



## PATENTS ACT 1977

APPLICANT                      Lenovo (Singapore) Pte. Ltd

ISSUE                         Whether application GB 1518591.1 complies with  
                                      Section 1(2) of the Patents Act 1977

HEARING OFFICER             Stephen Brown

---

### DECISION

#### Introduction

- 1 Patent Application GB1518591.1 was filed on 20<sup>th</sup> October 2015 claiming a priority date of 20<sup>th</sup> October 2014 from an earlier US application. It was published as GB 2533842 A on 6<sup>th</sup> July 2016. Despite several rounds of amendment the applicant has been unable to convince the Examiner that the application is not excluded under Section 1(2) of the Act. The applicant thus requested a hearing to resolve the matter.
- 2 This took place on 13<sup>th</sup> November by telephone with Mr Thomas Leffers of Schweiger and Partners representing the Applicants. I was assisted by Mr Nigel Hanley and the Examiner Dr Mathew Philpott also attended. The hearing was observed by Ms Sophie Cartmell.

#### The Application

- 3 It is well known on devices such as smartphones for software to suggest modifications to text input by the user – this is often referred to as ‘auto-correction’. As the applicant points out in their description these conventionally provide a spelling and grammar check and, in some instances, will also offer suggestions based on a user’s prior inputs. Storing these allows a device to offer suggestions based on only a few characters of input.
- 4 The current application recognises that whilst this is useful for common misspellings the process can fail to notice a correctly spelled word that is misplaced or misused. By utilising a ‘context’ around the text input the current application provides a way of improving the suggested corrections presented to a user. By way of example the current application refers to a document about breakfast and making a determination between the words “cereal” and “serial”. Although both are correctly spelled the word “cereal” would be suggested as it is more likely to be correct based on a breakfast context.

- 5 Thus the current application describes a system which utilises various sensors, such as a GPS or accelerometer, on a device to determine a context which can then be used to modify the suggestions made when text is input. The system also uses a clock on the device to further enhance the confidence level of the suggestions.

## **The Claims**

- 6 The current claims were filed on 22<sup>nd</sup> February 2018. They comprise three independent claims directed to a method, a device and a program product. Claim 1 reads:

*A method comprising:*

*accessing, using a processor of an electronic device, a data store;*

*determining, using a processor, a predetermined context based on the data store;*

*receiving, at an input device of the electronic device, user text input;*

*analysing, using a processor, the user text input based on the predetermined context; and*

*offering, using a processor, a suggested modification of the user text input based on the predetermined context, wherein the method further comprises*

*receiving, at the electronic device, one or more sensor inputs;*

*associating the one or more sensor inputs with a predetermined context; and*

*storing, in the data store, contextual data derived from the one or more sensor inputs, and wherein*

*the accessing the data store comprises accessing contextual data derived from the one or more sensor inputs, and*

*the determining a predetermined context comprises selecting an active predetermined context based on the contextual data derived from the one or more sensor inputs, wherein the predetermined context is updated according to a policy, and wherein*

*the one or more sensor inputs are selected from the group of sensor inputs consisting of: a microphone input, a global positioning satellite system input, a wireless network derived input, and an accelerometer input, wherein*

*the one or more sensor inputs include data used to enhance a confidence level of the suggested modifications, and wherein an integral clock offering a current local time provides data to enhance the confidence level.*

Claim 7 reads:

*A device, comprising:*

*an input device;*

*a sensor;*

*a processor operatively coupled to the input device and the sensor, and*

*a memory operatively coupled to the processor that stores instructions executable by the processor, the instructions comprising:*

*instructions that access a data store;*

*instructions that determine a predetermined context based on the data store;*

*instructions that receive, at the input device, a user text input;*

*instructions that analyse the user text input based on the predetermined context, and*

*instructions that offer a suggested modification of the user text input based on the predetermined context, wherein the instructions further comprise:*

*instructions that receive one or more sensor inputs;*

*instructions that associate the one or more sensor inputs with a predetermined context; and*

*instructions that store, in the data store, contextual data derived from the one or more sensor inputs, wherein:*

*to access the data store comprises accessing contextual data derived from the one or more sensor inputs; and wherein*

*to determine a predetermined context comprises selecting an active predetermined context based on the contextual data derived from the one or more sensor input, and wherein the predetermined context is updated according to a policy, and wherein*

*the one or more sensor inputs are selected from the group of sensor inputs consisting of: a microphone input, a global*

*positioning satellite system input, a wireless network derived input, and an accelerometer input, wherein*

*the one or more sensor inputs include data usable to enhance a confidence level of the suggested modifications, and wherein an integral clock offering a current local time provides data to enhance the confidence level.*

Claim 13 reads:

*A program product, comprising;*

*A storage device having program code embodied therewith, the program code being executable by a processor and comprising;*

*program code that accesses a data store;*

*program code that determines a predetermined context based on the data store;*

*program code that receives, at an input device of the electronic device, a user text input;*

*program code that analyses the user text input based on the predetermined context; and*

*program code that offers a suggested modification of the user text input based on the predetermined context, wherein an active predetermined context is determined based on one or more sensor inputs, and wherein the predetermined context is updated according to a policy, and wherein the one or more sensor inputs are selected from the group of sensor inputs consisting of: a microphone input, a global positioning satellite system input, a wireless network derived input, and an accelerometer input, wherein*

*the one or more sensor inputs include data used to enhance a confidence level of suggested modifications, and wherein an integral clock offering a current local time provides data to enhance the confidence level.*

## **The Law**

- 7 The Section 1(2) of the Act concerns inventions excluded from patentability. It reads:

*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 –*

...

*(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.*

8 In order to decide whether an invention relates to subject matter excluded by Section 1(2), the Court of Appeal has said that the issue must be decided by answering the question of whether the invention reveals a technical contribution to the state of the art. The Court of Appeal in *Aerotel/Macrossan*<sup>1</sup> set out the following four-step approach to help decide this issue:

*1) Properly construe the claim;*

*2) Identify the actual (or alleged) contribution;*

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

*4) Check whether the actual or alleged contribution is actually technical in nature.*

9 The operation of this approach is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is essentially a matter of determining what it is the inventor has really added to human knowledge, and involves looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution.

10 The case law on computer implemented inventions has been further elaborated in *AT&T/CVON*<sup>2</sup> which provided five helpful signposts to apply when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*<sup>3</sup>, Lewison LJ reconsidered the fourth of these signposts and felt that it had been expressed too restrictively. The updated 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;*

---

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

<sup>2</sup> *AT&T Knowledge Ventures LP and CVON Innovations Limited v Comptroller General of Patents* [2009] EWHC 343

<sup>3</sup> *HTC v Apple* [2013] EWCA Civ 451

- iii) whether the claimed technical effect results in the computer being made to operate in a new way;*
- iv) whether the program make the computer a better computer in the sense of running more efficiently and effectively as a computer; and*
- v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.*

### **Applying Aerotel**

- 11 I can see no issues of plurality so it follows that my analysis will apply to all the independent claims *mutatis mutandis*.
- 12 At the hearing there was little discussion concerning how the claims should be construed. Indeed, I believe that the meaning of the claims is clear and requires little interpretation. However, I do think it pertinent to decide exactly what I understand by the term “predetermined context”.
- 13 Paragraph 0033 of the specification states:

*The contextual data store may include raw data e.g. recently received user inputs and/or processed data e.g. user inputs mapped to nodes within a hierarchy, a topic or a context associated or selected via that mapping.*

This allows the system to infer a context when interpreting future text inputs. Returning to the example of “serial/cereal”, based on this text and the local time, the system may determine that the most likely context is “morning” or “breakfast” and thus choose “cereal”. In effect a “predetermined context” is a given set of associated data within the contextual data store. The system determines which context to use based on the text input, sensor inputs, and the processed data structure already in the store. I will construe “predetermined context” in this light.

- 14 Next, I must identify the contribution. The applicant argues that the contribution is “an improved auto correction and modification suggestion via the analysis of text inputs by the user in light of active contextual data wherein the active contextual data is derived by microphone, GPS, Wireless Network input or accelerometer input as well as an integral clock offering a local time”. Mr Leffer’s specifically addressed me on the meaning of the word ‘active’ in this definition. In his view it signifies that the auto-correction and modification suggestion has a dynamic link with the sensor inputs and thereby with the ‘real world’.
- 15 Looking carefully at the claims, I am not sure they support this view. Specifically, the claims require the device to receive “sensor inputs”, associate them with a predetermined context and then store contextual data derived from these inputs in a data store. Thus the choice of ‘active’ contextual data is done via the data store and its sets of associated data. Furthermore, the applicants suggested contribution ignores the detail that the confidence level of a suggestion may be enhanced by the sensor inputs and the integral clock. I take this to mean that, for example, the time

7:30 AM would improve the confidence that the word “cereal” is more likely than the word “serial”.

- 16 I thus conclude that the contribution is “the auto-correction and modification suggestion of input text using a predetermined context derived from a contextual data store, the contextual data derived from one or more sensor inputs, where confidence in the suggested modification is enhanced by sensor and clock inputs”.
- 17 The next step of the Aerotel test is to determine if this contribution lies solely within excluded subject matter. It is clear to me that the contribution is delivered by software running on standard hardware. At the hearing the attorney confirmed that this was indeed the case, stating that the underlying hardware could be, for example, a “smartphone” with standard sensors. However, he cautioned that care needed to be taken as the key was the “active predetermined context”. This meant that sensors could not be in a standby mode within the device and that, he argued was different.
- 18 I note that the Examiner argued that the contribution he identified was merely the presentation of information, as such. At the hearing, the attorney countered that the involvement of the sensors and the need to save the data to the data store disproved this objection. In this instance I agree and will now return to the ‘program for a computer’ exclusion, turning to the modified AT&T signposts.
- 19 At the hearing it was agreed that the 1<sup>st</sup>, 2<sup>nd</sup> and 5<sup>th</sup> signposts were not relevant to this case. I am grateful to Mr Leffers for this point. Regarding the 3<sup>rd</sup> signpost, he argued that it was met as the suggested text modifications were determined based on the sensor inputs *each time* text was entered. As mentioned above, he stressed that the use of an “active” predetermined context meant that sensors could not be in standby mode. In his opinion, this meant that the computer was operating in a new way.
- 20 Regarding the 4<sup>th</sup> signpost, Mr Leffers pointed out that known systems suggest modifications based on common misspellings and grammatical errors. In contrast, the current system detects *misplaced* words, i.e. words that are correctly spelt but not in the right context. He argued that solving this problem made the computer more efficient as less modifications have to be suggested meaning less processing power is required.
- 21 I am afraid that I am not swayed by either of these arguments. I simply do not see a new computer. In my view what is happening is an application is running on an otherwise standard device, accessing the known facilities and sensors of that device. It may well be a ‘better’ application and indeed one that operates more effectively and efficiently in determining text modifications. In my opinion though, these are all features of the software and not the device itself. There is no new computer nor does the current computer operate more efficiently or effectively. Likewise, the various sensors and facilities of the device are operating as they always do – they are also unchanged. For these reasons I conclude that the 3<sup>rd</sup> & 4<sup>th</sup> signposts are not met and that the contribution falls solely within the program for a computer exclusion.
- 22 The final step of the Aerotel test is to check whether the contribution is technical in nature. As a ‘better’ method for the auto-correction and modification suggestion of

input text I am content that it is not. I thus decide that the contribution is excluded as a program for a computer as such.

### **Decision**

- 23 I have decided that the invention defined in the independent claims falls solely within matter excluded under Section 1(2) as a program for a computer as such. Having reviewed the application, I do not consider that any saving amendment is possible. I therefore refuse this application under section 18(3).

### **Appeal**

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

**Stephen Brown**

Deputy Director, acting for the Comptroller