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For Creativity and Innovation

BL O/307/07

17 October 2007

PATENTS ACT 1977

APPLICANT Fisher-Rosemount Systems, Inc.

ISSUE Whether patent application number GB 0602514.2 complies with section 1(2)

HEARING OFFICER R C Kennell

DECISION

Introduction

1 This application is one of three divided from application no. GB 0401722.4. It has been accorded the filing date of the parent application, 27 January 2004, and claims a priority of 28 January 2003 from an earlier US application. It was published under serial no. GB 2 423 835 A on 6 September 2006.

2 Throughout the substantive examination of the application the examiner has maintained that the invention is excluded from patentability under section 1(2) because it relates to a computer program as such. The applicant has been unable to overcome this objection despite amendment of the claims, and the matter therefore came before me at a hearing on 3 October 2007. The applicant was represented by its patent attorney, Dr Alex Lockey of Forresters, and the examiner, Mr Peter Mason, assisted via videolink.

3 The parent application and the other two divisional applications have attracted no objection under section 1(2) to patentability and have all been granted. I do not need to consider them in reaching my decision.

The invention

4 The invention relates to a distributed process control system such as used in chemical or petroleum processing plants, in which process controllers are connected to operator workstations and to process control field devices which perform various functions within the process plant. Typically a safety system is also provided, having safety controllers which are distinct from the process controllers and are connected to safety field devices in order to detect untoward events and limit the harm that they might cause. As the specification explains, it is important that process controllers are not used to perform safety functions,

since this would result in simultaneous failure of both safety and process control functions if the process controller failed. However, this has led to complete separation of the process control and safety systems, often using different communication infrastructure and hardware, which adds to the cost and complexity of running the plant.

5 The invention provides common communication, configuration and display hardware and software so that the process and safety controllers can communicate with one another and the operator workstations can communicate with, configure and view the operation of both sets of controllers and their associated field devices. However the process controllers cannot control or configure any of the safety devices, so that the functional isolation of the control and safety systems is maintained.

The form of the claims

6 As originally filed, the claims included a single independent claim (claim 1) to a configuration system for use in a process plant. The claims as amended include independent claims 1 and 9 to, respectively, the configuration system and to a process plant including it. The amendment to claim 1 deletes the struck out wording and adds the underlined wording in order (as Dr Lockey explained in the accompanying letter of 18 July 2007) to delete any overt references to computer software as such. Claims 1 and 9 presently read:

> 1. A configuration system for use in a process plant having a safety network, a process control network and a user workstation communicatively coupled to the safety network and to the process control network via a shared communication network, the configuration system comprising:
>
> ~~a computer readable memory;~~
> a configuration application ~~stored on the computer readable memory and adapted to be executed on a processor~~ operable to:
> assign a safety module to a safety element within the safety network to perform a safety function;
> assign a process control module to a process control element within the process control network to perform a process control function; and
> download the safety module to the safety element and the process control module to the process control element via the shared communication network.
>
> 9. A process plant having a configuration system, a safety network, a process control network and a user workstation communicatively coupled to the safety network and to the process control network via a shared communication network, the configuration system comprising:
>
> a configuration application operable to …. *[as in claim 1]*.

7 Even if the amendment could be said to broaden the scope of the monopoly I am satisfied that it does not extend the disclosure of the specification and does not therefore add matter in contravention of section 76 of the Act. In practice, as Dr Lockey admitted at the hearing, the configuration application would be run by

computer and the omitted matter would therefore be inherent in the claims.

8 In a skeleton argument submitted just before the hearing, Dr Lockey maintained that claims 1 and 9 were not excluded, but submitted alternative independent claims which incorporated the safety system features of claims 3 and 11 respectively. Accordingly claim 1 contained the further limitation:

> the configuration application being adapted to create the safety module to communicate with other safety modules located in other safety elements at a same node of the process plant via a local bus connected between the safety element and the other safety elements but not connected to the process control element

and claim 9 the further limitations

> the process plant comprising a node, the node having a plurality of safety elements, the safety elements being connected by a local bus

and

> the safety module being operable to communicate with safety modules located in the other safety elements, wherein the local bus is not connected to the process control element.

The law and its interpretation

9 Section 1(2) 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 -
>
> > (a) a discovery, scientific theory or mathematical method;
> > (b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;
> > (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 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."

10 It was not disputed that the assessment of patentability is now governed by the judgment of the Court of Appeal in *Aerotel Ltd v Telco Holdings Ltd* and *Macrossan's Application* [2006] EWCA Civ 1371, [2007] RPC 7 (hereinafter "*Aerotel/Macrossan*"). In this case the court reviewed the case law on the interpretation of section 1(2) and approved a new four-step test for the assessment of patentablity, 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

4) Check whether the actual or alleged contribution is actually technical in nature.

11 The operation of this 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. In correspondence Dr Lockey suggested that the form of the claim was logically a matter of substance and that the form of the claim went beyond a computer program as such. However, as I understood it at the hearing, he was not intending to cast doubt on paragraph 43. Rather he was making the point - which I accept - that the wording of the claim would be an important factor in defining an underlying patentable computer-implemented invention in a way which did not fall foul of the computer program exclusion.

12 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. At the hearing Dr Lockey accepted that if the invention failed the third step because the contribution related solely to excluded matter it was not necessary for me to go on to the fourth step.

Argument and analysis

13 Dr Lockey submitted that even if I were to find claim 1 excluded, claim 9 would still be allowable by analogy with decisions BL O/148/07 and BL O/150/07 of the comptroller in respect of previous applications by Fisher-Rosemount for control systems. He explained that in these applications the hearing officer held claims to a workstation characterised by the software run on the computer to be excluded: however he was prepared to allow claims to a process control system including a workstation characterized by the same features because the contribution went beyond a mere program running a computer and provided an improved means for an operator to control the process.

14 In Dr Lockey's view, this showed that claims were not excluded from patentability simply because they included software components as well as hardware. I agree: paragraph 22 of Aerotel/Macrossan makes clear that an invention is not to be excluded simply because it involves the use of a computer program.

15 However, as I reminded Dr Lockey at the hearing, the above decisions are part of a sequence of five decisions (nos. BL O/148-152/07) on related Fisher-Rosemount applications. Claims to process control systems did not succeed in the remaining three decisions. I think this highlights the importance of a correct analysis of the contributions made by the various claims when applying the *Aerotel/Macrossan* test, to which I now turn.

Step 1: Construction of the claims

16 The construction of neither the present nor the alternative claims is in issue, and does not to my mind present any difficulties. However I would emphasise that for both versions of claim 1 I do not consider the safety, process control and communications networks to be part of the configuration system or application. In my view it is clear from the description and drawings that the configuration system is constituted by the configuration application and any memory and processor required to execute it.

Step 2: Identifying the contribution

17 The examiner was of the view that for both claims 1 and 9 the contribution was the assigning of modules per se to elements of the process plant and their downloading via a communications network, and that since the modules were effectively modules of software code their particular function was not significant. However the agent believed the contribution to go beyond this, emphasising that that the same configuration system assigned both the safety and control modules and downloaded them via the same communications network.

18 I do not think that either view is entirely correct. It seems to me that, on the basis of the above construction of the claims, the contribution of claim 1 is a configuration application which is capable of assigning modules to particular elements and downloading them via a communications network, whereas the contribution of claim 9 is to a process plant having the configuration system coupled to the safety and process control networks via a shared communications network which maintains the functional isolation of the two systems.

19 I do not think that this analysis is changed by the further limitations in the alternative versions of claims 1 and 9.

Step 3: Does the contribution relate solely to excluded matter?

20 Even though the claims have been amended to avoid any overt mention of computer software as such, the configuration application of claim 1 is in my view still a sequence of operations to be executed on a computer. No other way of executing these operations is suggested or would appear to be feasible. I therefore consider that as a matter of substance the contribution of claim 1 in both the present and alternative versions relates solely to a computer program.

21 The contribution of claim 9 includes the shared communications network by which the safety and process control elements can be configured without compromising the functional isolation of the safety and process control operations of the process plant. I am aware that in the earlier Fisher-Rosemount decision O/149/07 the hearing officer was unwilling to allow a claim to a user workstation, having a configuration application for creating a process flow module, to be recast as a claim to a process control system because there was nothing in the contribution which made it a better control process. However, in my view the present claim 9 is distinguishable because, as well as the configuration application, the contribution includes a feature of the communications network which enables the configuration of the process plant to be carried out with the advantages stated in paragraph 5 above. I do not think the contribution of claim

9 in either the present or the alternative version can be considered to relate solely to a computer program.

Step 4 – Whether the contribution is technical in nature

22 I do not need to consider this point for claim 1 having found that its contribution relates solely to excluded matter. However, I consider the contribution of claim 9 to be technical in nature.

Dependent claims

23 On the construction of the claims that I have adopted, I do not consider that the exclusion of claim 1 can be avoided by incorporating any of the features of the dependent claims 2-8.

Conclusion and next steps

24 I therefore conclude that, in both the present and alternative versions, the invention of claims 1-8 to a configuration system is excluded from patentability under section 1(2), but the invention of claims 9-16 to a process plant is not so excluded.

25 If the applicant wishes to proceed on the basis of the latter claims, further amendment will be necessary at least to bring the description and claims into agreement. The examiner also indicated at the hearing that there might be further clarity points to pursue. I therefore remit the application to the examiner for further prosecution. The period of time for putting the application in order for grant expired on 28 September 2007 after extension as of right under rule 110(3) of the Patents Rules 1995, but it is open to the applicant until 28 November 2007 to apply for a further discretionary extension under rule 110(4).

Appeal

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

R C KENNELL
Deputy Director acting for the Comptroller