Intellectual Property Office

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11 December 2018

PATENTS ACT 1977

APPLICANT: Fisher-Rosemount Systems, Inc.

ISSUE: Whether Patent application GB1113568.8 complies with Section 1(2)

HEARING OFFICER : Mrs S E Chalmers

DECISION

1 Patent application number GB 1113568.8 was filed on 5 August 2011 claiming a priority date of 31 August 2010 from an earlier US application. It was published as GB 2483333 on 7 March 2012.

2 The first examination report, dated 4 September 2017, raised objections that the invention was excluded from patentability as a computer program and/or the presentation of information, lacked novelty and inventive step.

3 Several rounds of amendment and argument followed which have addressed the objections to novelty and inventive step but the applicant has been unable to convince the examiner that the invention is patentable under Section 1(2). The applicant accepted an offer of a hearing to resolve the matter - this took place on 30 October 2018 by video link and was attended by the applicant's attorney Russell Sessford of Forresters. Ms Anna Rice (examiner) and Mr Nikki Dowell (assistant) were also present. Mr Charles Jarman also attended in the UKIPO as an observer.

4 Skeleton arguments were filed in good time before the hearing on 22 October 2018 setting out an amended set of claims constituting the main request and an auxiliary set of claims to be considered if the main set were found to be unallowable. I am grateful for the skeleton arguments and for the list of decisions referred to which I have taken full account of in reaching my decision.

5 At the hearing Mr Sessford highlighted that the compliance deadline was 4 November 2018 and that the applicant wished to extend the compliance deadline to allow sufficient time to attend to any further amendments which may be needed after issuance of this decision. I confirmed I would exercise discretion for any such extension whilst this decision was pending.

The invention

6 The application is entitled “Methods and apparatus to display localized process control objects” and is said to relate generally to process control systems and, more particularly, to methods and apparatus to display localized process control objects and associated process control information. The process control objects are displayed as graphical data representations such as charts, graphs, data tables, list boxes, graphical symbols, text, etc in a user interface of applications operating on workstations to convey process control information from field devices so that operators may manage the process control system.

7 In known systems, process control applications display process control objects by referencing corresponding electronic device description language (EDDL) files. It is said that it is known to modify the EDDL files to the language of the operator and/or the conventional data formats in a given locale but this is said to cause problems when updates are required.

8 To mitigate these problems the invention provides for tags within device description files in place of localized text, formats, and/or values which reference localized information within locale templates. Sets of locale templates are provided and a set of locale templates selected based on a locale associated with a request from a process control application. Each of the sets may include locale templates for different process control objects, device display types, and/or process control information types. Each of the sets is associated with a different locale and provides localized information such as language phrases and/or formats data fields based a numerical format associated with a locale. The process control object is processed for display by inserting portions of the selected locale template into the tag in the device description file together with identified process control information. The resulting process control object is then displayed by the requesting process control application such as via a web browser. The locale templates and the device description files are said to be provided in a translation layer (second layer) between the applications layer (third layer) and network application/controller subsystem layers (first layer/layer 0) as shown in figure 5:

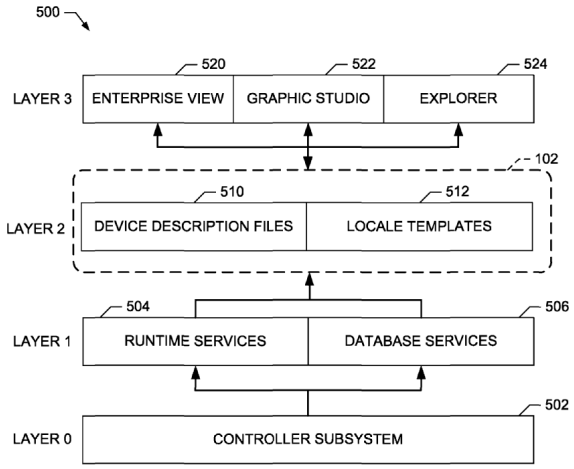

FIG. 5

9 In an embodiment the locale templates may be Extensible Stylesheet Language Transformation (XSLT) files or Extensible Markup Language (XML) files that include localized information with tags that reference corresponding tags in an XML device description file. The XSLT/XML files may be converted into a Hypertext Markup Language (HTML) file to display process control objects within a web browser.

10 The methods may also display control objects based on a type of display with localized layout information within locale templates for different screen sizes generating a display for a relatively small viewing area for process control objects to be displayed by a wireless device and a display for a relatively large viewing area for the same process control objects to be displayed by a workstation.

11 At the hearing Mr Sessford proposed that different locales may have different safety standards which could be reflected in locale templates and likened the EDDL files to device drivers providing an interface between process control applications and field devices.

The claims

12 Both the main and auxiliary requests include three independent claims numbered 1, 2 and 14 that define a machine accessible medium having instructions stored thereon, a method and an apparatus respectively.

13 Mr Sessford agreed that the claims of each request should stand or fall together and in the discussions we focussed on claim 2. Claim 2 of the main request reads:

> *A method to display localized process control objects on a user interface of a workstation and to enable an operator to view, modify, and/or correct one or more processes within a process control system via the displayed localized process control objects, the method comprising:*
>
> *receiving a request, via the user interface, to view a process control object associated with a process control system, on the user interface, wherein the user interface is part of an application of a third layer of a process control architecture;*
>
> *selecting, in a second layer of the process control architecture, a device description file based on the process control object, the device description file including a tag, wherein the tag references localized information within at least one locale template;*
>
> *selecting, in the second layer of the process control architecture, a set of locale templates based on a locale associated with the request;*
>
> *selecting, in the second layer of the process control architecture, a locale template from the set of locale templates based on the process control object, wherein selecting the locale template from the set of locale templates includes: identifying a type of the process control object; and matching the type to the locale template by identifying the locale template that includes an indicator that specifies the locale template is configured to display the process control object type;*
>
> *processing, in the second layer of the process control architecture, the process control object for display by inserting portions of the selected locale template into the tag in the device description file and accessing process*

control information from a first layer of the process control architecture based on the received request;

transmitting instructions for displaying the process control object within the selected locale template to the application that transmitted the request; and

enabling an operator to view, modify, and/or correct one or more processes within the process control system via the displayed process control object, wherein the process control object is displayed in the application of the third layer of the process control architecture.

14 Claim 2 of the auxiliary request is as above additionally referring to (emphasis added):

A method to display localized process control objects on a user interface of a workstation and to enable an operator to view, modify, and/or correct one or more processes within a process control system via the displayed localized process control objects, the method comprising:

…

selecting, in the second layer of the process control architecture, a locale template from the set of locale templates based on the process control object and a device type, wherein selecting the locale template from the set of locale templates includes: identifying a type of the process control object and a device type; and matching the type to the locale template by identifying the locale template that includes an indicator that specifies the locale template is configured to display the process control object type for a screen size of the device type;

…

The law

15 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)...

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."

16 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 (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.*

17 The operation of the 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.

18 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".

19 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.*

20 Mr Sessford drew my attention to two decisions of the EPO Technical Board of Appeal, T 6/83[5] and T 115/85[6], both of which are explicitly referenced in UK court decisions, and used to inform, the Aerotel approach and the AT&T signposts. Mr Sessford also referred to the High Court decision in Lantana[7] in anticipation of

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[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
[5] IBM/Data processing network T 6/83 [1990]
[6] IBM/Computer-related invention T 115/85 [1990]
[7] Lantana v Comptroller-General of Patents [2013] EWHC 2673 (Pat)

comments he felt I might make cautioning against constructing generalised categories that cover both an allowed invention and the present invention.

Application of the Aerotel approach – main request

Step 1: Properly construe the claim

21 Both the examiner and Mr Sessford agree that the claims are clear and no special construction is required of any of the words or phrases. At the hearing I queried the construction of the feature of the steps being performed in the various layers of the process control architecture. Mr Sessford asserted that these references are relative to one another and would be understood by a computer programmer. He also said that they were added as a result of arguments raised by the examiner, that they weren't essential to the construction of the claim and could be removed without changing the meaning of the claims. This reassured me and in any event I don't think anything will turn on this.

22 The claim concerns a method to display localized process control objects within a process control system comprising receiving a request to view a process control object, selecting a device description file which includes a tag which references localized information within at least one locale template based on the object; selecting a set of locale templates based on a locale associated with the request and a locale template from the set of locale templates based on the type of process control object; processing the process control object for display by inserting portions of the selected locale template into the tag in the device description file and accessing process control information from the process control architecture; transmitting instructions for displaying the process control object; and enabling an operator to view, modify, and/or correct one or more processes within the process control system via the displayed process control object.

Step 2: Identify the actual (or alleged) contribution

23 The examiner suggests that the contribution to the art is:

- *To solve the problem of: inefficient or time-consuming updates of process control systems in order to support multiple languages*
- *A computer program configured to:*
    - *Receive a request to view a control object*
    - *Select a description file, which includes a tag referencing localised information, based on said object*
    - *Select a locale template from a set of templates based on said object*
    - *Process the object for display by inserting portions of the selected template into the tag*
- *And has the advantage of:*
    - *Enabling the same process control system to be used by users in various countries or by users who are proficient in various languages, without the need to stop the process control system*
    - *Saving time when localising a process control system*

24 Whilst Mr Sessford agrees with the advantages proposed he describes the above suggestion as being somewhat convoluted and instead proposes that the contribution is as follows:

> *"Splitting the EDDL files" to enable application requests to be serviced with reduced risk of corruption, with more disparate localisation requirements, fewer shutdowns, and more simply, so that better control of a process plant can be achieved.*

25 I agree that splitting the EDDL files and localisation are key elements of the invention in this application. However I do not agree that there is necessarily a reduced risk of corruption or fewer shutdowns. The prior art system would seem to have a low risk of corruption for those users for whom the default language and data format are as they would expect; done properly the localisation of the prior art would not cause corruption and a risk of corruption remains as with any approach to coding. Furthermore it is not clear to me that the previous approach required shutdowns (for example updates could be delayed to be applied during shutdowns for other reasons) or that the invention never does (it is said that shutdowns are not required for locale template updates but the application is silent about shutdowns for EDDL file updates). As for providing better control of a process plant it seems to me that the essence of the control of the process is unchanged; indeed for those users who wish to utilise the default language/data format there would be no change. The application refers to inefficient or time-consuming updates as the main reason for the innovation. So what has is the inventor has really added to human knowledge? In my view the contribution relates to:

> *A method of responding to application requests to display a localised process control object without modifying device description files by selecting a device description file which includes a tag referencing localized information and a locale template including said localized information; processing the control object for display by inserting portions of the locale template into the tag in the device description file and accessing process control information from the process control architecture; and displaying the localized process control object such that updates to locale templates can be made more efficiently.*

<u>Steps 3 and 4: Ask whether it the contribution falls solely within the excluded subject matter and whether it is technical</u>

26 The examiner argues that the invention is no more than computer program as such. Mr Sessford disagrees instead proposing that the contribution provides for a better computer system and better control of the process plant and should therefore be found to be more than a computer program as such.

27 Claim 1 defines a computer program and it seems that the method of claim 2 and apparatus of claim 14 would ordinarily be implemented by a computer program as a matter of practical reality. I must therefore consider whether this computer program makes a relevant technical contribution.

28 With regards to the suggestion that the contribution provides for better control of the process plant Mr Sessford argues that the separation of the EDDL files means that shutdowns of the process control system to implement changes to the localised

templates are not required describing this as an inevitable consequence of splitting the EDDL files even though updating the EDDL or local templates is not claimed (although it is noted that if this proved to be pivotal, then the applicant would be willing to amend the claimed invention to refer to the updating). As I state above in the discussion of the contribution it is not clear to me that the previous approach required shutdowns or that the invention never does. For example updates could be scheduled to be applied during shutdowns for other reasons and whilst the application states that shutdowns are not required for locale template updates it is silent about shutdowns for EDDL updates. I am not persuaded by this line of argument that the necessary technical contribution is present. Furthermore amending the claims to refer to the updating would not change my opinion on this.

29 The invention is also said to allow more users to have access to useable, localised, applications and thereby improve access to the interface which enables monitoring and control of the process plant. This is said to lead to an improved process plant in a manner which is visible outside of the computer system in the operation of the plant itself. I queried this point at the hearing and Mr Sessford clarified that the contribution reduced the chances of user error arising from users operating a process control system with process control objects presented in something other than their first language and/or expected data format. I acknowledge the potential for user error exists when a person is not working in their preferred language; however this an administrative or health and safety issue, not a technical one. The contribution allows the user to display a process object in their chosen language but it does not directly give rise to a technical effect in the usability or reduce errors in the system. Furthermore there is no effect/change in the usability system or reduction in errors for those users who do not require a different language and data format. I do not find this argument persuasive that there is a technical effect.

30 The arguments then moved on to whether the contribution provides for a better computer system with consideration of what is meant by the phrase “architecture of the computer” from signpost (ii) from *AT&T*. The examiner proposes that this means that a change made to the architecture of a computer will produce an effect irrespective of the data being processed or the particular application being run and that this therefore refers to the specification of the computer at the most basic level including the system design, the embedded programming language of the CPU and the microarchitecture. Mr Sessford disagrees with aspects of this stating that the phrase has its origin in case law, in particular the EPO Technical Board of Appeal decision in *T6/83,* and that the intention was not to limit the definition to the definition to the most basic level of the computer as the examiner suggested.

31 The skeleton arguments quote several passages from *T6/83*, *T115/85*, *Aerotel* and *Symbian* and discuss the invention in *Symbian* at length to conclude that the case law does not requires a program to have a benefit to all programs operating on the computer. Rather, it is said that, if the potential benefit is across a sufficiently large swathe of the programs which operate on the computer that the contribution can be classed as a benefit to the computer (or computer system) as a whole. He also says that from the above cases that the level at which the invention is provided is less important than the contribution it provides. I would not disagree with any of these general statements.

32 Following this it was proposed that the invention services a range of applications, potentially from a variety of suppliers, concerned with process control and that EDDL files are files which enable the information from the process control equipment to be understood and presented to the user (drawing analogy to the invention in T115/85). Furthermore it is said that if the EDDL file were a DLL file at the runtime services layer then there would be little doubt that the invention would be “on all fours" with the invention in *Symbian* and the same conclusions apply. However EDDL files are not DLL files. At the hearing I questioned Mr Sessford about this and he expressed caution about stretching the analogy to Symbian too far but that the invention in that case and before me operate with similar functionality. The purpose of the invention in Symbian was to overcome a problem of incompatibility in the operation of new functions added to a dynamic link library (DLL) caused by the prior art link-by-ordinal system. The solution in *Symbian* enabled correct calling of DLL functions on the computer; whilst there is some similarity to the present invention there are also considerable differences such that I do not find this analogy persuasive of there being a relevant technical effect in this case.

33 The skeleton arguments go on to propose that the contribution sits at a level beneath the process control applications and therefore is at an architectural level and which provides a better computer. They also conclude that the invention provides a user with information about the operation of the process control system and process plant; which is said to be fundamentally technical and that therefore the contribution is not excluded due to it meeting of the second and fourth of the *AT&T* Signposts.

34 In my view the contribution does not operate at the level of the architecture of the computer and the second *AT&T* signpost does not assist Mr Sessford. The contribution is part of a suite of files which make up the process control system including applications which, in embodiments, are provided within a web browser with EDDL files and locale templates provided as XSLT and/or XML files for conversion into HTML files to display process control objects within the web browser. Whilst these files might notionally be regarded as being at a lower level than the application within the web browser it does not follow that they are at the level of the architecture of the computer or process control system; they remain above that level as elements of web browser code.

35 For the same reasons, to my mind, the provision of separate EDDL files and locale templates are aspects of a better process control program rather than a better computer or process control per se. The functional aspects of EDDL files that enable the information from the process control equipment to be presented to the user are unchanged, instead it is the language phrases and/or formats of data fields are extracted and placed in a separate file. The fourth *AT&T* signpost also does not assist Mr Sessford.

36 The problems with inefficient and/or time consuming updating language phrases and/or formats of data fields concern the customisation of a suite of process control applications to a given locale and it is this rather than the computer that operate in a new way. The third and fifth *AT&T* signposts also do not suggest that the contribution provides for a technical effect.

37 As a final thought in the skeleton arguments and at the hearing Mr Sessford suggested that the invention provides easier programming in the sense discussed in

HTC v Apple, highlighting paragraphs [52] and [58] in particular, because different languages can be supported without changing core code. Whilst the process control applications might more easily be customised for any given locale as a result of the invention it does not follow that the computer is easier to program; the application is easier to customise. The invention in *HTC v Apple* facilitates easier programming to deal with multiple touches in multi-touch devices; an altogether different problem for programmers. I do not find this argument persuasive of there being a technical effect.

38 Taking a step back and considering the contribution as a whole splitting a computer program into two programs with tags to cross-reference between these programs doesn't provide a technical effect; there needs to be something more. That the programs are part of a process control system is not enough, per se, to give rise to the needed technical effect. The programs present process control objects to users with localisation of language phrases and data formats; whilst the separation of these details from other aspects of the code could be regarded as a neat solution which is better, in some ways, than the single program it is a better computer program, nothing more.

39 In conclusion I therefore find that the invention defined by the independent claims of the main request are excluded by Section 1(2) of the Act as a computer program as such. I have also considered the dependent claims and cannot identify any features which would alter this conclusion.

Application of the Aerotel approach – auxiliary request

40 The independent claims of the auxiliary request are amended to recite that the locale template is also selected based on a device type such that the template is configured for the screen size of the device type. The resulting claims are still clear and no special construction is required of any of the words or phrases. The skeleton arguments submit that the contribution may be defined as:

> *Splitting the EDDL files to enable application requests to be serviced with an object tailored for the screen size of the requesting device, with reduced risk of corruption, with more disparate localisation requirements, fewer shutdowns, and more simply, so that better control of a process plant can be achieved.*

41 However, for the same reasons as above, in my view the contribution relates to:

> *A method of responding to application requests to display a localised process control object without modifying device description files by selecting a device description file which includes a tag referencing localized information and a locale template including said localized information <u>for a screen size of a requesting device type</u>; processing the control object for display by inserting portions of the locale template into the tag in the device description file and accessing process control information from the process control architecture; and displaying the localized process control object such that updates to locale templates can be made more efficiently..*

42 The skeleton arguments propose that, in addition to the arguments above, the management of the screen sizes in a multi-device-type environment is a complex

technical process. And that such management is typically undertaken, in part, by the operating system level components of the computer system. As the claimed invention is servicing requests from applications on multiple different devices with different screen sizes the contribution is said to be outside of the exclusions and technical also satisfying the second and fourth *AT&T* signposts.

43 In my view generating a display for a relatively small viewing area for objects displayed on a wireless device and a display for a relatively large viewing area for the same objects displayed by a workstation is not, inherently, a complex technical process. Whilst this is typically undertaken, in part, by the operating system level components in embodiments of this application it is provided for by the XSLT and/or XML EDDL files and locale template files which, as above, are converted to HTML for display in a web browser. Therefore the contribution is not at the level of the architecture of the computer or process control system and the second *AT&T* signpost is not met. The added feature concerns a further aspect of a better process control program rather than a better computer or process control system per se. In addition to providing for language phrases and/or formats of data fields better suited to some users there is also provided a better utilisation of available screen area for some devices but this is not a better computer per se and the fourth *AT&T* signpost is not met.

44 In conclusion I therefore find that the invention defined by the independent claims of the auxiliary request are excluded by Section 1(2) of the Act as a computer program as such. The dependent claims are the same as the main request and therefore it follows that they do not contain any features which would alter this conclusion.

Decision

45 I have found that the contribution made by the invention defined by the claims of each of the main request and the auxiliary request falls solely in matter excluded from patentability by virtue of Section 1(2) of the Act as a program for a computer as such. I therefore refuse this application under Section 18(3).

Appeal

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

Mrs S E Chalmers

Deputy Director, acting for the Comptroller