



**PATENTS ACT 1977**

APPLICANT                      Fisher-Rosemount Systems Inc.

ISSUE                              Whether patent application number  
GB0621081.9 complies with Section  
1(2)

HEARING OFFICER              Peter Slater

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**DECISION**

**Introduction**

- 1      Patent application GB0621081.9 entitled “Integrated graphical runtime interface for process control systems” was filed in the name of Fisher-Rosemount Systems on 4 May 2005. The application is derived from the corresponding PCT application published as WO2005/109125 on 17 November 2005, claiming a priority date of 4 May 2004 from an earlier US application. The application was then republished on 28 March 2007 as GB2430598.
- 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 a method of creating and configuring displays in 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 operator 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 operator 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. Unfortunately, this often results in the creation of inconsistent displays throughout the system.
- 6 The invention provides a unique “graphical runtime interface” which can be used on a single workstation to create and configure display panels more specifically to define the information to be displayed in various panels, to control the layout and scale of the panels which can then be transferred across the network to other workstations ensuring the various displays are consistent. The information displayed on individual workstations is controlled in accordance with content information generated by the interface and associated runtime applications. In addition, the graphical runtime interface includes a runtime workspace application which sits between the operator and the various functional or runtime applications resident on the workstation, effectively encapsulating them and preventing the operator from inadvertently executing commands which may affect their operation or that of the underlying operating system. The application does this by disabling the operating systems system keys, shortcuts or combinations of other keys on the keyboard which previously would have invoked specific software functions. For example, in a Windows™ based operating environment, the runtime workspace application may disable access to the Windows keyboard shortcuts including, for example, Run Dialog (WinKey+R), Minimise all (WinKey+M), or switch to another application (Alt-tab) etc. This is said to provide a more robust, consistent and reliable process control system.
- 7 The most recent set of claims were filed on 4 March 2010 and comprise three independent claims relating to a method of displaying process control information in a process control system (claim 1), an associated system for displaying process control information (claim 6) and a machine readable medium carrying instruction for carrying out said method (claim 11). For the purpose of this decision it is only necessary for me to recite the first independent claim:

*1. A method of displaying process control information via plurality of operator stations in a process control environment, the plurality of operator stations including a first operator station having a first graphical user interface and a second operator station having a second graphical user interface, the method comprising:*

*instantiating a runtime workspace application to operatively interpose between an operating system of the first operator station and a user;*

*using the runtime workspace application to:*

*receive from the user, via the first operator station, a panel display layout;*

*proliferate the received panel display layout to each of the plurality of operator stations;*

*display a plurality of panels in accordance with the received panel display layout consistently thereafter, each of the plurality of panels associated with a corresponding one of a plurality of runtime applications, via each of the first graphical user interface and the second graphical user interface;*

*determine a content category associated with a portion of the process control information associated with a runtime process control application;*

*assign the portion of the process control information to at least one of the plurality of panels based on the content category associated with the portion of the process control information; and*

*display the portion of the process control information associated with the runtime process control application in the at least one of the plurality of panels via each of the first graphical user interface and the second graphical user interface;*

*wherein the runtime workspace application is configured to concurrently display, in a framework of the runtime workspace application, the plurality of panels.*

8 Additionally, as claimed in claims 2, 7 and 12, the runtime workspace application can be configured to prevent user inputs from affecting the operating system of the workstations, providing a more robust, consistent and reliable process control system as discussed in paragraph 26 of the specification. For example, the wording of claim 2 is as follows:

*2. A method as defined in claim 1, further comprising preventing via the runtime workspace application a particular user input to the first operator station associated with the runtime application from affecting the operating system of the first operator station.*

## 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<sup>1</sup>, 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*<sup>2</sup>.
- 11 The interpretation of section 1(2) has been considered by the Court of Appeal in *Symbian Ltd's Application*<sup>3</sup>. *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*<sup>4</sup> 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. But the *Symbian* judgment does make it clear, that in deciding whether an invention is excluded, one must ask does it make a technical contribution? If it does then it is not excluded.
- 12 Subject to the clarification provided by *Symbian*, it is therefore still appropriate for me, 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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<sup>1</sup> <http://www.ipo.gov.uk/pro-types/pro-patent/p-law/p-pn/p-pn-computer.htm>

<sup>2</sup> *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] R

<sup>3</sup> *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1

<sup>4</sup> *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.

### **Construing the claims**

- 14 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**

- 15 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.
- 16 Dr Lockey argues that the contribution is a new process control system having a plurality of workstations with a plurality of runtime process control applications running thereon, in which each of the workstations has a runtime work space application interposed between the operator and the runtime process control applications, the runtime workspace applications being configurable over the network to associate panels within the display with the specific runtime applications running below or encapsulated within the runtime workspace and optionally to moderate or limit user input to the operating system of each of the workstations.
- 17 Whilst I am prepared to accept that the contribution includes an arrangement in which a so called “runtime workspace” and associated applications are used to create and configure displays in a process control system and more specifically to define the information to be displayed in various panels across a number of workstations, 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.

- 18 Dr Lockey also includes within his definition of the contribution the optional feature by which the user's input to the operating system is limited. However, this aspect does not currently appear in the independent claims but is the subject of dependant claims 2, 7 and 12. Be that as it may, this feature could perhaps be added to the independent claims by way of amendment and for the purposes of determining whether a patentable invention could be obtained from this application I am prepared to accept that the alleged contribution includes this step.
- 19 That said, the contribution to my mind lies in a new graphical runtime interface which can be used on a single workstation to create and configure display panels more specifically to define the information to be displayed in various panels, to control the layout and scale of the panels which can then be transferred across the network to other workstations ensuring the various displays are consistent. Additionally, the interface provides a runtime workspace application which sits between the operator and the various functional or runtime applications resident on the workstation, effectively encapsulating them and preventing the operator from inadvertently executing commands which may affect their operation or that of the underlying operating system. This is said to provide a more robust, consistent and reliable process control system.

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

- 20 Dr Lockey argues that the invention as claimed provides a new network of computer workstations which work differently at an architectural level and which improve the reliability of the system as a whole. The contribution is therefore more than the mere presentation of information or a computer program as such.
- 21 In his skeleton submitted shortly before the hearing on 24 May 2010, Dr Lockey sets out his arguments as follows:

*“As set out in paragraph 26, the runtime workspace used by the integrated graphical runtime interface provides a reliable robust environment in which runtime applications can be sited and provides a secure environment for executing runtime applications by preventing users from compromising the operation of the runtime applications or damaging the data therewith. In addition the system also addresses the problem discussed in the background of providing consistent displays across different control applications and workstations within the network.*

*As shown in figure 3, the claimed configuration effectively amounts to providing a different layer in the software stack on each workstation. The runtime workspace overlies the runtime applications. As specified in paragraph 42, the runtime applications are sited in or encapsulated by the runtime workspace to provide an integrated runtime display which may contain information for one or more of the applications 302. The runtime workspace 304 is configured to automatically arrange and scale a plurality of panels each of which may contain information relating to one of the applications 302 or services 306.*

*In addition, as is apparent from the claim, the runtime workspace environment does not operate in isolation. As claimed, and discussed in, for example, paragraph 63, the display layout of the selection of the types of panels and the association or assignment of the runtime applications 302 to specific panels can be proliferated throughout the process control system.*

*Additionally, as claimed in claims 2, 7 and 12, the runtime workspace application can prevent user inputs from affecting the operating system of the workstations thus providing a robust, consistent and reliable process control system as a whole as discussed in paragraph 26.*

*It is submitted that this is more than mere presentation of information, as, contrary to the examiner's assertion, the invention does not purely relate to how display panels on a workstation are arranged. Similarly, it is submitted that the invention is more than just a computer program as such, relating as it does to arguably a new software architecture on network workstations in a process control network and the functional effect of that runtime workspace. Accordingly, as the invention as claimed does not fall within any of the exclusions, it is submitted that the invention is allowable. Finally, it is noted that the invention is clearly technical relating as it does to a process control system and network”*

- 22 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.
- 23 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.
- 24 I have already found that the contribution made by the invention resides in a new graphical runtime interface which can be used on a single workstation to create and configure display panels which can then be transferred across the network to other workstations ensuring the various displays are consistent. In Addition, the interface provides a runtime workspace application which may be used to prevent the operator from inadvertently executing commands which may affect the operation of the underlying operating system, and which allegedly provides a more robust, consistent and reliable process control system. However, I do not think the displays or the way in which they are created or configured involves a technical contribution.
- 25 Furthermore, whilst the runtime workspace application may provide a degree of isolation between the operator and the underlying operating system, it does this by disabling the operating systems system keys, shortcuts or combinations of other keys on the keyboard which previously would have invoked specific software functions. There is no suggestion that the underlying program code or architecture is modified in any way which would provide a technical contribution nor does the operator workstation operate in anything other than a conventional manner. There is also 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. As a whole, I can see no technical contribution to save the invention from exclusion as a computer program.

- 26 What the applicant has done is to create a new computer program, albeit a clever one, which is capable of configuring displays across a network and which prevents the operator from invoking functions by accidentally pressing keys on the keyboard. It does this not at a technical level but by disabling keystrokes and/or combinations of keystrokes. I consider this to be nothing more than an advance in the programming of the workstation, and can find no technical contribution here.
- 27 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).
- 28 The examiner has also argued that the invention is excluded on the basis that it relates to the mere presentation of information. Having found the invention to be excluded as a computer program, I have no need to decide this issue here. However, I would say that the independent claims as they are currently worded includes nothing to suggest that the runtime workspace application does anything other than provide a new way of creating and configuring displays for transmission about a process control system, and includes nothing to suggest that the invention provides any means for limiting access of the operator to the operating system or preventing the operator from inadvertently executing commands which may affect the underlying system. As such, it would seem to suggest that the claims, as they currently stand, may also be excluded as relating to nothing more than the mere presentation of information. However, the inclusion of this latter feature would seem sufficient to avoid exclusion under section 1(2)(d).

### **Conclusion**

- 29 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**

- 30 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