



PATENTS ACT 1977

APPLICANT Fisher-Rosemount Systems Inc

ISSUE Whether patent application number
GB0919725.2 complies with Section 1(2)

HEARING OFFICER Peter Slater

DECISION

- 1 Patent application GB0919725.2 entitled "Systems and methods to provide customized release notes during a software system upgrade of a process control system " was filed on 11 November 2009, with a claim to a priority date of 25 November 2008. It was published as GB2465461 A on 26 May 2010.
- 2 Following amendment of the claims and several rounds of correspondence between the examiner and the applicant's attorneys, the examiner remains of the view that the claimed invention is excluded from patentability under section 1(2). With the position unresolved, the applicant asked to be heard, and the matter came before me at a hearing on 25 March 2013. The applicant was represented by Mr Russell Sessford from Forresters. The examiner, Mr Jim Calvert, was also present.

The Invention

- 3 The invention relates to a method of upgrading software in a process control system. It is often necessary as with all software installations to deploy new versions of the software which contain bug fixes and patches. Upgrades are usually accompanied by release notes which provide guidance to the plant engineer on how to install the upgrade as well as information relating to how this will effect the various components in the system. However, it is an arduous and time consuming task for the engineer to work through lengthy release notes and to install patches which are often poorly documented. Furthermore, it is common for companies to operate multiple process control systems on geographically separate sites each having different device configurations which means that software maintenance is a complex task which may require the plant engineer to travel long distances between sites. The invention provides a new arrangement for generating customised release notes in which knowledgebase articles (i.e. user-submitted articles and comments regarding the practical usage of a process control system, including techniques, known issues, workarounds, and the like) are

combined with general release notes relating to the specific upgrade and are then filtered based on the actual configuration of the process control system to present the plant engineer with the most relevant information relating to the upgrade and any potential effects it may have on his system in order for him to make a reasoned decision as to whether or not to deploy the upgrade. Upgrades can be made remotely by the plant engineer without taking the plant offline to ensure “continuous” operation and avoid loss of revenue.

4 The most recent set of claims was filed on 24 August 2012. There are 29 claims in total, of which 4 are independent (and there are also 4 omnibus claims). The claims read as follow:

*1. A method for updating or maintaining a process control system, comprising:
identifying at least one available update or upgrade;
compiling general release notes for at least one of an update or an upgrade of a process control system;
compiling one or more knowledge base articles;
instrumenting the one or more knowledge base articles with the general release notes to correlate the one or more knowledge base articles and the release notes with a general process control system to produce instrumented notes;
matching configuration information for a particular process control system with the instrumented notes to filter the instrumented notes and produce customized notes for the particular process control system;
providing the customized notes to a user of the particular process control system in conjunction with the at least one of an update or an upgrade to alert the user regarding potential effects of the at least one of an update or an upgrade on the particular process control system;
providing the user with an option to proceed with and an option to cancel the at least one of a process control system update or upgrade;
receiving a selection of an option from the user; and
updating or upgrading the process control system if the selection is to proceed, and cancelling the update or upgrade of the process control system otherwise.*

*8. A system for updating or maintaining a process control system, comprising:
a maintenance server operable to determine at least one available update or upgrade of the process control system;
a notes instrumentation module instrumenting one or more knowledge base articles with general release notes for the at least one of an update or an upgrade of a process control system to correlate the one or more knowledge base articles and the release notes with a general process control system configuration to produce instrumented notes;
an upgrade assessment module determining configuration information for a particular process control system to provide default filter settings;
an items of interest filter applying the default filter settings for the particular process control system to the instrumented notes to filter the instrumented notes and produce custom release notes for the particular process control system; and a terminal operable to:
inform a user that the at least one update or upgrade is available, display the custom release notes generated by the items of interest filter to the user of the particular process control system in conjunction with the at least one of an update or an upgrade to alert the user regarding potential effects of the at least one of an update or an upgrade on the particular process control system, and receive a selection from the user of an option to proceed with or to cancel the update or upgrade, wherein the system proceeds with or cancels the update or upgrade of the process control system according to the selection of an option.*

*16. A system providing a graphical user interface for updating or maintaining a process control system, comprising:
a notes instrumentation module instrumenting the master release notes and knowledge base articles relating to the at least one of a process control system software update or a process*

control system software upgrade to correlate the master release notes with a general process control system configuration to produce instrumented notes;
an upgrade assessment module determining configuration information for the particular process control system implementation to provide default filter settings; and
an items of interest filter applying the default filter settings for the particular process control system implementation to the instrumented notes to filter the instrumented notes and produce custom release notes for the particular process control system; and a terminal display operable to:
display information to a user regarding the at least one update or upgrade,
display the custom release notes generated by the items of interest filter to the user of the particular process control system in conjunction with the at least one of an update or an upgrade to alert the user regarding potential effects of the at least one of an update or an upgrade on the particular process control system, and
display user-selectable options to the user, the options including at least an option to proceed with the update or upgrade and an option to cancel the update or upgrade, wherein the system is operable to cause procedure with or cancellation of the upgrade or update of the process control system according to a selection of an option.

22. A machine accessible medium having instructions stored thereon that, when executed, cause a machine to:
identify at least one available update or upgrade of a process control system;
compile general release notes for at least one of an update or an upgrade of a process control system;
compile one or more knowledge base articles; instrument the one or more knowledge base articles with the general release notes to correlate the one or more knowledge base articles and the release notes with a general process control system to produce instrumented notes;
match configuration information for a particular process control system with the instrumented notes to filter the instrumented notes and produce customized notes for the particular process control system;
provide the customized notes to a user of the particular process control system in conjunction with the at least one of an update or an upgrade to alert the user regarding potential effects of the at least one of an update or an upgrade on the particular process control system;
provide the user with an option to proceed with an option to cancel the at least one of a process control system update or upgrade;
receive a selection of an option from the user; and
update or upgrade the process control system if the selection is to proceed, and cancelling the update or upgrade of the process control system otherwise.

- 5 The applicant filed two additional sets of auxiliary claims on the 21 March 2013 and 25 March 2013 for my consideration.

The Law

- 6 The examiner has raised an objection under section 1(2)(c) of the Patents Act 1977 that the invention is not patentable because it relates to 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)

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.

- 7 As explained in the notice published by the UK Intellectual Property Office on 8 December 2008¹, 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.
- 8 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. 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.
- 9 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
 - 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.
- 10 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.
- 11 Mr Sessford accepted that this was the right approach to take.

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

Construing the claims

- 12 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

- 13 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.
- 14 The examiner's view is that the contribution made by the claimed invention lies in the provision of customised software upgrade notes to a user to alert them of potential effects of the update or upgrade on a process control system. He does not consider the contribution to extend to the process control system itself nor does he consider it to include the actual step of performing the software update or upgrade.
- 15 Mr Sessford describes the invention as an improved method of updating or maintaining a process control system, in which knowledgebase articles (i.e. user-submitted articles and comments regarding the practical usage of a process control system, including techniques, known issues, workarounds, and the like) are compiled with general release notes relating to updates or upgrades for the process control system. He says that the compilation of practical guidance and knowledge with the relevant release notes for an update or upgrade provides a more comprehensive and understandable form of guidance to a user of the updating or maintenance system. The method involves providing a user with options to proceed with or cancel the update or upgrade, based on the combined knowledge and guidance and release information, which may contain, amongst other things, details of conflicts that are likely to arise within the system should the update or upgrades take place. This information is provided as a result of matching the configuration information for the specific process control system and components thereof with the knowledgebase articles and release notes, so as to provide the most comprehensive assessment of whether an issue is likely to occur. It is, of course, of critical importance that no interruption to the control process occurs during the upgrade, since any issues arising during the upgrade could result in the process being halted and revenue and production capacity being lost. Furthermore, updates to process controllers within a process plant may cause malfunction of process devices if handled incorrectly, potentially compromising the safety of personnel. Having been presented with the options to proceed or cancel the update or upgrade, the user selects an option and the system acts accordingly
- 16 In summary, Mr Sessford considers the contribution to reside in "*the provision of a better update and maintenance system for a process control system, and hence a better process control system. This is achieved by the provision of customised notes associated with the update or upgrade and then the provision of the option to proceed (or not) with the implementation of the upgrade or update. An engineer is, as a result of the invention, able to apply updates and upgrades selectively so as to cause as little disruption to the process control system as possible. The process*

control system operates more effectively as a result and this follows through, inevitably, to a better process plant.”

- 17 So what has the applicant, as a matter of substance, added to the stock of human knowledge? In my opinion, the contribution resides in a new method of determining whether or not to perform a software upgrade in a process control system wherein customised release notes are generated by combining general release notes with other information such as knowledgebase articles relating to a particular upgrade, these are then adapted (“filtered”) for a particular systems configuration and are presented to the plant engineer who has the option to deploy the upgrade or not based on the information provided to him. The invention therefore provides more relevant information to the engineer regarding any potential effects or issues the upgrade may have on that particular configuration of process control system. The information which is presented to him in the form of customised release notes can then be used to inform his decision as to whether or not to upgrade the systems software with a greater degree of confidence that it will not have an adverse effect on the system.
- 18 I do not think the contribution extends as far as to include a new method of deploying software upgrades nor do I think it extends to a new and improved process control system per se.

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

- 19 The examiner is clearly of the opinion that the invention is embodied in software and argues that the provision of customised software release notes to a user to alert them of potential effects of the update or upgrade on a process control system is not technical in nature and falls wholly within the presentation of information exclusion.
- 20 Mr Sessford disagrees. He argues that the method of identifying an available update, compiling comprehensive information for a user and providing the user with options so as to control the process control system upgrade accordingly, is more than merely software, as such. The invention relates to the updating or upgrading of a process control system, so as to change the behaviour of the system – this is, after all he argues, the essence of an upgrade or update. He submits that a method which provides the user with options to alter a process control system, and thereby affects its behaviour, is not merely related to the presentation of information or a computer program, and therefore does not fall within the scope of subject matter excluded from patentability under Section 1(2) of the Patents Act 1977.
- 21 He goes on to argue that the contribution as claimed encompasses a better process control system (and, hence, a better process plant), and has an effect outside of the computer, that effect being control over the updating and/or upgrading of a process control system. This step involves changing the settings and behaviour of controllers and/or process control devices such as field devices and as such must be technical in nature.

22 At the hearing, Mr Sessford drew an analogy between the present case and that which was the subject of the judgment in *Gemstar*⁵. He referred me specifically to paragraphs 232 to 234 which relate to the so-called “transfer patent”. In that case, the invention involved the presentation of information to a user in the form of an electronic program guide which enabled them to chose from various options and resulted in the transfer of data from one disk to another and was considered not to fall within the computer program or presentation of invention exclusion as it achieved a relevant technical effect. He argues, that in much the same way, the present invention presents the engineer with information in the form of options from which he can chose whether to upgrade or not, and that the actual process of upgrading the software itself must involve the transfer of data from one place to another and therefore should not be excluded as it clearly involves a technical effect outside of the computer.

Computer program

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 As I have already said, I do not think the contribution extends as far as to include a new method of deploying software upgrades nor do I think it extends to a new and improved process control system per se. What the applicant has done is to create a new computer program, albeit a very clever one, which provides a process control engineer with better information to aid him in deciding whether to implement a particular software upgrade, and I can see nothing technical in that. Whilst this may mean that adverse effects on the system can be avoided, I do not consider this to be a technical solution to that problem, it merely circumvents it. I do not think the judgment in *Gemstar* convinces me otherwise as I have already decided that the contribution does not extend as far as to include the step of deploying the software and hence I do not think there is a relevant technical effect going on outside the computer which would otherwise save the invention from exclusion. I therefore consider the contribution to fall solely within the computer program exclusion.

Presentation of information

25 Having found the invention to be excluded as a computer program, I have no need to decide whether the invention falls within the presentation of information exclusion.

Auxiliary claims

26 The auxiliary claims filed on the 21 March 2013 and 25 March 2013 respectively add additional features into the claims emphasising that operation of the process control system is continuous, and that upgrades can be carried out remotely by the engineer. At the hearing, Mr Sessford proposed another possibility of amending the claims to further emphasise that one engineer can upgrade multiple different process control systems from a single remote location. However, I do not think that these

⁵ *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2009] EWHC 3068 (ch)

additional features do anything to alter the contribution which I have already decided is excluded as a computer program.

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 Any appeal must be lodged within 28 days.

P R SLATER

Deputy Director, acting for the Comptroller