



PATENTS ACT 1977

APPLICANT Arris Enterprises, Inc

ISSUE Whether patent application GB1308715.0 complies
with section 1(2)

HEARING OFFICER Mrs S E Chalmers

DECISION

Introduction

- 1 This decision relates to patent application GB1308715.0 entitled "*Display of controllable attributes for a controllable item based on context*". The application is derived from a PCT application published by WIPO as WO 2012/067763. This was filed on 24 October 2011 and claims an earliest priority date of 16 November 2010 from US application 61/414202. The application entered the GB national phase on 15 May 2013 and was subsequently re-published as GB 2499540 A.
- 2 The first examination report, dated 10 November 2017, raised the objection that the invention was excluded from patentability as the presentation of information and a computer program. Despite amendment and several rounds of correspondence, the applicant has been unable to convince the Examiner that the invention is patentable under Section 1(2). The applicant's attorney requested a hearing based on the documents on file to resolve the matter. All other issues have been resolved.

The invention

- 3 The invention relates to a user interface used for controlling a thermostat. A set of controllable attributes including heating set point (or heat set) and cooling set point (or cool set) are displayed. The controllable attributes are not arranged in a fixed manner but are placed in a particular order based on a context i.e. an increase or decrease in ambient temperature.
- 4 The current claims were filed on 10 January 2019 and comprise two independent claims directed to a method for controlling a thermostat (claim 1) and a non-transitory computer-readable storage medium containing instructions for controlling a computer system to operate a thermostat (claim 3). Claim 1 and claim 3 are of very similar scope and will stand or fall together. In the discussions that follow I will consider claim 1 which reads as follows:

*A method for controlling a thermostat comprising:
determining focus on a focus item associated with a controllable item, the focus item being displayed on an interface that includes a plurality of display positions;
determining a context for the controllable item based on the focus being on the focus item;
determining a set of controllable attributes that are used to control the controllable item;
dynamically, by a computing device, determining an order of the set of controllable attributes based on the context, wherein the context is used to prioritize the set of controllable attributes in the order; and
displaying at least a portion of the set of controllable attributes in the order in at least a portion of the plurality of display positions wherein the context determines the order based on external parameters, and the controllable attributes are displayed from highest to lowest in the order, the at least a portion of the set of controllable attributes allowing control of the controllable item,
wherein the controllable item is a thermostat,
wherein the focus item comprises an icon on a display for the thermostat,
wherein the displayed portion of the set of controllable attributes comprises a list including heat set and cool set,
wherein the context comprises an increase or decrease in ambient temperature, and
wherein the heat set is prioritized and displayed at a higher priority with a decrease in ambient temperature and wherein the cool set is prioritized and displayed at a higher priority with an increase in ambient temperature.*

The law

- 5 The section of the Act concerning inventions excluded from patentability is Section 1(2), which reads:
- “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 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.”*
- 6 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*¹ set out the following four-step approach to help decide the issue:

- 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 The operation of the approach is explained at paragraphs 40-48 of the judgment. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution.
- 8 In *Symbian*² the Court of Appeal reaffirmed the *Aerotel* approach while considering a question of “technical contribution” as it related to computer programs emphasising the need to look at the practical reality of what the program achieved, and to ask whether there was something more than just a “better program”.
- 9 The case law on computer implemented inventions was further elaborated in *AT&T/CVON*³ which provided five helpful signposts to apply when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*⁴, Lewison LJ reconsidered the fourth of these signposts and felt that it had been expressed too restrictively. 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 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.*

Application of the *Aerotel* approach

Step 1: Properly construe the claim

- 10 The construction of claim 1 is straightforward and poses no particular problems. However, I believe that it would be beneficial to provide a brief comment on how I have construed some of these words and phrases.
- 11 Claim 1 is directed to ‘a method for controlling a thermostat’. It is clear from the remainder of the claim that the claim is primarily directed to a method of displaying at least a portion of a set of controllable attributes in a particular order where the order

¹ *Aerotel Ltd v Telco Holdings Ltd (and others) and Macrossan’s Application* [2006] EWCA Civ 1371

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

³ *AT&T Knowledge Ventures LP and CVON Innovations Limited v Comptroller General of Patents* [2009] EWHC 343

⁴ *HTC v Apple* [2013] EWCA Civ 451

is determined based on a context. The 'context' from the claim comprises an increase or decrease in ambient temperature. The skilled person would realise from paragraph [0045] of the application that the ambient temperature is detected by the thermostat.

Step 2: Identify the actual (or alleged) contribution

12 The examiner has identified the contribution as:

A method for displaying heat set and cool set controllable attributes of a thermostat based upon an increase or decrease in ambient temperature wherein the heat set is prioritized with a decrease in ambient temperature, and a cool set is prioritized with an increase in ambient temperature; thus reducing a number of user interactions required for item selection.

13 A summary of the contribution has not been provided by the applicant.

14 In paragraph 43 of the *Aerotel/Macrossan* judgment, Jacob LJ sets out that identification of 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'

15 It is useful to consider these factors.

16 The problem to be solved by the invention is that user interfaces typically represent a set of controls in pre-set arrangements. Navigating to a control requires many keystrokes and the navigation may become tedious for a user (see paragraphs 0003-0004 of the description of the application).

17 Moving onto how the invention works, I will first consider the relevant prior art. The application was searched during the international phase. Patent document US 2010/271312 A1 was cited against the independent claims in their original form. On completion of the search in the UK, a further document WO 2010/116285 A1 was also cited. Both documents were used to support an objection that the original independent claims were not novel. US '312 appears to be the closest prior art to the invention. US '312 discloses methods and apparatuses for presenting user-friendly menus and user actuation targets on a touch-sensitive display. A controller may receive information from outside sources, such as weather information services. If a user actuates a weather information retrieval icon and the weather is rain, the controller may place satellite weather photo user actuation targets closer to the user's finger than temperature user actuation targets as the user may be more interested in seeing pictures of cloud cover when inquiring about the weather during rain. Conversely, if the weather is sunny, a temperature user actuation target may be placed closer to the user's finger, as people are sometimes not interested in radar images when the weather is sunny. (See in particular paragraphs 0031 and 0042.)

- 18 The invention under consideration is concerned with a user interface that is used to control controllable items, including a thermostat, based on input from an input device. Users may use keystrokes to navigate among focus items or icons in the interface which represent different controllable items. Further keystrokes may be used to navigate among controllable attributes for a focus item. Controllable attributes for a thermostat include heating set point (or heat set), cooling set point (or cool set), fan and mode. Once focus has been determined on a particular focus item, a context is determined. The context in the invention is the increase or decrease of the ambient temperature as detected by the thermostat. The context is used to adjust the order of controllable attributes. If the temperature is going down, then heat set will be displayed first because in this case it is expected that the user may want to turn on the heat. Conversely, if the temperature is going up, cool set is prioritized on the display because cool set may be most likely to be used first. (See in particular paragraphs 0043-0045 of the description of the application.)
- 19 The invention is clearly distinguished over the cited prior art not least because the invention involves the detection of increase or decrease in ambient temperature to adjust the order of a display; this is neither known nor suggested from the cited prior art.
- 20 The advantage of the invention is a reduction in the number of keystrokes that are needed by the user to navigate among the controllable attributes for the thermostat. The applicant's attorney has indicated that as a result of the invention, speedier user input of the heating instruction is facilitated.
- 21 The invention is clearly implemented on a computer system including one or more computer processors and a computer-readable storage medium. The computing devices are standard.
- 22 From these considerations I regard the contribution to be: a computer-implemented method of displaying a set of controllable attributes including heat set and cool set on a user interface used for controlling a thermostat, where the heat set is displayed at a higher priority with a decrease in detected ambient temperature and the cool set is displayed at a lower priority with an increase in detected ambient temperature; thus reducing the number of keystrokes required by the user.

Steps 3 and 4: Ask whether the contribution falls solely within the excluded subject matter and whether it is technical in nature

- 23 The third and fourth steps of the *Aerotel* test involve considering whether the contribution falls solely within excluded categories, and then checking whether the contribution is technical in nature. It is appropriate to consider these two steps together because whether the contribution is technical in nature will have a direct impact on whether it falls solely within excluded matter.
- 24 The examiner has asserted that the invention lies in varying how the heat set and cool set controllable attributes are prioritised in a display. He considered the contribution to be a user interface and found the contribution to lie within the excluded fields of the presentation of information and a computer program.

- 25 The applicant's attorney disputes this assessment. In particular in his most recent letter of 10 January 2019 he states that "the subject-matter of claim 1 relates to a method for controlling a technical device (i.e. a thermostat) and provides for better control of the thermostat based on technical parameters (i.e. ambient temperature)". Regarding the examiner's assertion that the contribution of claim 1 is that of a user interface, the attorney submits that "this user interface is for use in controlling a technical device (i.e. a thermostat) and therefore, as a whole, the contribution provided by the method of claim 1 is in fact a technical one".
- 26 In response to these arguments, it is useful to refer to the decision of the Patents Court in *Gemstar*⁵ which considered the question of computerised methods for presenting information. *Gemstar* related to three patents which are concerned with electronic programme guides (EPGs) for the provision of TV programme information. The first patent (or "Single Channel" patent) involves the broadcast of EPG information and in particular the format in which that information is displayed. The invention first displays programme listings in grid form, showing a number of programmes for a number of channels for various periods of time. It is possible to move a cursor so as to highlight a particular cell. If that cell is then selected the display switches to single channel mode where the screen shows a list of the programmes appearing on the selected programme's channel at and around the selected time. Thus the invention involves switching from larger scale grid to single channel.
- 27 In his judgment in paragraph 56, Mann J referred to the EPO guidance which states that "A presentation of information defined solely by the content of the information is not patentable". Mann J emphasized, however, that "if the presentation of information has some technical features over and above the information and its delivery, then it might be patentable". In paragraph 57 Mann J stated further, "So what achieves patentability is some real world technical achievement outside the information itself".
- 28 Mann J found the single channel element of the Single Channel patent to be excluded from patentability as a presentation of information. He concluded in paragraph 58 that all that has happened is that information is presented in a different way. He explained that in his view the starting point and end point (i.e. grid format and single channel format) are plainly presentation of information; the middle factor, selecting material on screen and clicking on it, does not involve a new technical step as it was part of the common general knowledge by the relevant time. He asserted further in paragraph 59 that providing a better (or new) user interface is not a technical description. What matters is technical effects.
- 29 I see a clear distinction between the Single Channel patent in *Gemstar* and the invention considered here. In *Gemstar* information is switched between two different formats following known cursor movement and marking. In the current invention, a temperature increase or decrease is detected and this information is used to determine in which order the controllable attributes heat set and cool set are displayed. Here the middle factor, the detection of temperature increase or decrease, involves the detection of a physical parameter which is clearly a technical process. Moreover, this middle factor involves a new technical step because the use of this

⁵ *Gemstar-TV Guide International Inc v Virgin Media Limited* [2010] RPC 10

context in this way is one of the features that distinguishes the invention over the prior art as discussed above. I consider the invention not to be defined solely by the content of the information or simply to be a user interface. Using a detection of increase or decrease of temperature and using this to order the display provides a real world technical achievement outside the information itself. I therefore consider the contribution to be technical in nature and to fall outside the excluded matter of the presentation of information.

- 30 The examiner has also asserted that the contribution lies within the excluded field of a computer program. He considered the *AT&T* signposts, in particular signpost (i), and concluded that the invention fails to meet any of them. As discussed, I consider that detecting an increase or decrease in temperature and using this information to order the display of the controllable attributes provides a technical effect. This effect is also sufficient to move the contribution outside the excluded field of a computer program.
- 31 I have considered the invention as defined by independent claim 1. I reach the same conclusion for independent claim 3.

Decision

- 32 I have found that the contribution made by the invention defined by the claims is not excluded under Section 1(2). I therefore remit the case to the examiner so that the case can be sent to grant.

Mrs S E Chalmers

Deputy Director, acting for the Comptroller