INTELLECTUAL PROPERTY OFFICE

BL O/256/10

21 July 2010

PATENTS ACT 1977

APPLICANT Fisher-Rosemount Systems Inc.

ISSUE Whether patent application number GB0620326.9 complies with Section 1(2)

HEARING OFFICER Peter Slater

DECISION

Introduction

1 Patent application GB0620326.9 entitled "Graphic display configuration framework for unified process control" was filed in the name of Fisher-Rosemount Systems on 4 May 2005. The application is derived from the corresponding PCT application published as WO2005/107409 on 17 November 2005, claiming a priority date of 4 May 2004 from an earlier US application. The application was then republished on 21 February 2007 as GB2429389.

2 The examiner has maintained throughout an objection that the invention claimed in this application is excluded from patentability as it relates to the presentation of information and a computer program as such under section 1(2) of the Patents Act 1977. The applicant has not been able to overcome this objection, despite amendments to the application.

3 The matter therefore came before me at a hearing on 25 May 2010 where the applicant was represented by Dr Alex Lockey of Forrester Ketley & Co. The examiner Joseph Mitchell was also present.

The Invention

4 The invention relates to the creation of graphical user interfaces and displays within a process control system. A typical process control system, for example, as used in a chemical or petroleum processing plant consists of a plurality of user workstations executing various functional applications required to control, monitor and maintain the operation of the system, and a number of process controllers connected to one or more field devices such as valves, switches and sensors. The process controllers are arranged to receive data from the field devices and to exchange data with one or more of the functional applications resident on the user workstations.

5 Each workstation provides a unique display or graphical representation of the operating status of the control system or devices within the plant appropriate to the user of that workstation and the function of the application running upon it. These displays vary from user-to-user e.g. the display required by a control engineer to reconfigure and develop new control modules will invariably be different to that required by a maintenance engineer who is more interested in the current operating status of devices within the plant. Various graphical editors have been used in the past to generate the appropriate display for a particular user. However, the independent creation of multiple displays in this way, is both time consuming, prone to human error, and has resulted in a significant duplication of effort on the part of the user, where displays are in fact depicting or modeling the same sections of the plant or the same hardware within the plant. Furthermore, this has resulted in the creation of displays having an inconsistent “look-and-feel”, and which are often confusing to the user.

6 Once created, the displays which contain various graphical elements depicting the status and/or operation of individual devices or hardware within the plant must be configured. This requires the user to manually create links between the graphical elements and their associated devices to enable them to exchange data which can then be used to provide information to the user via the display. These links are then stored in databases associated with the various workstations and applications. However, this has resulted in the creation of duplicate databases containing identical links to the same devices for different displays.

7 The invention itself provides an integrated graphical user interface which includes a common graphical display editor that can be used to create common graphical elements or objects representing various sections of the plant and individual devices within the plant. These graphical elements are then stored in a centralised “object” database which can also be used to store information linking the various elements to their corresponding hardware devices within the plant. Individual displays appropriate to the user can then be created at their own workstations using combinations of the graphical elements stored in the object database to build up a picture of the plant including the various links required to establish connections between the elements and their corresponding devices.

8 The most recent set of claims were filed on 11 March 2010 and comprise two independent claims relating to a process control system (claim 1) and a method of implementing a user interface for use in a process control system (claim 19). The wording of the claims is as follows:

> *1. A process control system, comprising a plurality of workstations, and a graphical support layer, the graphical support layer comprising:*
>
> *a graphic object database, and*
>
> *an integrated graphical user interface configuration system, for operation on at least a first one of a plurality of workstations, the graphical user interface configuration system comprising:*
>
> *a graphical element configuration system for creating graphical elements, each graphical element including interface graphics and separate interface functions associated with performing graphical user interface functions in a process plant, wherein the graphical elements are stored in the graphic object database,*
>
> *an interface to two or more operations, maintenance, configuration, simulation or management functional applications within the process plant, wherein the interface provides the same graphical element to each of the two or more of the functional applications for use in performing graphical user interface functions for each of two or more respective operations, maintenance, configuration, simulation or management functions in the process plant,*
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> *wherein two or more functional applications providing real-time display use the same graphical element to thereby provide graphical user interface functions associated with the operations, maintenance, configuration, simulation or management functions on at least a further one of the plurality of workstations.*

> *19. A method to be implemented in providing user interface displays for use in a process control system, comprising:*
>
> *providing a graphic object database,*
>
> *providing a common graphical element stored in a graphic object database, for use in graphical displays for two or more operations, maintenance, configuration, simulation or management user interface applications being implemented on multiple workstations of the control system and providing real-time display using the common graphical element in each of the two or more operations, maintenance, configuration, simulation or management user interface applications,*
>
> *providing tracking functions for tracking which graphical elements are used on which workstations in the control system, and*
>
> *providing real-time interfacing functions for operation, control and maintenance personnel using the common graphical element on the different workstations in the system.*

The Law

9 The examiner has raised an objection under section 1(2) of the Patents Act 1977 that the invention is not patentable because it relates to the presentation of information and a program for a computer as such; the 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)* ***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.*

10 As explained in the notice published by the UK Intellectual Property Office on 8 December 2008[1], the starting point for determining whether an invention falls within the exclusions of section 1(2) is the judgment of the Court of Appeal in *Aerotel/Macrossan*[2].

11 The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian Ltd's Application*[3]. *Symbian* arose under the computer program exclusion, but as with its previous decision in *Aerotel,* the Court gave general guidance on section 1(2). Although the Court approached the question of excluded matter primarily on the basis of whether there was a technical contribution, it nevertheless (at paragraph 59) considered its conclusion in the light of the *Aerotel* approach. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*[4] which rested on whether the contribution was technical; and that any differences in the two approaches should affect neither the applicable principles nor the outcome in any particular case.

12 Subject to the clarification provided by *Symbian*, it is therefore still appropriate for me, and Dr Lockey did not argue otherwise, to proceed on the basis of the four-step approach explained at paragraphs 40-48 of *Aerotel/Macrossan* namely:

1) Properly construe the claim

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[1] http://www.ipo.gov.uk/pro-types/pro-patent/p-law/p-pn/p-pn-computer.htm
[2] *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7
[3] *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1
[4] *Merrill Lynch's Application* [1989] RPC 561

2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution).

3) Ask whether it falls solely within the excluded matter, which (see paragraph 45) is merely an expression of the "as such" qualification of section 1(2).

4) If the third step has not covered it, check whether the actual or alleged contribution is actually technical.

13 The operation of this test is explained at paragraphs 40-48 of the decision. 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 46 explains that the fourth step of checking whether the contribution is technical may not be necessary because the third step should have covered the point.

14 I will deal with the arguments put forward by Dr Lockey as I apply the test set out in *Aerotel/Macrossan* to the present case.

Construing the claims

15 The first step of the test is to construe the claims. I do not think this presents any real problems since both the applicant and the examiner appear to agree as to the meaning of the claims.

Identify the actual contribution

16 For the second step, it is necessary to identify the contribution made by the invention. Paragraph 43 of *Aerotel/Macrossan* explains that this is to be determined by asking what it is - as a matter of substance not form - that the invention has really added to human knowledge having regard to the problem to be solved, how the invention works and what its advantages are.

17 Dr Lockey argues that the contribution is a new and improved process control system comprising an integrated graphical user interface capable of creating common graphical elements which are then stored in an object database and which can be used to create graphical displays for two or more functional applications on multiple workstations, the graphical objects being bound to physical devices within the plant. This removes the need for the user to reconfigure the display, to manually create links between the graphical elements and their associated devices.

18 Whilst I am prepared to accept that the contribution provides a new arrangement for creating and configuring displays, I am not convinced that it extends to the process control system which itself seems entirely conventional in terms of its hardware, nor do I think there is any contribution to be had in terms of improvements to the operation of the system.

19 The contribution to my mind lies in a new integrated graphical user interface for creating and configuring displays on multiple workstations and in the specific way

in which the interface is used to create common graphical elements which are stored centrally in an object database, and which can then be used to create appropriate displays on individual workstations, the graphical elements including the necessary information required to link them to their corresponding physical devices within the plant, thus removing the need for the user to manually add the necessary linkage when creating the display. This means that the displays can be created more quickly, are less prone to human error and a degree of consistency in the look-and-feel of the displays themselves is provided.

Does the contribution fall solely within excluded subject matter? Is the contribution technical in nature?

20 Dr Lockey argues that that because the contribution includes a new process control system it is considered to be more than a computer program as such. He also points out that contribution is not limited purely to providing a particular display, but includes the steps of creating, storing and implementing a graphical user interface across multiple workstations, and that the contribution does not relate purely to the display of information, as such, and instead lies in the automation, and centralization, and distribution of graphical user interfaces within a process control system.

21 As I have said earlier, it is clear to me that the contribution does not lie in a new process control system, as the hardware and its arrangement is entirely conventional, nor does it reside in a new or better way of controlling the process.

22 There is no doubt in my mind that the contribution requires a computer program for its implementation. However, the mere fact that the invention is effected in software does not mean that it should be immediately excluded as a computer program as such. What matters is whether or not the program provides a technical contribution.

23 I have already found that the contribution made by the invention resides in a new integrated graphical user interface for creating and configuring displays on multiple workstations and in the specific way in which the interface is used to create common graphical elements which are stored centrally in an object database, effectively creating a “library” of predefined graphical elements which can then be used to create appropriate displays on individual workstations. This means that the displays can be created more quickly, and are less prone to human error. The displays themselves are technically no better than those which would previously have been created manually by the user and the process by which they have been created does not involve a technical contribution. The mere association of graphical elements to devices within the plant would also not appear to convey the necessary technical contribution. Furthermore, the fact that the displays are provided with a degree of consistency in their look-and-feel is not considered to be technical in nature. There is no suggestion that the control system hardware or its arrangement is anything other than conventional. Nor as I have discussed does the invention have any technical effect on the control process itself.

24 What the applicant has created is a new program, albeit a very clever one, for developing and configuring a particular type of graphical user interface in a

particular way, and I can see not technical contribution associated with that program.

25 Having considered all the evidence made available to me, and all the arguments put to me at the hearing, I do not consider the invention to provide a technical contribution, and as such it would seem to fall squarely within the computer program exemption of section 1(2)(c).

26 The examiner has also argued that the invention is excluded on the basis that it relates to the mere presentation of information. However, having found the invention to be excluded as a computer program, I have no need to decide this issue.

Conclusion

27 In the light of my findings above, I conclude that the invention as claimed is excluded under section 1(2) because it relates to a computer program as such. Having read the specification I do not think that any saving amendment is possible. I therefore refuse the application under section 18(3).

Appeal

28 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any Appeal must be lodged within 28 days of the receipt of this decision.

P Slater
Deputy Director acting for the Comptroller