

5. Claim 1 of the present application seeks to overcome such difficulties by providing a method for automatically identifying and diagnosing wellsite operation errors, failures and/or operation inefficiency. Claim 11 provides an information handling system for automatically identifying and diagnosing wellsite operation errors, failures and/or operation inefficiency.

Issues to be decided

6. The issue on which I need to decide is whether the application complies with Section 1(2) of the Act. Specifically I must consider whether the claimed invention falls within the following categories that are excluded from patentability: a computer program, a method of doing business, a presentation or information, and a mathematical method as such.

The law

7. The examiner raised objections under Section 1(2) of the Patents Act 1977 that the application is not patentable because it relates inter-alia to one or more categories of excluded matter. The relevant provisions of this section of the Act are shown in bold below:

1(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 –

*(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.

8. The starting point for determining whether an invention falls within the exclusions of Section 1(2) of the Act is the judgment of the Court of Appeal in *Aerotel/Macrossan*¹.
9. The interpretation of section 1(2) has been further considered by the Court of Appeal in *Symbian*². *Symbian* arose under the computer program exclusion, but as with its previous decision in *Aerotel/Macrossan*, the Court gave general guidance on section 1(2). Although the Court approached the question of

¹ *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371; [2007] RPC 7

² *Symbian Ltd v Comptroller-General of Patents*, [2009] RPC 1

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/Macrossan* approach. The Court was quite clear (see paragraphs 8-15) that the structured four-step approach to the question in *Aerotel/Macrossan* was never intended to be a new departure in domestic law; that it remained bound by its previous decisions, particularly *Merrill Lynch*³ 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.

10. Subject to the clarification provided by *Symbian*, it is therefore appropriate 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 (or 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.

The claims

11. This decision is based on the claims filed on 18 August 2017. Of the 20 claims, there are two independent claims (claims 1 and 11). Claim 1 reads as follows:

A method for automatically identifying and diagnosing wellsite operation errors, failures and/or operation inefficiency, comprising:

automatically collecting wellsite data from a plurality of sources;

standardizing said wellsite data using one or more automatically selected templates specifying the desired type and format of standardized data, including aggregating the collected wellsite data into a standardized data array sequence as specified by a selected template of the one or more templates;

automatically correcting said wellsite data;

time aligning said corrected wellsite data according to an output format as specified by the selected template of the one or more templates to produce output files;

automatically analysing the output files to identify results of pass/fail criteria or comparative metrics;

using a selected report template to produce a report based on said corrected wellsite data of the analysed output files and automatically interpreting the report depending on the content of the analysed output files; and

³ *Merrill Lynch's Appn.* [1989] RPC 561

automatically identifying and diagnosing wellsite operation errors, failures and/or operation inefficiency,

using said automatic report interpretation based on said analysed output files for flagging an operational failure.

12. The second independent claim, Claim 11 reads as follows:

An information handling system for automatically identifying and diagnosing wellsite operation errors, failures and/or operation inefficiency, comprising:

a memory device communicably coupled to a processor, the memory device containing a set of instructions that, when executed by said processor, cause said processor to:

automatically collect wellsite data from a plurality of sources;

standardize said wellsite data using one or more automatically selected templates specifying the desired type and format or standardized data, including aggregating the collected wellsite data into a standardized data array sequence as specified by a selected template of the one or more templates;

automatically correct said wellsite data;

time align said corrected wellsite data according to an output format as specified by the selected template of the one or more templates to produce output files; analyse the output files to identify results of pass/fail criteria or comparative metrics;

using a selected report template to produce a report based on said corrected wellsite data of the analyzed output files and automatically interpreting the report depending on the content of the analyzed output files; and

automatically identifying and diagnosing wellsite operation errors, failures and/or operation inefficiency, using said automatic report interpretation based on said analyzed output files for flagging an operational failure.

Argument and analysis

Step 1: Properly construe the claims

13. The applicant and the examiner are in agreement that the amended claims are readily construed from the wording of the claims alone. I see no reason to disagree with that assessment.

Step 2: Identifying the actual or alleged contribution

14. The applicant and the examiner are largely, but not entirely, in agreement on the actual or alleged contribution that has been made. Both largely agree on the main elements, namely that data is collected and analysed, a report is produced

and then interpreted to identify and diagnose problems whether they be errors, failures or inefficiency in the operation of the wellsite.

15. The applicant argues that the contribution relates to a method or system of identifying such problems which includes the generation and interpretation of a report and has identified the actual contribution in their letter of 18/08/17 as:

“An improved method for automatically identifying and diagnosing wellsite operation errors, failures and/or operation inefficiency by also using the report interpretation for flagging an operational failure”.

16. The applicant places importance on the flagging of an operational failure and argues that this part of the contribution is very similar to the technical contribution as identified in the decision *Protecting Kids the world over Ltd*⁴. In that case it was found that a system for monitoring of the content of electronic communications was technically superior to that produced by the prior art. In drawing similarities with the decision in *Protecting the Kids the world over Ltd*, the applicant argues that, when viewed as a whole, the contribution should be seen as a technically superior method or system for flagging operational errors. I shall return to this argument when considering steps 3 and 4 of the *Aerotel/Macrossan* test below.

17. The examiner disagrees and in their report of 09/09/17, has re-stated the contribution as:

“A method of producing a report using a series of data manipulation techniques and automatically interpreting the report to identify and diagnose wellsite operation errors, failures and/or operation inefficiency and using the interpretation for flagging an operational failure.”

18. In coming to this view, the examiner has followed the guidance on how to approach the assessment of the actual or alleged contribution as provided at paragraph 43 of *Aerotel* (emphasis added) namely:

*“The second step – identify the contribution - is said to be more problematical. How do you assess the contribution? Mr Birss submits the test is workable – it is an exercise in judgment 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.”*

19. According to the description, the problem said to be solved is that the analysis and reporting of wellsite data may be difficult, time consuming and require significant manual oversight because the data may be fragmented across different sources, unstandardized and/or contain errors⁵. The invention works by automating data collection, correction and analysis and then automatically

⁴ *Protecting Kids the word over Ltd*. [2011] EWHC 2720 (Pat)

⁵ For example, see page 1 lines 12-15 of the description

generating a report which is then interpreted to identify and diagnose problems in the wellsite.

20. It appears to me that “automatically” in the context of this application means that the method is carried out without any (or a minimum of) manual oversight, i.e. the steps are carried out by a computer program. According to the description, the steps of automatically collecting, standardizing, aggregating, correcting, time aligning and analysing the wellsite data to identify results of pass/fail criteria or comparative metrics are all carried out using techniques well known in the art. Therefore, I do not think that the contribution lies in the various steps of collecting and analysing the wellsite data.
21. The method then produces a report and automatically interprets the report to automatically identify and diagnose wellsite operation errors, failures and/or operation inefficiency. I can find little detail in the specification that explains how the step of automatically interpreting the report works and how errors are identified. At page 29 lines 3-4, the description states that “the interpretation of the reports may be automated by algorithmic data analysis procedures known to those of skill in the art.” Nevertheless, the description does state that the present application represents an improvement in data analysis and reporting over prior art systems by automating these steps.
22. I have noted that the specification refers to interpretation of macroscopic reports, for example page 21 lines 13-15. However, it appears that the interpreting of macroscopic reports relates to extracting data from existing historical reports or well site operation, for example through Optical Character Recognition scanning, and mapping the extracted information on to the selected template, i.e. it is part of the data collection step rather than interpreting the report generated by the method of claim 1.
23. The final step in the method where the report interpretation is used appears to be completed outside of the computer program, for example by a person reading the report and deciding how to act upon it.
24. The stated advantages are that the need for manual oversight is eliminated and the report produced is more coherent and avoids inconsistencies which arise in prior art methods where reports may vary according to which individual technician has produced them. This does not appear to be a technical contribution and I shall return to this in more detail below in considering steps 3 and 4.
25. Thus it is my view that the contribution lies in generating a report and automatically interpreting the report to identify and diagnose wellsite operation errors and flagging wellsite operational errors, failures and/or operation inefficiencies.

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

26. The examiner considered that the claimed invention fell within the excluded matter of a computer program, a business method, a mathematical method and the presentation of information. I shall consider each of these in turn. In doing so I shall consider the third and fourth steps of the *Aerotel* four-step test together.

A computer program

27. The wording and content of the claims and the description clearly shows that the steps of automatically collecting the data, correcting it, analysing it using various data manipulation techniques, identifying the results of pass/fail criteria and producing the report are all implemented by a computer program running on a standard computer.

28. Further guidance concerning whether a computer program makes a technical contribution was set out by Lewison J in *AT&T/CVON* and by the Court of Appeal in *HTC/Apple*⁶ in the form of signposts ("AT&T signposts") namely:

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

(ii) whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run;

(iii) whether the claimed technical effect results in the computer being made to operate in a new way;

(iv) whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer;

(v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

29. It is clear that signposts (ii), (iii), and (iv) are not relevant in this case. The claimed invention does not operate at the level of computer architecture nor does it make the computer run in a new way or lead to a more efficient or effective computer.

30. The applicant has argued that, when viewed as a whole, the contribution has an effect outside of the computer, namely a technically superior method of flagging of operation errors, failures or inefficiencies in a wellsite. The applicant has argued that a technical contribution lies in the flagging of an operational failure by the method/system. They submitted that this part of the contribution is very similar to the technical contribution as identified in the decision *Protecting Kids the world over Ltd*. In that judgement it was found that an improved monitoring of the content of electronic communications was technical superior to that produced by the prior art and was, therefore, considered patentable.

⁶ *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451, paras 148-150

31. In the present case the applicant has argued that the contribution is an improved method for automatically identifying and diagnosing wellsite operation errors, failure and/or operation inefficiency by also using the report interpretation for flagging an operational failure. They appear to be arguing that viewed as a whole the claimed invention is technically superior to that provided in the prior art.

32. I disagree with this assessment.

33. In the case of *Protecting Kids the world over Ltd*, a system for monitoring the content of electronic communications to ensure that children are not exposed to inappropriate content analysed communications data and sent a warning notification to an administrator or user. The system would then receive a response from the administrator or user (parent) comprising one or more actions to be taken by the computer, e.g. to terminate the communication channel. When viewed as a whole, the system was considered to comprise a technical contribution outside of the computer itself, i.e. a technically superior monitoring system.

34. In contrast, the present application appears to do no more than generate a report and identify wellsite operational errors, failures and/or operation inefficiencies. The report must then be read by a wellsite operator who may then decide what action to take. While this action is clearly carried out outside of the computer, it is not in my view part of the contribution made by the present application. The improvement over the prior art lies in automating the process of generating the report and removing the need for manual oversight. There is nothing to suggest that the method or system is more accurate at flagging problems or that the report generated is improved in a technical way. Indeed the only improvement identified is the removal of inconsistencies which occur due to differences in the approach taken by different technicians in generating reports. In my view this is not a technical contribution outside of the computer.

35. Therefore I do not consider that signpost (i) is satisfied.

36. The perceived problem addressed is that data analysis and reporting is difficult and time consuming due to data being fragmented across different sources, unstandardized and prone to errors which results in a need for significant manual oversight. The fact that manual oversight is necessary is not in itself a technical problem. Consequently, I consider that signpost (v) is not satisfied.

37. Consequently, I consider that the claimed invention relate to a computer program as such.

A method of doing business

38. The intended advantage of the present application is to remove the need for manual oversight in the analysis of wellsite data and the production of a report flagging operation errors, failures or inefficiencies. The applicant argues that this ensures better and more consistent reporting of errors. However, it is clear that the removal of manual oversight is a cost saving measure, through removing manual oversight, which consequently increases profits for the business.

39. In addition, the examples of the types of problems which can be identified by the method and system relate to cost-based aspects of running a wellsite (for example see page 29 line 30 to page 30 line 12). These examples clearly relate to the business of running an oil rig production site in a cost effective way.

40. It is clear from these examples that the contribution lies solely within a method of doing business and that the problem being solved, the removal or manual oversight, is not technical in nature. Therefore, I agree with the examiner's view that the claimed invention also relates to a method of doing business as such.

A mathematical method

41. In the pre-hearing report of 9 September 2017, the examiner considered the application to also relate to a mathematical method as such. They argued that the contribution is related to producing a report based on a series of data manipulation steps and automatically interpreting the report to identify operational problems. The examiner argued that it is conceivable that the identification and diagnosis of the errors, failures or inefficiencies could be carried out using a series of thresholds as would be normal for a mathematical simulation or analysis.

42. The applicant has not contested these latest arguments.

43. From the description, it is clear that the series of data manipulation steps are those which are well known in the art. These include steps where the data is analysed to identify pass/fail criteria and other statistical analysis steps (see for example page 28 line 20 to page 29 line 27). These steps appear to me to be no more than the application of well-known mathematical manipulation methods to the wellsite data. In addition the specification does not detail how the report is interpreted to flag the operational errors, failures or inefficiencies and there is nothing to suggest that the contribution is technical in nature. Consequently, I find it difficult to see how the present application makes a contribution beyond that of a computer implementation of a series of mathematical manipulation of data. Therefore, I agree with the examiner's view that the claimed invention also relates to a mathematical method as such.

The presentation of information

44. As I have previously stated, it is my view that the contribution lies in automatically generating a report and flagging wellsite operational errors, failures and/or operation inefficiencies. As I have set out above, there is little detail in the specification that explains how the step of automatically interpreting the report works and how errors are identified or flagged. However, in at least one example it would appear that a wellsite operator is required to read the report and then act upon it (see page 30 lines 4-6). Thus it appears that the claimed invention also relates to the presentation of information as such.

Conclusion

45. Having considered the issue before me, I conclude that the invention defined by claims 1 and 11 and their dependent claims is excluded under Section 1(2)(c) of the Act as a computer program and a method of doing business as such; under section 1(2)(a) as a mathematical method as such and under Section 1(2)(d) as the presentation of information as such. I have carefully considered the application and cannot see any changes or amendments that could be made to the claims to alter this viewpoint. I therefore refuse the application under Section 18(3) of the Act.

Appeal

46. Any appeal must be lodged within 28 days after the date of this decision.

C L Davies
Deputy Director, acting for the Comptroller