

21 December 2012

PATENTS ACT 1977

APPLICANT Fisher-Rosemount Systems Inc.

ISSUE Whether patent application number
GB0914884.2 complies with Sections 1(2) and 76(2)

HEARING OFFICER Dr. S. Brown

DECISION**Introduction**

- 1 This decision concerns the issue of whether the invention claimed in patent application GB0914884.2 relates to non-excluded subject matter as required by section 1(2) of the Act, and whether the amended claims include added matter contrary to section 76(2) of the Act. It is entitled "Event synchronized reporting in process control systems" and was filed on 26th August 2009 with a priority date of 29th September 2008. The application was published as GB2463762 on 31st March 2010.
- 2 The examiner reported that the invention claimed in this application is excluded from patentability as a computer program and a method of doing business. Amended claims along with an additional set of claims marked 'First Auxiliary Request' were filed on 9th July 2012. The examiner maintained that both sets of claims were excluded from patentability for the above reasons, and further objected that they contained added matter.
- 3 The Attorney filed an amended specification along with skeleton arguments on 19th November 2012. The amendments correspond generally to the auxiliary request of 9th July 2012, with minor amendments. The Hearing was held before me on 23rd November 2012. The Applicants were represented by Mr. Russell Sessford and Mr. Nick Palmer of Forresters. Mr. Peter Middleton, acting as Hearing Assistant, Mr. Stephen Jennings, the examiner, and Mr. Martyn Jefferiss, observing, also attended.

The Invention

- 4 The original claims relate to a method of reporting synchronised events in a process control system. The claims currently proposed relate to a method of

controlling the operation of a process control plant using a report produced by such a method. I will discuss the significance of this difference below.

- 5 There are currently 36 claims in total, two of which are independent: claims 1 and 25. These amended claims read as follows:

Claim 1: *A method of controlling operation of a process control plant having a process control system, the method comprising:*

obtaining a synchronization parameter;

integrating, with historical process control data, events other than historical process control events and corresponding to the synchronization parameter by recording the events corresponding to the synchronization parameter in an event historian database of the process control system of the process control plant, the event historian database storing historical process control events corresponding to a physical or logical process control entity in the process control system;

extracting, from the event historian database of the process control system, first data for a first event corresponding to the synchronization parameter, the first event occurring over a first time interval;

extracting, from the event historian database, second data for a second event corresponding to the synchronization parameter, the second event occurring over a second time interval and wherein the first and the second time intervals are non-contiguous; and

generating an event synchronized report for the synchronization parameter, the event synchronized report including at least one synchronized value based on the first data, the second data, and historical process control data for a particular process control entity of the process control system, the historical process control data for the particular process control entity stored in a centralized database of the process control system;

providing the event synchronized report to an operator of the process control system; and

modifying operation of the process control plant based on the event synchronized report to enhance safety and/or efficiency of the process control plant.

Claim 25: *A process control plant including an event synchronized reporting system for use in the process control plant, the process control plant having a process control system, the event synchronized reporting system comprising:*

a computer having a processor and a memory;

a historian database accessible by the computer and storing process control historian data corresponding to a physical or logical process control entity in the process control system; and

an event synchronizer stored on the memory of the computer and adapted to be executed on the processor, wherein the event synchronizer is adapted to:

obtain a synchronization parameter, the synchronization parameter having instances of occurrence of a measurable time duration, wherein a first instance of occurrence of the synchronization parameter and a second instance of occurrence of the synchronization parameter are non-contiguous over time;

generate a first event corresponding to at least one of a start time and an end time of the first instance;

generate a second event corresponding to at least one of a start time and an end time of the second instance, the first event and the second event being events other than historical process control events;

integrate the first and the second events corresponding to the synchronization parameter with the process control historian data by storing the first and the second events in the historian database;

generate an event synchronized report for the synchronization parameter, the event synchronized report including at least one

synchronized value based on:

data associated with the first event,

data associated with the second event, and

historical data corresponding to a particular process control entity in the process control plant, the historical data corresponding to the particular process control entity generated during at least one of the first or the second instance of occurrence of the synchronization parameter; and

provide the event synchronized report to an operator of the process control system, such that the operation of the process control plant is modifiable based on the event synchronized report to enhance safety and/or efficiency of the process control plant.

- 6 Original claim 1 and original claim 19 (which corresponds to current claim 25) are also recited below:

Claim 1: *A method of reporting synchronized events in a process control system, comprising:*

obtaining a synchronization parameter;

extracting, from the event historian database of the process control system, first data for a first event corresponding to the synchronization parameter, the first event occurring over a first time interval;

extracting, from the event historian database, second data for a second event corresponding to the synchronization parameter, the second event occurring over a second time interval and wherein the first and the second time intervals are non-contiguous; and

generating an event synchronized report for the synchronization parameter, the event synchronized report including at least one synchronized value based on the first data and the second data.

Claim 19: An event synchronized reporting system for use in a process control plant having a process control system, the event synchronized reporting system comprising:

a computer having a processor and a memory;

a historian database accessible by the computer; and

an event synchronizer stored on the memory of the computer and adapted to be executed on the processor, wherein the event synchronizer is adapted to:

obtain a synchronization parameter,

the synchronization parameter being a parameter of the process control system and having instances of occurrence of a measurable time duration,

wherein a first instance of occurrence of the synchronization parameter and a second instance of occurrence of the synchronization parameter are non-contiguous over time;

generate a first event corresponding to at least one of a start time and an end time of the first instance;

generate a second event corresponding to at least one of a start time and an end time of the second instance;

record the first and the second events in the historian database;

generate an event synchronized report for the synchronization parameter, the event synchronized report including at least one synchronized value based on:

data associated with the first event,

data associated with the second event, and

historical data corresponding to a particular process control entity in the process control plant, the historical data generated during at least one of the first or the second instance of occurrence of the synchronization parameter.

- 7 An additional set of claims marked 'First Auxiliary Request' were also filed by the applicants. The claims of this set are identical to the method claims (i.e. claims 1-24) of the amended claims. The auxiliary request has no claim equivalent to claim 25, or indeed any other 'apparatus' claims.

Added matter

- 8 Section 76(2) of the Patents Act reads:

No amendment of an application for a patent shall be allowed under section 15A(6), 18(3) or 19(1) if it results in the application disclosing matter extending beyond that disclosed in the application as filed.

- 9 The examiner objected that the feature of modifying operation of the process control entity based on the report finds no basis in the specification as filed. He thus rejected what I have referred to above as the amended claims as containing added matter.
- 10 At the hearing, Mr. Sessford argued that it was common ground that prior art reports are used by operators to control the process plant. He argued that it was obvious to any reasonable reader that the operator would modify control of the process plant based on the reports – that was the whole point of producing the reports.
- 11 I agree with Mr. Sessford on this point. Whilst the specification does not explicitly state that the reports are used to control a process plant, nor spell out exactly how a report would be acted on, it is implicit that the reports of the invention – like those of the prior art – are produced for the purpose of improving the operation of a process plant. I also agree that a person skilled in the art of process control systems could readily determine how to modify the operation of a plant in response to such a report.
- 12 I conclude that the amended claims do not disclose matter extending beyond that disclosed in that application as filed. The rest of my decision is therefore based on the amended claims filed on 19th November 2012, of which claims 1 and 25 are recited above.

Excluded subject matter

- 13 Section 1(2) of the Patents Act reads:

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

- 14 In addition to the above statute there is also the case law established in the UK in *Aerotel/Macrossan*¹ and further elaborated in *AT&T/CVON*², which I am bound to follow. In *Aerotel* the Court of Appeal reviewed the case law on the interpretation of section 1(2) and approved a four-step test for the assessment of patentability, namely:
- 1) *Properly construe the claim*
 - 2) *Identify the actual (or alleged) contribution*
 - 3) *Ask whether it falls solely within the excluded matter*
 - 4) *Check whether the contribution is actually technical in nature.*
- 15 The operation of the test 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.

Application of the *Aerotel* test

Properly construe the claims

- 16 I agree with the examiner and the attorney that this step presents no difficulty. The claims relate to a method of operating a process plant by responding to information presented in reports. The method involves storing historical process control data and other data in a database, the other data corresponding to a 'synchronisation parameter'. The reports are produced by extracting from the database data for events over first and second non-contiguous time intervals corresponding to the synchronisation parameter.

Identify the contribution

- 17 In his reports, the examiner has argued that the contribution is no more than a method and system for generating reports in a process control plant environment. Regarding the auxiliary request, (which first added the limitation of '*modifying operation of a process control entity based on the event synchronised report to enhance safety and/or efficiency of the process control plant*'), he further argued that the contribution was still rooted in the storage and retrieval of historical data. While the invention made it easier to generate reports, reports containing exactly the same information could already be generated by a more laborious process. This much is acknowledged by the description.

¹ *Aerotel Ltd v Telco Holdings Ltd (and others) and Macrossan's Application* [2006] EWCA Civ 1371

² *AT&T Knowledge Ventures LP and CVON Innovations Limited* [2009] EWHC 343

- 18 Mr. Sessford did not dispute this last point, agreeing that the description does disclose that such reports can be generated by prior art processes. Nonetheless, he would still cast the contribution more widely. He argued that it was: *a method and system for generating reports showing correlations in process control data and non-process control data over non-contiguous periods, based on synchronisation parameters, so as to provide an operator with a new and improved data filtering system that is used to identify issues with the process plant and to modify the operation of the process plant accordingly to provide a better process plant.*
- 19 Mr. Sessford argued strongly that a better process plant, arising from modifying its operation based on the information in the reports, forms an essential part of the contribution. He emphasised that the entire purpose of generating reports is to enable the operation of the plant to be improved. He also stressed that generating such reports much more quickly is not a trivial improvement – it enables the faster optimisation of operating conditions thereby making the plant safer and/or more efficient.
- 20 Mr. Sessford also argued that the examiner’s approach dismembered the claim language, and drew my attention to this Office’s decision in *Fisher-Rosemount Systems, Inc.*³. Here the Hearing Officer, Mr. Huw Jones, found that the contribution was greater than merely modifying a list of process models. Mr. Jones states in paragraph 12 of his decision that:

The examiner has approached the assessment of contribution from the point of view of what has the inventor really added to human knowledge, and concludes that since the process is not controlled in any different way than before then the contribution has to be found in the way in which the list of models is organised and in the way in which models are removed from it. I think this assessment is incorrect, because it fails to recognise the final step in claim 1 of controlling the process according to a model from the modified list. The invention is not only concerned with modifying a list for the sake of modifying a list but also in using the modified list to control the process. It is this final step that allows the invention to solve the problems set out above and to realise the advantages described, i.e. it takes less time to select the model best suited to control the process in particular conditions.

- 21 Mr. Sessford considers that this invention is directly equivalent as it allows reports to be produced faster than under the old, manual method, enabling the invention to provide an improved plant. I am not wholly convinced of such a strong equivalence. In the previous *Fisher-Rosemount*³ decision the invention concerned the more rapid selection of a model, the model then being used to directly control a process. In the current application what is produced more quickly is a report which the human controller may use to modify the operation of the plant. This seems to me to be at least one step removed from the contribution in that previous decision³.

³ BL O/438/12.

- 22 This conclusion is reinforced if I return to the Court of Appeal's decision in *Aerotel*¹. Here, how to assess a contribution was discussed at paragraph 43, which states that:

It is an exercise in judgement probably involving the problem said to be solved, how the invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise. The formulation involves looking at substance not form – which is surely what the legislator intended.

- 23 In asking 'what has the inventor really added to human knowledge', I remain unconvinced of the similarities between *Fisher-Rosemount*³ and the current case. In that decision a new way of organising process models allowed a computer to select the best model in a way (and at a speed) which was previously impossible. Mr. Jones decided that the contribution was a better process plant because this was more than merely automating a manual process or improving a computer program for its own sake.
- 24 In the present case, however, the method *is* merely automating a process that was previously done manually. Yes, the reports are used to modify the operation of the process plant, but that does not necessarily make the process plant itself a part of the contribution. To my mind the contribution is only in the storage and retrieval of information to allow reports to be produced with less manual input. The invention does not claim to have contributed the idea of generating a report using data from non-contiguous time periods, nor of using such reports to improve operation of a process plant. It seems to me therefore that what the invention has really contributed to human knowledge is a method of more efficiently generating these reports on a computer.
- 25 I am afraid that I do not agree that this approach to the contribution is dismembering the claim as Mr. Sessford suggests. Rather, it is looking at the substance of the contribution, as *Aerotel*¹ says I should, rather than just the wording of the claims.
- 26 It may be that the reports are produced more quickly than was the case under the old manual system, but, in my opinion, this is not actually part of the contribution of the invention. Reports could always have been produced more quickly, for example by employing dedicated administrators. The contribution of the invention is to produce the reports in a more automated way.
- 27 I therefore find the contribution to be as follows: *a method and system for generating reports showing correlations in process control data and non-process control data over non-contiguous periods, based on synchronisation parameters, so as to provide an operator with a new and improved data reporting system.*
- 28 In short, I believe the contribution to be a better method of producing reports and not, as Mr. Sessford has argued, a better process plant.

Ask whether it falls solely within excluded matter

- 29 Having identified the contribution, I must now consider whether or not it resides wholly within excluded matter. Namely whether the contribution relates purely to a computer program and/or to a method of doing business as such.
- 30 Firstly, I agree with Mr. Sessford that the *AT&T*² 'signposts' are not equally useful in every case. However, I can see no reason not to briefly consider the most relevant (first) signpost in this case, as set out by Lewison J at paragraphs 40-41:

[40] As Lord Neuberger pointed out, it is impossible to define the meaning of "technical effect" in this context, but it seems to me that useful signposts to a relevant technical effect are:

i) whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;

...

[41] If there is a technical effect in this sense, it is still necessary to consider whether the claimed technical effect lies solely in excluded matter.

- 31 Mr. Sessford has argued that, under his broader interpretation of the contribution, i.e. a better process control system, the present invention meets this signpost. That is of course correct, but the contribution I have identified above does not extend beyond the computer. Since this contribution lies entirely within the computer it clearly does not meet the first signpost.
- 32 I will not consider the remaining signposts in any detail other than to observe that it has never been claimed that the computer itself was improved by the invention. For the record, I believe that the contribution fails the remaining four signposts too for this very reason.
- 33 In my opinion, the only part of the contribution that is not a computer program *as such* is the decision to do in a computer that which would previously have been done manually (selecting time periods according to a synchronisation parameter). This is clearly a pure business decision.
- 34 I must therefore conclude that the contribution is excluded as a combination of a method for doing business and a program for a computer as such.

Check whether the contribution is actually technical in nature

- 35 As reasoned above, the contribution does not have a relevant technical effect. Thus the application also fails the fourth Aerotel step.

Decision

- 36 I have found that the contribution made by the invention defined in the independent claims falls solely in subject matter excluded under section 1(2) as some combination of a program for a computer and a method for doing business as such. I have read the specification and the auxiliary request carefully and I can see nothing that could be reasonably expected to form the basis of a valid claim. I therefore refuse this application under section 18(3).

Appeal

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

Dr. Stephen Brown

Deputy Director, acting for the Comptroller