



**PATENTS ACT 1977**

APPLICANT                      Fisher-Rosemount Systems, Inc

ISSUE                              Whether patent application numbers  
                                         GB0419580.6, GB0419583.0,  
                                         GB0724070.8 & GB0724072.4 comply  
                                         with section 1(2)

HEARING OFFICER                      A Bartlett

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**DECISION**

**Introduction**

- 1            This decision concerns the issue of whether the inventions defined in the above 4 patent applications relate to excluded matter.
- 2            Two of the applications, GB 0419580.6 and GB 0419583.0, were filed on 3 September 2004 and have a claimed priority date of 5 September 2003. Two divisional applications, GB 0724072.4 and GB 0724070.8, were divided out from GB 0419580.6 and GB 0419583.0 respectively on 10 December 2007. GB 0419580.6 and GB 0419583.0 were published as GB 2406392 A and GB 2405705 A respectively. GB 0724072.4 and GB 0724070.8 are yet to be published.
- 3            The examiner has maintained throughout that the claimed inventions in each of these applications is excluded from patentability as a program for a computer by section 1(2)(c) of the Patents Act 1977. He deferred consideration of any other matters pending resolution of that matter.
- 4            Given the similarity of the subject matter covered in the four applications it was agreed that they would all be considered together at a single hearing on 11 June 2008 at which the applicant was represented by Dr Alex Lockey of Forrester Ketley & Co. The examiner Mr Peter Keefe also attended.
- 5            After the hearing, and before the issue of this decision, the Court of Appeal handed down its judgment in the matter of *Symbian Limited* [2008] EWCA Civ 1066 ("*Symbian*"), and the applicant was invited to make further submissions if they so wished. In the outturn, they declined to make any further submissions.

Consequently this decision is based on the arguments raised at the hearing although I confirm that I have taken full account of the *Symbian* judgment in reaching my decision.

- 6 The four applications cover very similar subject matter which itself raises a separate issue that I will come back to later. However at the hearing it was agreed that in deciding the excluded matter issue, discussions could be focussed on one of the applications and that all 4 would stand or fall together in this respect. '580 was selected as that application.

### **The inventions**

- 7 All four applications relate to reconfiguring a process control system associated with a process plant. Whilst the specific nature of the plant being controlled is not critical, in the example given in the description the plant is a chemical or petroleum processing plant. When it is helpful in understanding the invention I will explain it in that context.

- 8 The process control system of the invention includes workstations which store and execute applications used to configure and monitor the process plant, a configuration database which stores configuration data generated at the workstations, and a number of process devices throughout the process plant. Each process device includes a process controller and is associated with a number of "field devices". Field devices may be any type of device throughout the process plant, such as sensors, valves, transmitters or positioners. Each process controller may store and execute a controller application that implements a control strategy, typically using function blocks. Function blocks may also be stored in and executed by the field devices themselves.

- 9 For the purpose of this decision I only consider it necessary to include the independent claims of '580, the latest versions of which read:

1. A process plant having a plurality of process devices communicatively connected by a network to implement a control strategy, each process device comprising a controller, an I/O device, a logic server or a field device, the plurality of process devices including a first process device and a second process device, the first process device adapted to implement a state machine function block used in the control strategy, the first process device comprising:
  - a user modifiable state machine configuration database including output configuration data indicative of values of at least some outputs of a plurality of outputs of the function block for each of at least some states of a plurality of states of a state machine to be implemented by the function block;
  - first logic having a first input to receive a signal from the second process entity, the first logic to change a current state of the state machine, if necessary, based, at least in part, on the signal from the second process entity; and
  - second logic having an interface coupled to the state machine configuration database and an input coupled to an output of the first logic, the second logic to retrieve, based on at least the current state, output configuration data associated with the current state from the configuration database and to generate the at least some outputs based, at least in part, on the retrieved output configuration data;wherein the at least some outputs affect the operation of one or more other process devices as part of implementing the control strategy.

12. A method of implementing a control strategy in a process plant having a workstation and a plurality of process devices being communicatively connected by a network each process device comprising a controller, an I/O device, a logic solver or a field device, a first of the process devices adapted to implement a state machine function block used in the control strategy, wherein the state machine function block includes logic coupled to a user modifiable state machine configuration database, the method comprising:

providing a graphical user interface via a display of the workstation to configure, at least in part, values of one or more outputs of the state machine function block in each state of a plurality of states as part of the control strategy;

receiving output configuration data via the graphical user interface;

storing the output configuration data in the user modifiable state machine configuration database on a first computer readable medium of the first process device;

receiving at the first process device a data signal from a second process device via the network;

providing the data signal as an input to the state machine function block; determining a next state of the state machine function block based on the input to the state machine function block;

setting a current state of the state machine to the next state;

utilizing the logic to retrieve output configuration data associated with the current state from the user modifiable state machine configuration database based on the current state;

utilizing the logic to generate at least one state machine function block output based, at least in part, on the retrieved output configuration data; and

using the at least one state machine function block output to affect operation of the second process device or another process device to thereby implement the control strategy.

## The Law and its interpretation

10 The relevant part of the Patents Act 1977 reads:

1.-(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say -

...

(d) the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A below;

and references in this Act to a patentable invention shall be construed accordingly.

(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 -

...

(c) a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;

...

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.

11 At the time of the hearing, the approach to be followed in deciding whether an invention is excluded was the 4 step test laid down by the Court of Appeal in *Aerote/Macrossan* namely:

1) Properly construe the claim

2) Identify the actual contribution

3) Ask whether it falls solely within the excluded matter

4) Check whether the contribution is actually technical in nature

- 12 In its judgment in *Symbian*, the Court of Appeal made it clear that in applying that test it is essential to ask specifically whether the invention makes a technical contribution although it does not matter whether that is done at step 3 or step 4. That is the test I shall apply in deciding the present issue.

## **Analysis**

### Construing the claims

- 13 The precise meaning of the claims was the subject of a good deal of discussion at the hearing. That meaning is not entirely clear which makes the task of construing the claims somewhat problematic. In particular,

the word “or” in the preamble of the claims means the content and functionality of the process devices is not clear

the inconsistent terminology between “process entity” and “process device” does not aid understanding and

there is a lack of clarity over the relationship between the state machine, the first and second logic and where the output of the first logic goes.

- 14 As a result of the discussion at the hearing and numerous readings of the description, I understand the invention to be a process plant having at least two process devices. The first process device comprises a configuration database containing data indicative of the output to be generated by the process device depending upon which state the state machine is currently in. The first process device receives an input signal from the second process device, which may affect the state of the state machine in the first process device. The first process device may then use the state of the state machine and respective data retrieved from the configuration database to generate output signals. The output signals affect the operation of other process devices in the process plant.

- 15 To set that in the context, in the example given on page 20, the controlled device is the burner in a process plant and the input is from a sensor indicating that the burner has gone out. If prior to that, the boiler was in its normal operating state, then the output of the sensor causes the state to change to “turn gas off” and an output signal from the database is generated to turn the gas off. From this “gas off” state the input to the controller would next cause the state machine to go to the “Vent” state and a control signal would be generated to open a vent and turn on a fan. Presumably, having reached this state, the continuing “burner out” signal causes no further changes as the routine is complete.

- 16 Whilst the claims undoubtedly need some clarification to make their intended meaning clearer, I will proceed on that basis for the purpose of this decision. Having done that, applying the remainder of the test is relatively straight forward.

### Identify the actual contribution

- 17 In my view, the contribution made by the invention of '580 is in the particular way that a control signal for a device in a process plant is generated in response to a current state of part of the system which can itself be changed in dependence on an input from a second device in the system.

### Does that contribution fall solely in excluded matter?

- 18 There is no suggestion anywhere in the specification that the hardware used to implement the invention is anything other than conventional and the invention therefore resides in what that hardware is programmed to do. That though does not mean that the invention is necessarily excluded as a program for a computer as such. Whilst, as I have said, the meaning of the claims is not entirely clear, I have no doubt that the program through which the invention is implemented is inexorably linked to the control of a process plant in dependence on certain inputs. The contribution I have identified is in my view clearly more than a computer program as such. The invention clearly makes a technical contribution

### Is the contribution technical in nature?

- 19 Given the above discussion, I have no doubt that the contribution is technical in nature and that the invention defined in the claims of GB0419580.6 is not excluded as a program for a computer as such.

### **The other applications**

- 20 As I have already said, the inventions defined in the claims of the remaining applications are very similar to that in '580 and my above finding applies equally to them: they also make a technical contribution and are similarly not excluded as a program for a computer.

### **Other issues**

- 21 The similarity of the various applications does though, as I have already indicated, raise a number of separate issues. '072 which is divided from '580 appears to be of identical scope to it other than it specifies that the configuration database comprises an array of elements. It seems to me that that falls entirely within the scope of the invention claimed in '580, the described embodiments of which employ such an array. Thus '072 appears to relate to the same invention as '580 contrary to section 18(5) and it seems unlikely that they will both be able to proceed to grant.
- 22 '583 defines a similar invention but which is concerned with transitions between states rather than simply the state that the state machine is currently in. The claims of that application are subject to much the same clarity problems as '580 which I have already discussed above and which will also need to be rectified before a patent can be granted for it.

23 '070 which is divided from '583 again includes additional detail as to the structure of the configuration database – this time in terms of a matrix. This again falls entirely within the scope of the claims of its parent application and is the way the invention of the parent is implemented in practice. Once again the claims of '583 and '070 seem to relate to the same invention contrary to s18(5) and it seems unlikely that both of these will be able to proceed to grant.

### **Conclusion**

24 I have found that all four of the applications relate to non-excluded subject matter but that the claims therein are in need of amendment so as to clearly define the invention.

25 I have therefore referred the applications back to the examiner to resolve the clarity issues and to complete his assessment of whether they comply with the remaining parts of the Act including novelty and inventive step (which were previously deferred). In doing that the issue of whether there is conflict between each of the parent applications and its respective divisional should also be addressed.

### **Appeal**

26 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days.

**A BARTLETT**

Deputy Director acting for the Comptroller