Intellectual Property Office

BL O/392/16

12 August 2016

PATENTS ACT 1977

APPLICANT The Boeing Company

ISSUE Whether patent application GB 1216858.9 complies with sections 1(1), 1(2) and 3

HEARING OFFICER B Micklewright

DECISION

Introduction

1 This decision relates to patent application GB 1216858.9 entitled "Maintenance systems and methods for use in analyzing maintenance data" in the name of The Boeing Company. The application was filed on 20 September 2012 with an earliest priority date of 23 September 2011. It was published on 3 April 2013 as GB 2495195 A. The examiner objected to the claims on the basis that they are excluded from patentability under Section 1(2) of the Patents Act 1977 ("the Act"), both as a computer program and a method for doing business. The examiner also objected to the claims on the basis that they lacked an inventive step. These objections were maintained through several rounds of amendment. The applicant has asked for the issues to be decided on the basis of arguments set out previously in correspondence.

The invention

2 The application relates to analysing maintenance data for vehicles, in particular aircraft. It involves analysing maintenance actions which correspond to a fault message relating to the vehicle and identifying corrective actions. This information is then stored so that it may be retrieved when diagnosing future fault messages. The system infers that the last corrective action (i.e. the most recent action) associated with a maintenance event is the action which fixed the fault.

3 Following amendments submitted on 1 June 2015 there are 18 claims, two of which are independent. The independent claims relate separately to a method and system but are otherwise essentially the same. There is also a claim to a storage media. Claim 1 is reproduced below. The full set of claims is available on the IPO's IPSUM service[1].

[1] https://www.ipo.gov.uk/p-ipsum/Case/PublicationNumber/GB2495195

1. A method for use in analyzing data related to maintenance of at least one vehicle, said method comprising, at a computing device:

receiving at least one fault message relating to a vehicle;

receiving a maintenance event log for the vehicle, the maintenance event log including a plurality of maintenance events associated with the at least one fault message, each maintenance event comprising a plurality of corrective actions;

automatically identifying a corrective action within a most recent maintenance event of the plurality of maintenance events;

inferring, in response to the vehicle ceasing transmission of the fault message, that the last corrective action within the most recent maintenance event caused cessation of the fault message; and

storing a diagnostic entry including the at least one fault message and the identified corrective action, such that the diagnostic entry is retrievable from the computing device to evaluate a subsequent like fault message.

The Law

Excluded subject matter

4 Section 1(2) of the Act states (emphasis mine):

1(2) It is hereby declared that the following (amongst other things) are not inventions for the purposes of the 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 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.

5 The provisions of Section 1(2) were considered by the Court of Appeal in *Aerotel*[2] when a four-step test was laid down to decide whether a claimed invention is patentable:

(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.

6 It was stated by Jacob LJ in *Aerotel* that the test is a re-formulation of and is consistent with the previous "technical effect approach with rider" test established in

[2] *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371

previous UK case law. Kitchen LJ noted in *HTC v Apple*[3] that the *Aerotel* test is followed in order to address whether the invention makes a technical contribution to the art, with the rider that novel or inventive purely excluded matter does not count as a "technical contribution".

7 The Court of Appeal in *Symbian*[4] confirmed that this structured approach is one means of answering the question of whether the invention reveals a technical contribution to the state of the art. In other words, *Symbian* confirmed that the four-step test is equivalent to the prior case law test of 'technical contribution', as per *Merrill Lynch*[5], *Gale*[6] and *Fujitsu*[7] and ruled that the question of whether the invention makes a technical contribution has to be addressed when considering the computer program exclusion, although it does not matter whether that takes place at step 3 or step 4 of the *Aerotel* test.

Inventive step

8 Section 1(1) of the Patents Act 1977 ("the Act") states:

> *1.-(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –*
> *(a) the invention is new;*
> *(b) it involves an inventive step;*
> *(c) it is capable of industrial application;*
> *(d) the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A below;*
> *and references in this Act to a patentable invention shall be construed accordingly.*

9 Section 3 of the Act states:

> *An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).*

10 In *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*[8], the Court of Appeal formulated a four-step approach for assessing whether an invention is obvious to a person skilled in the art. This approach was restated and elaborated upon by the Court of Appeal in *Pozzoli SPA v BDMO SA*[9] where Jacob LJ reformulated the *Windsurfing* approach as follows:

> *(1)(a) Identify the notional "person skilled in the art".*
> *(1)(b) Identify the common general knowledge of that person.*
> *(2) Identify the inventive concept of the claim in question or if that cannot be readily done, construe it.*
> *(3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or claim as construed.*

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[3] *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451
[4] *Symbian Ltd's Application* [2009] RPC 1
[5] *Merrill Lynch's Application* [1989] RPC 561
[6] *Gale's Application* [1991] RPC 305
[7] *Fujitsu Limited's Application* [1997] RPC 608
[8] *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 49
[9] *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588

> *(4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps that would have been obvious to the person skilled in the art or do they require any degree of invention?*

In assessing whether the invention claimed in the present application involves an inventive step, I will therefore use this *Windsurfing/Pozzoli* approach.

Arguments and analysis

Excluded subject matter

11 I will follow the steps laid out in *Aerotel* in my analysis.

Step (1): Properly construe the claims

12 There are some clarity issues with the application and in particular with the amended claims which have made it difficult to properly construe the claims. It is not entirely clear what comprises the step of identifying a corrective action i.e. whether this involves merely identifying all actions which are considered corrective or whether it is identifying a particular one of the corrective actions. It is not clear whether the "last corrective action" is intended to be the "identified action". Moreover the step of inferring "that the last corrective action within the most recent maintenance event caused the cessation of the fault message" does not seem to link directly into the other steps of the claim.

13 In their attorney's letter of 1 June 2015 the applicant argued that claim 1 should be construed as follows (emphasis mine):

> *Claim 1 defines method for use in analyzing data related to maintenance of at least one vehicle, said method comprising, at a computing device: receiving at least one fault message relating to a vehicle; receiving a maintenance event log for the vehicle, the maintenance event log including a plurality of maintenance events associated with the at least one fault message, each maintenance event comprising a plurality of corrective actions; automatically identifying a corrective action within a most recent maintenance event of the plurality of maintenance events* ***including*** *inferring, in response to the vehicle ceasing transmission of the fault message, that the last corrective action within the most recent maintenance event caused cessation of the fault message; and storing a diagnostic entry including the at least one fault message and the identified corrective action, such that the diagnostic entry is retrievable from the computing device to evaluate a subsequent like fault message.*

14 In his letter dated 10 February 2016 the examiner agreed with this construction. However, although this goes some way to clarifying the relationship between the identified corrective action and the last corrective action by stating that the step of identifying the corrective action includes the step of inferring that the last corrective action caused the cessation of the fault message, the exact nature of the relationship between the identified corrective action and the last corrective action is still unclear.

15 One possible interpretation is that the identified corrective action and the last corrective action are two distinct corrective actions, in which case it is difficult to see what bearing on the claim the inclusion of the inferring step in the claim has, since this step does not appear to interact with other key parts of the claim. Also it would

not be clear how or which corrective action would be identified. Another interpretation is that the step of inferring that the last corrective action caused the cessation of the fault message is actually the process carried out to identify a corrective action and that they are actually the same action. Another interpretation is that each corrective action is automatically identified amongst all the other data in the maintenance event and then it is inferred that, of these corrective actions, the last corrective action caused the cessation of the fault message and is identified as the corrective action to be stored in the diagnostic entry. It is the second interpretation that I have adopted when construing the claim as I believe that this is what the skilled person would understand to be the case when the claims are read in the light of the description (see for example pages 8-9), where it is understood that a particular corrective action is identified. This appears to be consistent the construction suggested by the applicant. In any event my decision does not depend on which of the second or third possible constructions I adopt.

Step (2): Identify the actual contribution

16 In *Aerotel* the Court of Appeal provided useful guidance in relation to determining the contribution. In paragraph 43 of this judgment Jacob LJ said:

> *"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."*

17 In their agent's letter of 9 November 2015 the applicant has argued that they consider the contribution to be

> *"an improved maintenance capability, achieved through the identification of a suitable corrective action for a maintenance process being performed in real time, which could not be achieved by a person."*

However, they then went on to state that

> *"The contribution, as identified above, does not lie in the analysis of data and the identification of a corrective action, but rather in the application of these techniques to aircraft maintenance procedures."*

which seems at odds with the previous statement.

18 I am not convinced that either of these accurately reflects the actual contribution. The claim does not seem to be me to about a maintenance process but rather about analysing and storing data generated by a maintenance process in relation to a fault in a vehicle such as an aircraft so that it can inform an engineer carrying out a maintenance process in relation to a similar fault in the future.

19 Secondly, I am not sure what is meant by "performed in real-time" in the context of the claimed invention since there is no restriction in the claims regarding when the diagnostic entry is created, except that it must presumably be after the detection of the cessation of the fault message. The claimed invention is silent regarding when

this occurs. The description suggests in page 12 that this can be either after a maintenance event is added to a maintenance event log or after a delay from the most recent maintenance event.

20 With respect to the *"which could not be achieved by a person"* element of the submitted contribution, I am not convinced that this is relevant. The fact that computers can perform some tasks much more quickly than a person is the reason why computers are useful. It is not something that is particularly provided by the present invention. I note, for example, the comments in *Fujitsu* at page 618 lines 38-44 with respect to a computer-implemented invention avoiding labour and error. Moreover I am not convinced that this alleged contribution could not be achieved by a person since it seems wholly reasonable that a person upon receipt of fault message would be able to remember and identify a suitable corrective action by remembering the last time such a fault message occurred and identifying a suitable corrective action by remembering the last corrective action carried out causing the message to cease.

21 Furthermore I am not convinced that the claims go against a technical prejudice since it seems wholly reasonable for the skilled person to consider what they did the last time something like this happened.

22 Taking all this into consideration, I will take the contribution to be:

> *Analysing data related to maintenance of at least one vehicle such as an aircraft which involves the storing of a diagnostic entry including at least one fault message and an identified corrective action, such that the diagnostic entry is retrievable to evaluate a subsequent like fault message, the identified corrective action being identified by inferring that the last corrective action event caused the cessation of the fault message.*

Steps (3) & (4): Determine if the contribution falls solely within the excluded subject matter; check if the contribution is actually technical

23 I must now consider whether this contribution lies solely within the excluded matter and whether it is technical in nature. The examiner argued that the contribution lay solely in the fields of a method of doing business and a program for a computer as such. I will first consider the business method exclusion.

Method of doing business

24 The applicant's attorney argued at one point that the invention improves the efficiency of a computer and is therefore not a method of doing business as such. There does not seem to me to be any increase in the efficiency of a computer in a general sense in the contribution identified above. Rather the invention lies in the analysis of vehicle maintenance data and the identification of corrective actions.

25 The applicant's attorney also argued that the contribution does not lie in the analysis and identification of a corrective action but rather in the application of these techniques to aircraft maintenance procedures and is therefore inherently technical and not therefore excluded as a business method. As I have found in my identification of the contribution, the data being analysed is certainly related to maintenance of at least one vehicle, but, as I have said above, I do not consider the

contribution to lie in a maintenance procedure or process. Rather it relates to the analysis of data relating to such procedures and helps inform a future correction of a fault by identifying and storing for future retrieval the last corrective action in relation to the fault message. The end result is a database or fault messages and corresponding corrective actions. This process of identifying and storing corrective actions seems to me to be essentially an administrative process of maintaining and updating a vehicle maintenance database.

26 In addressing the final step as to whether the application is technical in nature the applicant's attorney argued in their letter of 9 November 2015 that the application in suit is similar to that of office decision BL O/312/15 in the name of *Boeing*[10].This case related to the use of a unique identifier for an aircraft part, which can be used to access data relating to that part for use in maintaining the aircraft and aircraft safety. In paragraphs 26 – 27 of that decision it was held that as the maintenance of an aircraft and its safety is inherently technical in nature that the contribution was therefore technical in nature. However, in this case, the contribution is merely creating a database for use in fault evaluation and no actual maintenance is involved. This case does not therefore help inform the present case. I am unable to identify a technical aspect of the contribution and conclude that the invention is not technical in nature and falls wholly within the business method exclusion.

Program for a computer

27 Where a claim involves the use of a computer program, it does not necessarily follow that the claim must be excluded. Instead, the contribution must be assessed by reference to the process the program will cause a computer to perform, because, as stated in *Astron Clinica*[11]*,* the assessment is based on the substance of the invention. In the case of *Halliburton Energy Services' Applications*[12], HHJ Birss QC, as he then was, emphasised that "[a] computer programmed to perform a task which makes a contribution to the art which is technical in nature is a patentable invention and may be claimed as such." Therefore, a computer program that provides a technical contribution will not fall under the exclusion because it is more than a computer program as such. The crux of the matter therefore lies in determining whether the claimed invention makes a technical contribution.

28 One useful tool to assist in identifying whether an application makes a technical contribution is the signposts set out initially by Lewison J as he then was in *AT&T/CVON*[13]*,* revised slightly by Lewison LJ in *HTC v Apple*, and subsequently used by Mann J in *Gemstar v Virgin*[14]. In considering the signposts in *AT&T/CVON*, it goes without saying that these do not provide a definitive account of what is and what isn't technical, but they do provide useful guidance as to where the Courts have determined a technical contribution can be made. The signposts are as follows:

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

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[10] *The Boeing Company* BL O/312/15

[11] *Astron Clinica Ltd & Ors v The Comptroller General of Patents, Designs and Trade Marks* [2008] RPC 14

[12] *Halliburton Energy Services Inc's Applications* [2012] RPC 129

[13] *AT&T Knowledge Ventures/CVON Innovations v Comptroller of Patents* [2009] EWHC 343 (Pat)

[14] *Gemstar-TV Guide International Inc & Ors v Virgin Media Ltd & Anor* [2009] EWHC 3068 (Ch) [2010] RPC 10

(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 there is an increase in the speed or reliability of the computer; and

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

29 As the application does not operate at the level of the architecture of the computer, does not result in the computer being made to operate in a new way or increase the speed or reliability of the computer (see my comments above in relation to this signpost) I conclude that signposts (ii), (iii) and (iv) do not apply in the present case.

30 With regard to signpost (i), the contribution is merely creating a database for fault evaluation and does not relate to an actual maintenance procedure. There is therefore no technical effect on a process taking place outside of the computer.

31 In relation to signpost (v) the applicant's attorney argued that the present invention overcame the problem of how to improve the efficiency of a computer rather than circumventing it. This is not however the problem being solved in the present case. Rather it is an administrative problem about how to maintain and update a database of fault messages and corrective actions. There is not therefore a technical problem being solved and signpost (v) is not satisfied.

32 It seems to me that the invention is entirely about analysing and storing data rather than some sort of maintenance tool or maintenance process. It provides a store of information in relation to previous faults and corrective actions an engineer can call on for guidance when carrying out a maintenance process in the future. I am unable to identify a technical aspect of the contribution and therefore I conclude that the invention falls wholly within the exclusion of a program for a computer as such.

Inventive step

33 I will use the approach set out in *Windsurfing* as modified in *Pozzoli* in my consideration of whether the claimed invention includes an inventive step.

Steps (1)(a) and (1)(b)

34 The applicant's attorney stated in their letter of 9 November 2015 that "we are in agreement with the Examiner's analysis of steps (1) to (3) of this approach." The examiner held that the skilled person was a team involved in the design and usage of maintenance systems and methods and in analysing data related to the maintenance of vehicles. This team would be aware that computer-based maintenance assistant systems and methods existed and that these can automatically associate a vehicle fault with a maintenance event or action. The team would therefore include at least one person who was skilled in parsing incoming messages to derive information from them. The team would also have knowledge regarding how to link fault messages with maintenance events. It would also be

motivated to undertake repair or maintenance action that actually solved the fault messages that were received from the vehicle. I am happy to accept this analysis.

Step (2)

35 The examiner identified the following as the inventive concept of the invention claimed in claim 1:

> *"A method suitable for use in analysing data related to maintenance of at least one vehicle, said method comprising, at a computing device:*
>
> *receiving at least one fault message relating to a vehicle;*
>
> *receiving a maintenance event log for the vehicle, the log including a plurality of maintenance events associated with the fault message, each maintenance event comprising a plurality of corrective actions;*
>
> *automatically identifying a corrective action within a most recent maintenance event of the plurality of maintenance events within the log;*
>
> *inferring, in response to the vehicle ceasing transmission of the fault message, that the last corrective action within the most recent maintenance event caused cessation of the fault message; and*
>
> *storing a diagnostic entry including the fault message and the identified corrective action, the diagnostic entry being retrievable from the computing device to evaluate a subsequent like fault message."*

36 The applicant's attorney was in agreement with this identification of the inventive concept and, bearing in mind the construction I placed on the claim in my consideration of excluded matter, I will take this as the inventive concept of the invention of claim 1.

Step (3)

37 The Examiner identified the following documents as matter which formed part of the state of the art, both of which list The Boeing Company as assignee:

> D1: US 2010/0121520 A1 (YUKAWA et al.)
>
> D2: US 2008/0005617 A1 (MAGGIORE et al.)

38 D1 relates to the automatic tracking of effectiveness of fault repairs. A unique fault code is assigned to each of a plurality of different faults. Repaired faults are then catalogued and stored according to their respective fault codes in a fix effectiveness system. This system is populated with additional fault information from an electronic logbook. The system tracks and stores information concerning specific repair actions taken and any follow up repair actions for the same problems, and also the absence of follow up actions for a specific repair action taken. Codified maintenance actions and codified defect reports are stored in the fix effectiveness database.

39 Users may access information on a particular fault condition and a fault history and/or a maintenance history report is presented to the user. This enables the user

to select a repair procedure that has an increased likelihood of correcting the specific fault condition. Information may be displayed to the user in a ranked order indicating first the most successful repair options followed by less successful repair options.

40 As the examiner states, D1 does not make reference to a maintenance event log for a vehicle which includes a plurality of maintenance events associated with a fault message. The fix effectiveness database can however receive repair or fault history information from various sources (see for example paragraph [0018]).

41 D1 also does not make explicit reference to identifying a corrective action within the most recent maintenance event and also does not make the inference that the last corrective action within the most recent maintenance event caused the cessation of the fault message. It does however monitor new codified defect reports entered into the fix effectiveness database and updates each newly entered report with a "successful" designation if no subsequent codified defect report is entered for the exact same component within a predetermined time interval, for example 15 days. I will expand on this in my consideration of step (4).

42 D2 relates to the automated processing of electronic log books and pilot reports and prioritises observed faults and potential observed faults. This prioritisation is based on historical observed fault data and historical maintenance actions data. If fault codes or maintenance codes have not already been assigned to this data, uncoded data is mined and fault codes and maintenance codes assigned and the data is added to a knowledge base. The knowledge base provides the capability to analyse the effectiveness of maintenance actions performed in response to observed faults and recommend effective maintenance actions to the user if the observed fault occurs again in the future. The specification provides the example that a recurrence of similar or identical faults after a maintenance action may suggest a different course of action, a different problem, or a change to the relative fault cost which may result in a different priority being assigned to a particular observed fault.

43 D2 does not make reference to a maintenance event log for a vehicle which includes a plurality of maintenance events associated with a fault message. The system can however analyse data in various formats, with or without fault codes and maintenance codes. D2 also does not make explicit reference to identifying a corrective action within the most recent maintenance event and also does not make the inference that the last corrective action within the most recent maintenance event caused the cessation of the fault message. There is little detail as to how the effectiveness of maintenance actions is determined, with the exception of the example I have mentioned above.

Step (4)

44 So would the differences between the disclosure of the prior art and the identified inventive concept be obvious to the skilled person identified in step (1)(a) and equipped with their common general knowledge identified in step (1)(b)?

45 Starting with D1, the first difference relates to the format in which data is received by the system. It would in my view be entirely obvious to the skilled person to group data so that the maintenance actions associated with a particular fault are correlated. As I have said, the system of D1 is flexible in terms of how data is received into the

fix effectiveness database and in practice, when it comes to assessing fix effectiveness, it would seem entirely within the consideration of the skilled person to include in this assessment a log of all maintenance events associated with a particular fault.

46 The second question is whether or not it would be obvious to the person skilled in the art to infer that the last corrective action caused the cessation of the fault message. In their letter of 9 November 2015 the applicant's attorney stated that the skilled person could only infer that the latest corrective action was one of a number of possible successful events, and that "the skilled man would be prejudiced to identify a most frequently used corrective action or a most successful corrective action, rather than simply a latest action, as the fact that an action occurred at a later time then another corrective action gives no real indication of the relative level of success of the action."

47 In my view the skilled person would be aware of a range of possibilities for identifying the successful corrective action, included those mentioned by the applicant's attorney. I do not consider that they would be prejudiced against considering the last corrective action related to a particular fault. This would seem like an entirely sensible approach and it would be obvious that the skilled person would look at the last maintenance action in relation to a repaired fault as an action which at least contributed to the cessation of the fault and assume that this action was likely to have fixed the fault, as it is evident that this would be the action most likely to have fixed the fault. Moreover, the skilled person would in my view be further led towards considering such an approach by the disclosure in paragraph [0022] of D1 which states (emphasis mine):

> *"The ground based ELB system 20 (or the alternative aircraft health management application 25) may also monitor new codified defect reports entered into the fix effectiveness database 22* ***and updates each newly entered report with a "successful" designation if no subsequent codified defect report is entered for the exact same component within a predetermined time interval, for example 15 days.*** *Thus, a maintenance person who has pulled up codified defect reports (pertaining to a specific object and specific fault condition) will see previously performed repair actions and/or part replacements by other maintenance persons and information on the rate of accomplishing a successful repair via those specific repair actions and/or parts replaced. This display of information may provide a ranked order indicating first the most successful repair options followed by less successful options."*

48 Although this paragraph does not refer specifically to the last corrective action, it does however suggest the possibility of looking for when there are no further codified defect reports for a particular component within a timeframe, the implication being that the last action taken in relation to the fault for the component in question was successful. This in my view leads the skilled person further towards considering identifying the last corrective action as the action which caused the cessation of the fault as an obvious thing to do.

49 I therefore conclude that the differences between the prior art as set out in D1 and the identified inventive concept would be obvious to the person skilled in the art. Claim 1 therefore lacks an inventive step over D1.

50 Similar arguments apply in relation to D2. In this document the effectiveness of each maintenance action on an observed fault is analysed and it would in my view be entirely obvious to the skilled person to organise the data by looking at all the maintenance actions relating to a particular observed fault, similar to the maintenance event log of the present invention.

51 In relation to the second difference between the disclosure of D2 and the inventive concept, the effectiveness of maintenance actions performed in response to observed faults is analysed and stored in the knowledge base. As I have said, there is not a great deal of information regarding how their effectiveness is analysed. The example I referred to under step (3) above does however suggest that if a similar or identical fault recurs then a different course of action may be required. There will then of course be a subsequent maintenance action. The flip side of this, whilst not explicitly stated, is that if a similar or identical fault does not recur then there are likely to be no further maintenance actions. It could then perhaps be inferred that the last maintenance action corrected the fault. In any event it is in my view clearly within the skilled person's consideration that, when determining how the effectiveness of maintenance actions should be analysed, they will look at the most recent corrective action as the one which corrected the fault. This seems to me to be an entirely straightforward consideration on the part of the skilled person.

52 I therefore conclude that the differences between the prior art as set out in D2 and the identified inventive concept would be obvious to the person skilled in the art. Claim 1 therefore also lacks an inventive step over D2.

53 Claim 11 the other independent claim, also lacks an inventive step for the same reasons as for claim 1. I have examined dependent claims 2-10 and 12-18 and these in my view fall within the common general knowledge of the skilled team identified above. The applicant made no specific arguments in relation to any of the dependent claims. I there conclude that claims 2-18 also lack an inventive step.

Conclusion

54 I have found that the claimed invention is excluded under section 1(2) as a program for a computer as such and a method of doing business as such. I have also found that the claimed invention lacks an inventive step. I therefore refuse the application.

Appeal

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

B Micklewright
Deputy Director, acting for the Comptroller