



12 January 2010

PATENTS ACT 1977

APPLICANT Fisher-Rosemount Systems, Inc.

ISSUE Whether patent application number
GB 0814628.4 complies with section 1(2)

HEARING OFFICER B Micklewright

DECISION

Introduction

- 1 This decision concerns whether the invention claimed in patent application GB 0814628.4 is excluded from patentability.
- 2 This application was lodged on 11 August 2008 and claimed divisional status from patent application GB 0621082.7 (“the parent application”). The request for divisional status was allowed and the application therefore has as its filing date 4 May 2005 and claims a priority date of 4 May 2004 from an earlier US application. It was published as GB 2449786 A.
- 3 The parent application also proceeded to a hearing which took place on 20 July 2007. The hearing officer, Mr. Peter Slater, refused the application because it related to a computer program as such. His decision was issued as BL O/228/09 on 30 July 2009 and is available on the Intellectual Property Office’s website at <http://www.ipo.gov.uk/p-challenge-decision-results.htm>. The claims which are now present in this divisional application were not considered by Mr. Slater.
- 4 After an initial examination report, further processing of this divisional application was put on hold until the decision was issued on the parent application. Following the issue of that decision the examiner issued a further examination report maintaining an objection that the claims were excluded from patentability because they related to a program for a computer as such. The applicant disagreed and requested a hearing. The matter therefore came before me at a hearing on 24 November 2009 at which the applicant was represented by its patent attorney Dr Alex Lockey. The examiner Mr Richard Corken also attended. In the skeleton filed by Dr Lockey the day before the hearing he proposed an alternative main claim. I will consider both versions of claim 1 in this decision.

The invention

5 Mr. Slater described in general terms the background to the invention in paragraphs 5 and 6 of his decision on the parent application:

5. The invention relates to a process control system and in particular to a method of accessing process control data, viewing and modifying that data and using the modified data to update control programs within the system. A typical process control system, for example, as used in a chemical or petroleum processing plant consists of a number of process controllers connected to an operator workstation and 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 user applications resident on the operator workstation.

6. During the operation of the process control system, it is often desirable for the operator to access process control data stored within the system, for example, on a process control server, to view, modify and update that data. Operators are often constrained in the way they can access the data by the functions which are made available via the user application. User applications can be customized to add additional functionality but this is a complex and expensive task, requiring the skills of an experienced software engineer to rewrite the systems software, to compile and to test it.

6 Paragraphs 7 and 8 of Mr. Slater's decision described the invention claimed in the parent application:

7. The invention describes a method by which the operator is able to develop and to add functionality to their own applications at any time without the need to rewrite or compile the control system software. This is achieved by use of a client/server data interface which uses object oriented programming techniques to enable the user application or client to exchange data with the process control server. The client can request data from the server which is converted from a data format unique to the server, a "*server schema*" into a "*client schema*", a format suitable for display at the operator's workstation. The operator can then modify or update the control data and transfer it back to the server where it is converted back into the server schema.

8. By virtue of the invention, the applicant has enabled what would otherwise be an incompatible user application to access process control data from the server by providing a mapping function for converting data from a server schema into a more generic client schema and vice versa.

7 The divisional application also relates to a method by which the operator is able to develop and add functionality to their own applications at any time without the need to rewrite or compile the control system software. The claims of the divisional application however focus more on the object-oriented programming techniques used rather than the details of the data conversion. A client object is

based on a pre-generated partial class and a user-generated partial class. The pre-generated partial class includes pre-generated class elements associated with accessing the process control data. The user-generated partial class is associated with the pre-generated partial class and has user-defined class elements that can access process control data via the pre-generated class elements. See figure 2 below for further details.

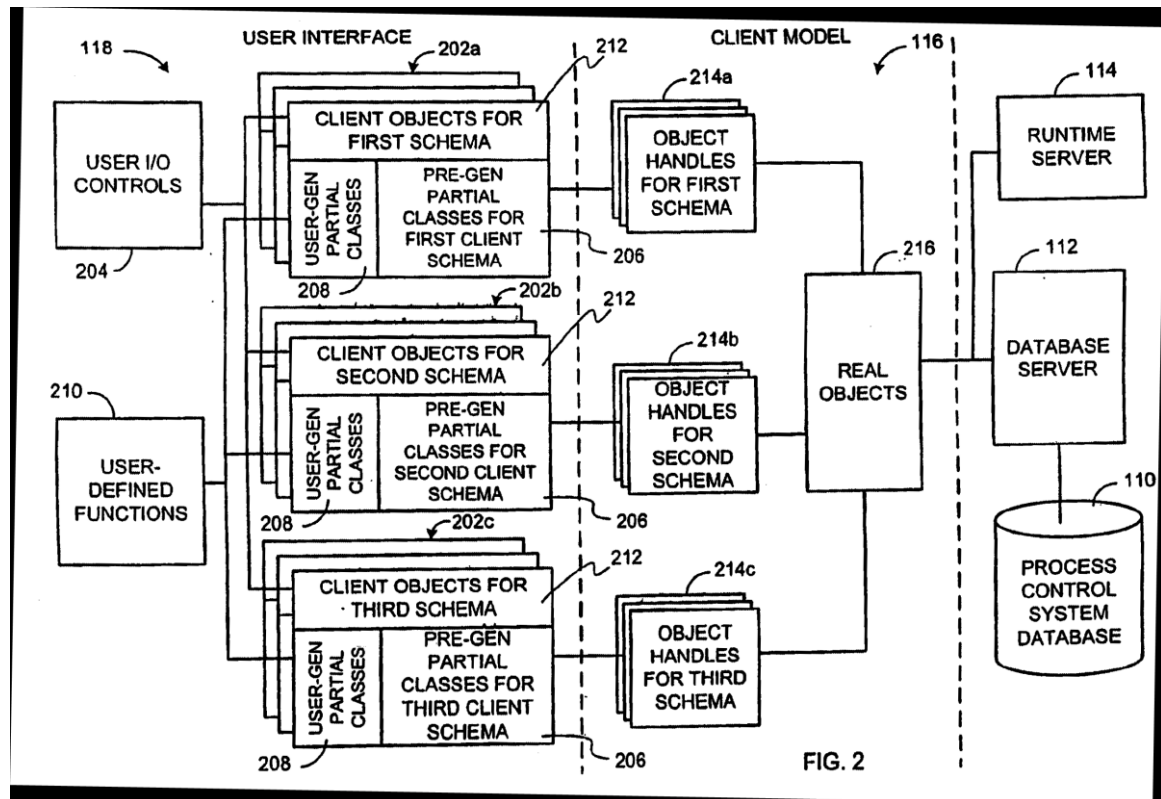


FIG. 2

8 Claim 1 is the only independent claim of the divisional application. The version examined by the examiner in his final examination report is:

1. A system for accessing process control data, comprising:
 - a pre-generated partial class that includes pre-generated class elements associated with accessing process control data;
 - a user-generated partial class associated with the pre-generated partial class and having user-defined class elements that can access process control data via the pre-generated class elements;
 - a user interface configured to instantiate a client object based on the pre-generated partial class and the user-generated partial class and configured to access process control data based on the pre-generated and user-defined class elements; and
 - a client model configured to load an object handle and a real object associated with the client object and communicate process control data between the client object and a server via the object handle and the real object.

9 Dr Lockey provided an alternative main claim in his skeleton filed the day before the hearing for consideration in the event that I found that the version of claim 1 presently on file was excluded. I will if necessary consider this alternative claim in this decision. It reads, with the additions made to the earlier version of the claim in bold, as follows:

1. A process control system having a process control machine and a client machine, the process control machine being communicatively coupled to control devices in a process control system,

the process control machine being operable to automate and manage the process control system in accordance with process control data,

the process control system further comprising a system for providing process control data, comprising:

a pre-generated partial class that includes pre-generated class elements associated with accessing process control data;

a user-generated partial class associated with the pre-generated partial class and having user-defined class elements that can access process control data via the pre-generated class elements;

a user interface configured to instantiate a client object based on the pre-generated partial class and the user-generated partial class and configured to access process control data based on the pre-generated and user-defined class elements; and

a client model configured to load an object handle and a real object associated with the client object and communicate process control data between the client object and a server via the object handle and the real object,

the client machine being operable to generate an output in accordance with the communicated process control data.

The law

- 10 Section 1(1)(d) of the Patents Act 1977 (“the Act”) states that a patent may be granted only for an invention in respect of which the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A. Section 1(2)(c) states that things which consist of “a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer” are not inventions for the purposes of the Act, but only to the extent that a patent or application for a patent relates to that thing as such.
- 11 There is a large amount of case law in relation to these provisions. The most significant recent judgments of the Court of Appeal on the matter are *Aerotel Ltd v Telco Holdings Ltd Ors Rev 1* [2007] RPC 7 and *Symbian Ltd’s Application* [2009] RPC 1. In *Aerotel* the Court of Appeal reviewed all the previous case law and specified the following four-step test as a methodology of determining

whether an invention was excluded from patentability under section 1(1)(d):

- (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.

- 12 In *Symbian* the Court of Appeal confirmed that the above test is intended to be equivalent to the prior case law test of “technical contribution”. In the present case I will therefore use the *Aerotel* test and ensure in my consideration of steps (3) and (4) that I determine whether the invention makes a technical contribution.

Assessment

Step (1): Properly construe the claims

- 13 Both versions of claim 1 present no construction problems.

Step (2): Identify the actual contribution

- 14 Dr Lockey submitted that the contribution made by claim 1 is a new process control system which makes use of partial classes to provide access to process control data. He emphasised that the claim was not to the use of partial classes *per se* and referred to two Office decisions on earlier Fisher-Rosemount applications which were allowed, namely BL O/148/07 and BL O/150/07.
- 15 The examiner initially identified the contribution as the use of partial classes, both pre-generated and user-generated, to instantiate an object which can then be used to communicate generic process control data. In a later examination report issued after the decision on the parent application had been issued he quoted the hearing officer’s determination of the contribution in the parent application and argued that the contribution made by the claims in the divisional application is a slightly narrower version of the contribution of the parent, i.e. by using partial classes and real objects and by providing more detail as to how these classes were used.
- 16 At the hearing I discussed with Dr Lockey the relationship between the invention claimed in the parent application and that claimed in the divisional application. The invention in the parent application related to mapping process control data from a first data layout associated with a first schema to a second data layout associated with a second schema. I asked Dr Lockey if the invention claimed in the divisional application relates to the detail of the client schema which is made up of the various partial classes and the way the partial classes interact, and the way the client object and the server object interact. Dr Lockey confirmed that this was correct. I am not convinced that the matter is quite as straightforward as this being a narrower version of the parent application. I will therefore determine the contribution made by claim 1 of the divisional application without reference to that of the parent application.

- 17 I will first consider the contribution made by the first version of claim 1. I should note at this point that the invention has not yet been searched. In my view the contribution relates to a system for enabling a user to access process control data. This is achieved by instantiating a client object based on pre-generated and user-generated partial classes. The user-generated partial class elements access the process control data via the pre-generated class elements. The client object has associated with it a real object which communicates process control data between a server and the client object via an object handle. Dr Lockey contends that the contribution relates to a new process control system. This does not however seem to me to be the case except to the extent that the means for accessing process control data is considered part of a process control system. The same process control data is used to control the same process plant. The only thing that is different is the way a user accesses the process control data.
- 18 I will now consider the contribution made by the alternative version of claim 1. This claim is directed towards a process control system rather than a system for accessing process control data. The process control system has a process control machine coupled to control devices in the process control system and a client machine. The process control machine automates and manages the process control system in accordance with process control data, the process control data being provided in accordance with the first version of claim 1. The client machine produces an output in accordance with this data.
- 19 Dr Lockey argued that the system could be considered a system used to provide monitoring of a process control system as it can retrieve real-time process control data. He then referred to the decision BL O/150/07 which was a Fisher-Rosemount application where excluded matter was at issue and in which the hearing officer found that a first version of claim 1 was excluded but an alternative version was not. The invention claimed in that application related to a process flow tracking system. The first version of the claim related to a process flow module which included interconnected objects representing different entities in the process plant and flow algorithms which interacted with the process flow module to perform flow analysis. The alternative version of claim 1 claimed a process control system with the features of the original claim 1, in which an output is generated. The hearing officer found that the alternative version of the claim was not excluded because it included control of the physical process.
- 20 Despite Dr Lockey's arguments to the contrary I am not convinced the same arguments apply in the present case. The invention does not include any direct manipulation or control of specific features or entities of the physical process that could be said to relate to monitoring of the process. Rather it sets out a general scheme for making it easier for a user to access process control data. The invention in BL O/150/07 related to actual manipulation of entities of the physical process. The present invention does not have such a function. Moreover the features added into the alternative version of claim 1 are all entirely standard features of process control systems such as those discussed in the discussion of the prior art at the beginning of the divisional application. They therefore cannot be said to contribute to the actual contribution made by the claim. It is therefore immaterial in this case as to whether the claim is directed towards a process control system or to a system for accessing process control data. Moreover the

fact that an output is generated does not add to the actual contribution. In BL O/150/07 the output related very specifically to the flow analysis. In the present case the output is non-specific and in fact all the claim says about this output is that it is “in accordance with the communicated process control data”. The substantive features of the claim, namely the use of pre-generated and user-generated partial classes to instantiate client objects associated with real objects to access process control data, are the same. I therefore conclude that the contributions made by both the first version of claim 1 and the alternative version of claim 1 are in substance the same.

Steps (3) and (4): Ask whether it falls solely within the excluded subject matter and check whether the actual or alleged contribution is technical in nature

- 21 The contribution made by claim 1 clearly lies in the field of computer programming. But is there anything in the contribution which takes the invention out of the computer program excluded field? In my view there is not. The invention lies in using specific (and known – partial classes are a well known programming technique) programming techniques to access process control data. It does not relate to control of the process plant itself, nor does it have any technical effect on any other process which is carried on outside the computer. Moreover there is no technical contribution to the operation of the computer itself. The computer does not operate in any new way, nor is it, as a matter of practical reality, a better computer in terms of speed, efficiency or reliability. Dr Lockey argued that a comparison with the invention in *Symbian’s Application* [2009] RPC 1 helped to demonstrate a technical contribution. In my view however *Symbian* does not help. In *Symbian* the invention related to a method of accessing data in a dynamic link library (DLL) in a computing device. The judge concluded that the invention made a technical contribution because it did not merely relate to a better program but as a matter of practical reality to a faster and more reliable computer because it solved “a technical problem lying with the computer itself”. The analogy does not in my view read through to the present case. In *Symbian* Lord Neuberger made it clear that each case must be determined in reference to its particular facts and features. Although at least the alternative claims are directed towards a better process control system, as a matter of practical reality the invention does not result in a better way of controlling a process but in a way of enabling a user to access process control data. The practical operation of the process control system is not directly affected, unlike in *Symbian* where the computer on a fundamental level was said to operate faster and more efficiently.
- 22 What the invention does as a matter of practical reality is to provide partial classes associated with process control data by which a user can access the data. It is an improvement to prior art techniques where the user would have to carry out considerable bespoke programming (see e.g. pages 2 and 3 of the description of the divisional application) whereas in the present invention the user need only create the user-generated partial classes which communicate with the pre-generated partial classes in order to access the process control data. Thus the problem to be solved is in reality a problem in the field of computer programming and the solution also lies entirely within that field. There is no technical contribution which takes the invention outside of the excluded field. The invention claimed in claim 1 therefore relates to a program for a computer as

such and is excluded from patentability.

- 23 The alternative version of claim 1 is similarly excluded from patentability as relating to a program for a computer as such. Although further elements of the process control system have been added and the client machine is now said to “generate an output” the claimed invention still does not make any contribution to a process outside the computer. There is no direct control of or analysis of a process control plant, as there was in BL O/150/07. Rather in the present case the invention relates to using a programming technique (partial classes) to access generic process control data. The problem and solution both remain entirely in the computer programming field and the claim makes no technical contribution. The alternative version of claim 1 is therefore also excluded from patentability as relating to a program for a computer as such.

Conclusion

- 24 In conclusion I have found that the invention claimed in patent application GB 0814628.4 relates to a program for a computer as such and is therefore excluded from patentability. I have also considered an alternative version of claim 1 and have found that the invention claimed in this claim also relates to a program for a computer as such and is thus also excluded from patentability. I have read the specification and do not consider that a saving amendment is possible. I therefore refuse the application.

Appeal

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

B MICKLEWRIGHT

Deputy Director acting for the Comptroller