifications on devices which are unsafe or are otherwise subject to a product recall.

19 I will first consider the computer program exclusion. Care must be taken here because an invention is not excluded merely because it is embodied as a program for a computer. What is important is whether the program makes a technical contribution. The *AT&T* signposts are a useful aid in determining this question. I will consider each signpost in turn.

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

21 The contribution functions within the computer system (the router, primarily, and also the backend server and the devices, all which are elements of the computer system). The only potential effect outside of the computer is the notification to the user or administrator of unsafe devices. This is not however a technical effect on a process carried on outside of the computer. Rather it is an administrative step of imparting information to a user. The identification of device types does not itself form part of the contribution, being a known process at the time of filing of the application, but, even if it does, it merely relates to comparing data collected by the router in a conventional manner with data stored in a table, all of which is contained within the computer system, and does not make a technical effect on a process outside of the computer. Identification of device types in this manner is not a technical effect on a process outside of the computer.

22 (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

23 The claimed technical effect does not operate at the architecture level of the architecture in the present case. It is an application-level program using specific data

for a specific purpose, namely data relating to device identities and unsafe devices to provide notifications to users and administrators of unsafe devices.

24 *(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*

25 I will consider signposts (iii) and (iv) together. Nothing in the contribution relates to the computer itself operating in a new way, or to making the computer run more efficiently or effectively. The invention merely provides notifications of unsafe devices to users and administrators. The computer itself does not operate in a new way.

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

27 The applicant argues that the problem relates to how to identify device types at the router and how to maintain a table at the router. I am not convinced that this is a correct identification of the problem. The problem of identification of device types at the router is solved using prior art methods based on MAC addresses and fingerprint data and does not, in my view, relate to the perceived problem of the invention. Moreover I do not consider that maintaining a table at a router to be a technical problem, but rather it relates to updating data in tables. In my view the problem the invention is solving relates to finding efficient and effective ways of notifying users and administrators when devices connected to a router are unsafe or subject to a product recall. This is in my view an administrative problem and not a technical problem, and the solution, namely to update a table on the router from a table on a backend server once the device type has been identified, lies entirely in the fields of administration and data processing.

28 I therefore conclude that none of the signposts point to the present invention making a technical contribution. Taking a step back, the invention relates to identifying users or administrators of potentially unsafe devices. It does this by using known processes for identifying device types of devices connected to a router and comparing with a table of unsafe devices stored at the router, updated from a backend server. Even if I also consider the step of identifying the device type, which compares MAC address data routers routinely collect from connected devices to fingerprint data stored in a table, the contribution does not make any technical contribution but relates entirely to data processing and administrative steps and lies in the excluded field of a program for a computer as such.

29 I will also briefly consider the business method exclusion. The notification of potentially unsafe devices or devices subject to a product recall seems to me to be entirely an administrative activity falling within the exclusion of a method of doing business as such. Although a computer is involved in this task, I note the comment made in paragraph 35 of *Halliburton*[5]:

> *"35 The business method cases can be tricky to analyse by just asking whether the invention has a technical effect or makes a technical contribution. The reason is that computers are self evidently technical in nature. Thus when a business method is*

[5] *Halliburton Energy Services Inc's Applications* [2012] RPC 129

*implemented on a computer, the patentee has a rich vein of arguments to deploy in seeking to contend that his invention gives rise to a technical effect or makes a technical contribution. For example the computer is said to be a faster, more efficient computerized book keeper than before and surely, says the patentee, that is a technical effect or technical advance. And so it is, in a way, but the law has resolutely sought to hold the line at excluding such things from patents. That means that some apparently technical effects do not always count. So a computer programmed to be a better computer is patentable (*Symbian*) but as Fox L.J. pointed out in relation to the business method exclusion in* Merrill Lynch*, the fact that the method of doing business may be an improvement on previous methods is immaterial because the business method exclusion is generic."*

30 I therefore conclude that the contribution also lies in the excluded field of a method of doing business as such.

Conclusion

31 I have found that the claimed invention relates to a program for a computer as such and a method of doing business as such and so is excluded from patentability under sections 1(1)(d) and 1(2). I therefore refuse the application under section 18(3).

Appeal

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

B Micklewright

Deputy Director, acting for the Comptroller