Intellectual Property Office

BL O/774/19

16 December 2019

PATENTS ACT 1977

APPLICANT	ION Geophysical Corporation
ISSUE	Whether patent application GB 1813830.5 complies with 1(2)
HEARING OFFICER	Dr C. L. Davies

DECISION

Introduction

1 Patent application GB 1813830.5 (“the application”) entitled "Simultaneous Operations Coordination and Planning System" was filed on 25 March 2015, with an earliest declared priority date of 26 March 2014. It was published as GB 2562968 A on 28 November 2018.

2 Following a number of rounds of correspondence between the examiner and the applicant's attorneys, and amendment of the claims, the examiner remains of the view that the claimed invention is excluded from patentability under section 1(2).

3 With the position unresolved the applicant asked to be heard and the matter came before me at a hearing conducted in person at the Office on 23 September 2019. The issue of excluded matter before me was set out in the examiner’s pre-hearing report of 11 July 2019. The applicant was represented at the hearing by attorney Mr Nicholas Wallin and Mr James Mitchell of Withers & Rogers LLP. I thank the attorneys for filing skeleton arguments prior to the hearing and their hearing notes following the hearing to aid my decision. I was assisted by Mr Marc Collins.

The invention

4 The invention relates to a networked system for sharing data between multiple installations, structures, vessels, or other resources (i.e., operators or entities) that may be operating in a marine environment, such as an oil and gas marine field. The data shared between the operators allows each operator to optimize its operations and complete tasks in a more efficient manner. The marine operation can include seismic operation, drilling operation, vessel operation (e.g., tanker, support vessel, chase vessel, fishing vessel), diving operation, anchoring operation, rig operation, maintenance operation, surveillance operation, etc. Each of these marine operations have various operational plans associated with them that call for a number of tasks to be performed and positions in the area to be traversed, closed off, travelled, etc. at different times. The operational plans can therefore involve task information

related to the particular tasks to be conducted and can involve positioning and timing information related to the particular tasks in the area. What the particular information will be depends on what marine operation is planned to be performed and which operators will be performing them.

Figure 1 below schematically shows a marine operation coordination system 10 for a marine field 12. As noted above, operations surrounding the exploration, appraisal, development and production of an offshore asset are complex. Some of the operations occur simultaneously and may include seismic acquisition, construction, production, rig operations, mobilization/demobilization, diving, aircraft landing and take-off, anchoring operations, and more.

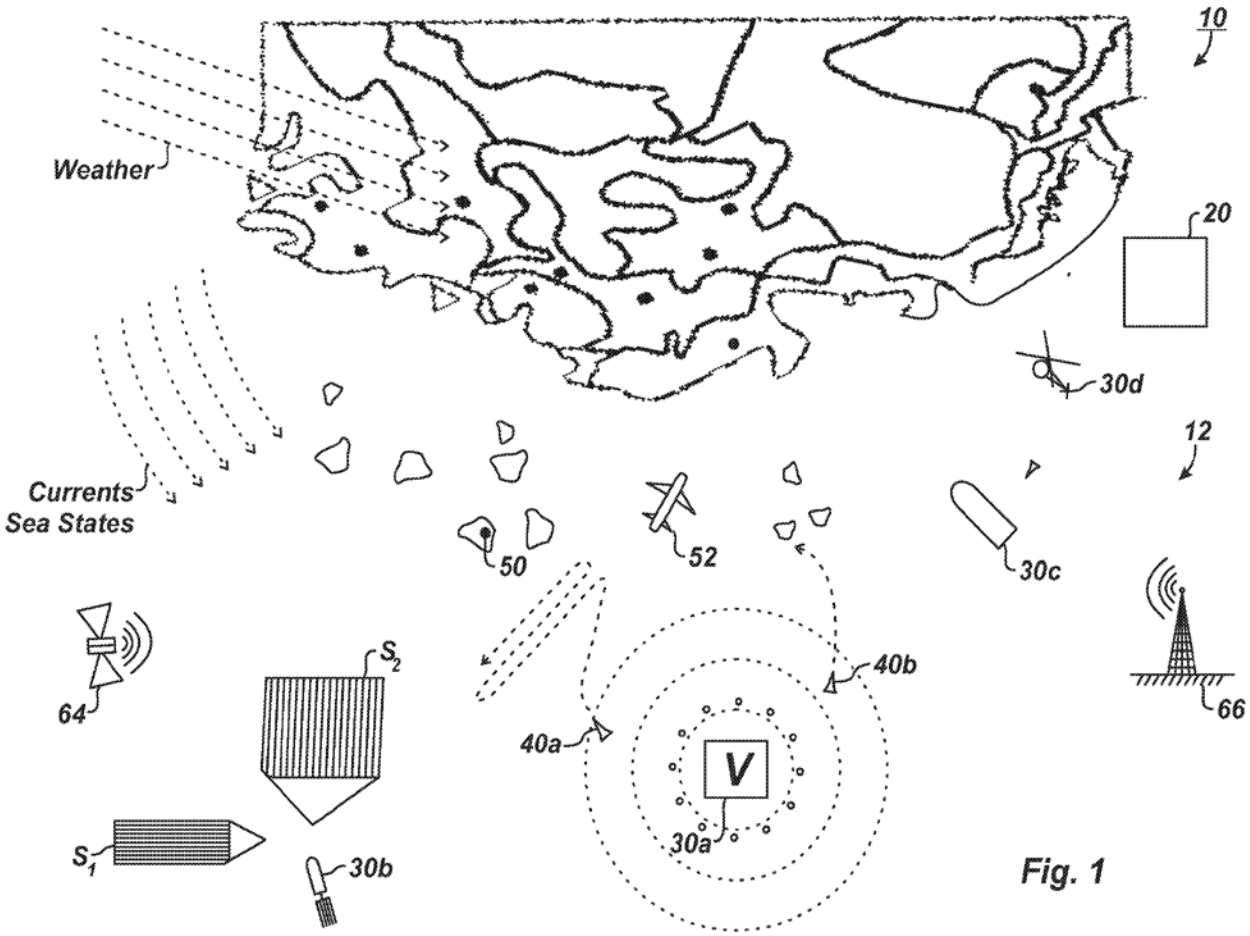

Fig. 1

To achieve the desired objectives, operators 30 need "situational awareness." Using the disclosed coordination system 10, operators 30 can understand the current situation including operational constraints or conflicts, awareness of future plans, including operational constraints or conflicts, and perception of the future state of operations in the marine field 12. As noted above, the marine field 12 may involve several operators 30 performing different and dissimilar operations over time. At the same time, the operators 30 and their operations are subject to changing operational conditions, environmental conditions, marine obstacles, threats, changes in the operators' plans, and the like. Therefore, the operators 30 (e.g., production vessel, marine structure, support vessel, seismic vessel, etc.) need to coordinate their operational plans, anticipate conflicts or issues, and defend against threats from obstacles, weather, and other conditions so all of the various marine operations can

be efficiently completed in the marine field 12 and the vessels, structures, etc. can be sufficiently protected. If conditions become too conflicted, for example, operators 30 may need to suspend operations. If threats become too dangerous, operators 30 may need to move a vessel, structure, etc. away until it is safe to return to normal operations. Being able to avoid problems or to handle them reliably can be of utmost importance to the operators 30. The operators may also coordinate their operations in order to be more efficient in how they work. Figure 5A below illustrates a process of the claimed invention.

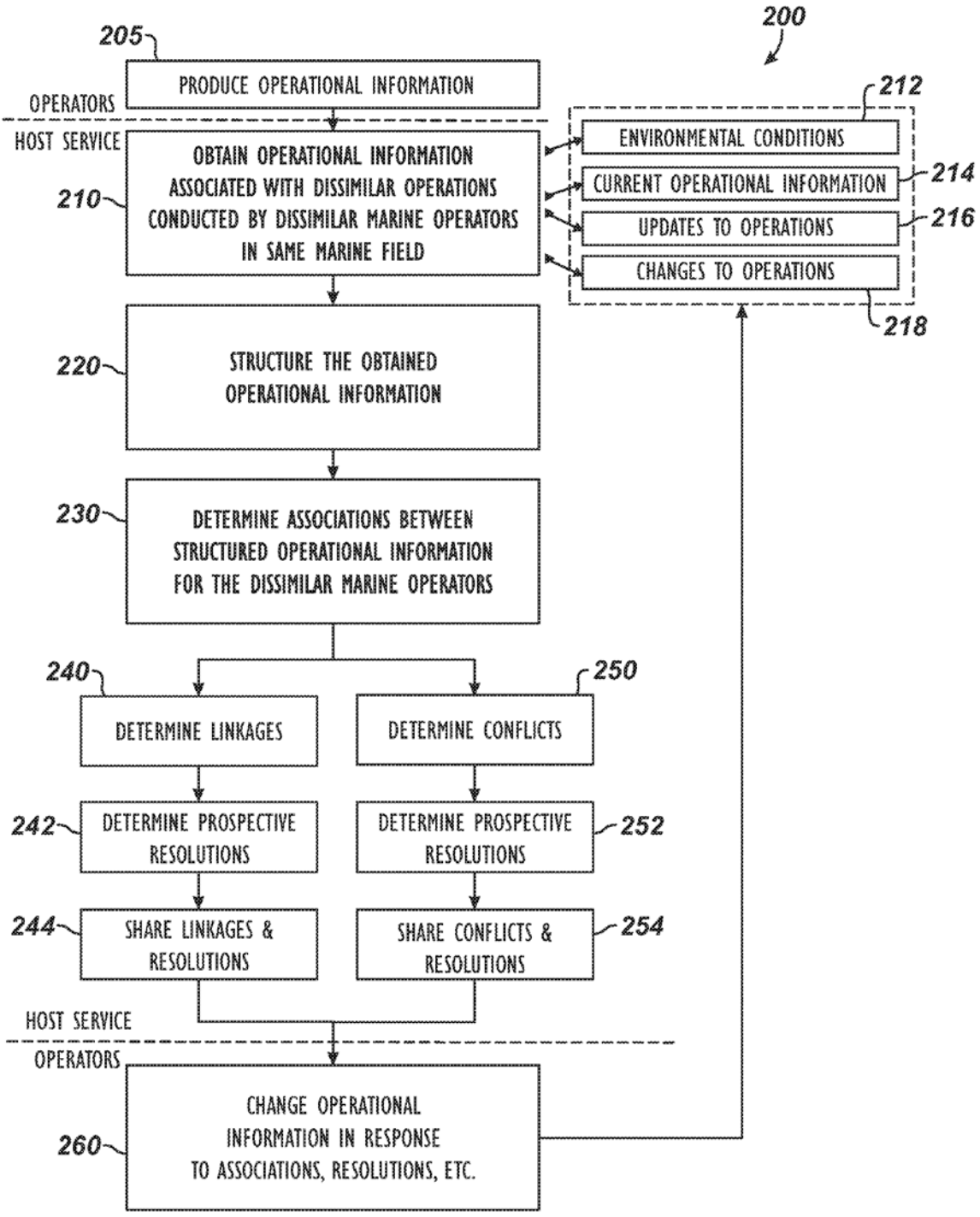

Fig. 5A

7 Prior to the hearing I agreed that the applicant could file an amended claim set (main claim set) and one further alternative claim set (first alternative claim set) for my consideration at the hearing. Both sets of claims were filed on 11 September 2019. The main claim set has thirty-one claims including two independent claims – claims 1 and 31. The independent claims are set out below:

> *1. A method of coordinating dissimilar operations of at least one of exploration, drilling, and production conducted by a plurality of dissimilar marine operators in a same marine field, the method comprising:*
>
> *obtaining with a network system, in real-time at a host service using communications equipment, operational information from a planning tool at a networked device of each respective dissimilar marine operators, the operational information associated with the dissimilar operations conducted by the dissimilar marine operators in the same marine field;*
>
> *structuring with the network system, in real-time at the host service using processing equipment, the obtained operational information;*
>
> *determining with the network system, automatically in real-time at the host service or at dissimilar marine operators using processing equipment, associations between the structured operational information for the dissimilar marine operators, wherein the determined associations comprise linkages and conflicts between the operational information, linkages being tasks which coincide in time in order to make the dissimilar operations more efficient or which conserve time or space in the marine field and conflicts being tasks which are incompatible with one another;*
>
> *sharing with the network system, in real-time with communications equipment, the structured operational information and determined associations with the planning tool of each respective dissimilar marine operator;*
>
> *generating, in real-time at the planning tool of each respective dissimilar marine operator using processing equipment, visual and temporal representations of the dissimilar operations in past, present and future time periods to allow for real-time visual display on a user interface of the planning tool of each respective dissimilar marine operator, the visual and temporal representations dependent on the structured operational information and the determined associations; and*
>
> *performing, by at least two of the dissimilar marine operators, at least two respective operations of the dissimilar operations as defined by at least one of the linkages.*
>
> *31. A system for coordinating dissimilar operations of at least one of exploration, drilling, and production conducted by a plurality of dissimilar marine operators in a same marine field, the system comprising:*
>
> *network communication equipment obtaining operational information in real-time at a host service from a planning tool at a networked device of each*

respective dissimilar marine operators, the operational information associated with the dissimilar operations conducted by the dissimilar marine operators in the same marine field;

memory storing the obtained operational information;

processing equipment operatively coupled to the network communication equipment and the memory, the processing equipment being configured to:

structure the obtained operational information at the host service, determine associations at the host service or at the dissimilar marine operators, the associations determined between the structured operational information, wherein the determined associations comprise linkages and conflicts between the operational information, linkages being tasks which coincide in time in order to make dissimilar operations more efficient or conserve time or space in the marine field and conflicts being tasks which are incompatible with one another,

share, in real-time via the network communication equipment, the structured operational information and determined associations with the planning tool of each respective dissimilar marine operator, generate, in real-time, visual and temporal representations of the dissimilar operations in past, present and future time periods for real-time visual display, the visual and temporal representations dependent on the structured operational information and determined associations;

user interface at the planning tool of each dissimilar marine operator to visually display the visual and temporal representations of the dissimilar operations; and first and second marine operators of the plurality of dissimilar marine operators, arranged to perform at least first and second respective operations of the marine operations of the dissimilar marine operations as defined by at least one of the linkages.

8 I will consider the first alternative claim set should I find the main claim set to be excluded under section 1(2).

The Issues to be decided

9 The issue for me to decide is patentability i.e. whether the claimed invention relates to excluded subject matter, and in particular whether the invention falls into one of the categories set out in section 1(2)(c) of the Patents Act 1977 as a method of doing business and/or a program for a computer as such.

The law

10 The examiner has raised an objection under section 1(2) of the Patents Act 1977 that the invention 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.

11 The examiner and the applicant agree that the assessment of patentability under section 1(2) is governed by the judgment of the Court of Appeal in *Aerotel*[1], as further interpreted by the Court of Appeal in *Symbian*[2].

12 In *Aerotel*, the court reviewed the case law on the interpretation of section 1(2) and approved a four-step test for the assessment of what is often called "excluded matter", as follows:

Step one: properly construe the claim

Step two: identify the actual contribution (although at the application stage this might have to be the alleged contribution)

Step three: ask whether it falls solely within the excluded matter

Step four: check whether the actual or alleged contribution is actually technical in nature.

13 Subsequently, the Court of Appeal in *Symbian* made clear that the *Aerotel* test is not intended to provide a departure from the previous requirement set out in case law, namely that the invention must provide a "technical contribution" if it is not to fall within excluded matter. The *Aerotel* test has subsequently been endorsed by the Court of Appeal in its decisions in both *HTC*[3] and *Lantana*[4].

14 Lewison J (as he then was) in *AT&T/CVON*[5] set out five signposts that he considered to be helpful when considering whether a computer program makes a

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[1] *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371, [2007] RPC 7
[2] *Symbian Ltd's Application* [2008] EWCA Civ 1066, [2009] RPC 1
[3] *HTC Europe Co Ltd v Apple Inc* [2013] RPC 30
[4] *Lantana v Comptroller-General of Patents, Designs and Trade Marks* [2014] EWCA Civ 1463
[5] *AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

technical contribution. In *HTC* the signposts were reformulated slightly in light of the decision in *Gemstar*[6]. The signposts are:

> *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.*

15 It should be clear that the signposts are merely guidelines; although they provide a useful aid in assessing the technical character of a claimed invention, they were not intended to provide a definitive test (as Lewison LJ's obiter remarks in paragraph 149 of *HTC* make clear). Several judgments have emphasised this point - John Baldwin QC (sitting as a Deputy Judge) in *Really Virtual*[7] noted that the signposts, although useful, are no more than signposts and that there will be some cases in which they are more helpful than in others. Kitchin LJ made similar remarks in paragraph 51 of *HTC* that their usefulness does not mean they will be determinative in every case.

Arguments and analysis

16 At the hearing Mr Mitchell discussed the amendments made to independent claim 1 and identified four key points in the claim which he considers to bring out the technical nature of the claim.

17 Firstly, the claim is firmly tied to the technical field of offshore exploration, drilling and production, which would be understood by the intended reader as being for the hydrocarbon production (Oil and Gas) industry. The dissimilar operations that are claimed must be one of the three types claimed, and moreover each of these three types of operation is inherently technical in nature. The claim does not cover a marine operation which might be described as non-technical e.g. a holiday cruise.

18 Secondly, the claim makes specific the "associations" and "linkages" or "conflicts. The claim recites "*linkages being tasks which coincide in time in order to make the dissimilar operations more efficient or which conserve time or space in the marine field and conflicts being tasks which are incompatible with one another*". Again, these terms need to be interpreted in light of the technical field defined by the claim

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[6] *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

[7] *Really Virtual Co Ltd v UK Intellectual Property Office [2012] EWHC 1086 (Ch)*

preamble i.e. that they are tasks necessary for one of exploration, drilling or production.

19 Thirdly, the operation of the user interface is limited to displaying the structured operational information and the determined associations, in the form of the conflicts and linkages.

20 And finally, the method ends with the step of "*performing, by at least two of the dissimilar marine operators, at least two respective operations of the dissimilar operations as defined by at least one of the linkages*". The claim, therefore, is strictly tied to the physical act of performing the determined dissimilar operations having some form of synergy by the marine operators and, as a result, simply cannot be considered to be non-technical.

Step 1: Properly construe the claims

21 The first step of the test is to construe the claims. Both the examiner and the attorneys have raised various points concerning the construction of claim 1. Upon consideration of the various argument, in my opinion the independent claims are clear and the skilled reader would understand their meaning.

22 However, one point I would like to highlight, as it is key to the invention, is the consideration of the terms "dissimilar operators", "dissimilar operations", "linkages" and "conflicts. From reading the specification, and in particular the wording of claim 1, to my mind these terms are clear.

23 Firstly, the claimed method requires the dissimilar operators and operations must be within the fields of exploration, drilling or production. Paragraph [0002] of the application as filed sets out the technical field of the invention as relating generally to operations planning, and more particularly to a network system and graphical user interfaces to assist with planning of exploration, drilling, and production operations for various marine operators in an oil and gas marine field. The skilled reader would, as argued by the attorney in paragraph 17 above, understand that the claimed method is directed to exploration, drilling, and production operations for various marine operators in an oil and gas marine field and that the dissimilar operators and operations are related to this field. One example described in the application being a Floating Storage Unit and a seismic vessel.

24 I do not agree with the examiner's assertion that the terms "linkages" and "conflicts" are vague and, in my view, the skilled reader would understand their meaning. The terms "linkages" and "conflicts" as defined by the independent claims to mean tasks which coincide in time in order to make the operations more efficient or which conserve time/space in the marine field and tasks which are incompatible with one another respectively. I do not believe any further explanation of the term "conflict" is needed.

25 As argued by Mr Wallin there are operations which can be performed synergistically together i.e. linkages. Once the synergy between operations has been identified then they can be performed synergistically in a different way. The description explains a linkage may occur where one of the operator's tasks coincides in time with another operator's task as this may make the operations more efficient or may conserve time

or space in the marine field. One particular example of this involves the simultaneous sharing of seismic source signals during seismic acquisition operations. In this regard, one seismic operator may provide seismic source signals with air guns or the like as the operator acquires seismic signals. Another seismic operator can then share those source signals as this other operator performs its own seismic acquisition. Alternatively, data from one of the operator's tasks can be shared with another operator to prevent the need of obtaining duplicative data.

26 The attorneys consider the claim should be construed as a system for obtaining information from different exploration, drilling and production actors in a marine field, identifying incompatible tasks and compatible tasks between the different operators, providing visual and temporal representations of that information to those operators and then implementing a modified version of the operators' tasks in order to improve efficiency. I have no issue with this.

Step 2: Identifying the actual or alleged contribution

27 The examiner and attorneys have not reached agreement on what is the technical contribution of the invention. The examiner considers the contribution to be a planning system/method for finding problems and efficiencies between information about operations performed by exploration, drilling or production operators in a marine field, and displaying that information to the user.

28 The attorneys disagree with the examiner's stance that the performance step does not form part of the contribution. Mr Mitchell explained that it is important to note that what is performed is not what was going to be performed before the invention has been implemented. It's the performance of an improved operation i.e. the performance of the positive synergistic linkages.

29 Again, after careful consideration, I find myself in agreement with Mr Mitchell and Mr Wallin. As Mr Mitchell discussed at the hearing the nub of the invention lies in determining the improvements, improving a physical operation and subsequently performing that operation. The claimed invention identifies "linkages", which are used to define and improve tasks to be performed by operators in a more coordinated and efficient manner. The performing of the improved tasks in light of the identified "linkages" and not merely carrying out the tasks as would have happened forms part of the contribution in my opinion.

30 The attorneys believe the contribution can be summarised as the provision of a situational awareness visualisation system for marine operators undertaking exploration, drilling, or production operations, that provides visual and temporal representations of other marine operators operating in the same marine field and undertaking such operations, those visual and temporal representations being augmented by linkage and conflict information which shows respectively which tasks operators are undertaking that are complementary to each other and hence may be performed together in a synergistic fashion, and those which are in conflict and need to be kept separate and, finally, performing by at least two dissimilar marine operators, at least two of their respective dissimilar marine operations in accordance with at least one linkage. I am persuaded by this assessment of the contribution and I am happy to adopt it.

Steps 3 and 4: Does the contribution fall solely within excluded matter/is it technical in nature?

31 What I must now decide is whether the contribution identified above relates solely to a program for a computer as such and/or a method of doing business as such. This corresponds to step three of the Aerotel test.

32 The fourth step of the test is to check whether the contribution is technical in nature. In paragraph 46 of Aerotel it is stated that applying this fourth step may not be necessary because the third step should have covered the question. This is because a contribution which consists solely of excluded matter will not count as being a "technical contribution" and will not, as the fourth step puts it, be "technical in nature". Similarly, a contribution which consists of more than excluded matter will be a "technical contribution" and so will be "technical in nature".

Computer program

33 The attorneys contend that as the claimed invention makes operations performed by the operators more efficient through the determination of positive synergistic linkages between the operations, the contribution made by the invention has a technical effect on the operation. It is argued that the operations themselves are clearly technical in nature and thus making the operations more efficient by coordinating synergistic operations must be considered technical. The attorneys refer to signpost (iv) which asks, "*whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer*" and from this a program meeting signpost (iv) would be considered to provide a technical contribution. By direct analogy, it is argued that the same reasoning must apply and the claimed invention which makes the operations performed by the operators more efficient must also be considered to provide a technical contribution.

34 In support of their argument the attorneys have referred to O/112/18 wherein the Hearing Officer considered *Halliburton Energy Services Inc*[8] with regard to the task performed by the computer. In this regard, the Hearing Officer highlighted that "*when the task is not something within the excluded categories then it is likely that the technical contribution has been revealed and that the invention is patentable"*. In light of this, it is argued that as the computer program of the claimed invention performs the task of improving a physical marine operation, the contribution relates to patentable subject matter.

35 The attorneys have highlighted signpost (i) and assert that the claimed invention clearly has a "technical effect on a process which is carried on outside the computer" as the process directly effects two marine operations which are made more efficient as a result. The examiner maintains that the way that the operations are performed by the operators is not changed in any way. It is just the timing/scheduling of the operations that is altered. As such, there is no technical effect on the operation outside of the computer.

36 I am minded to agree with the attorneys reasoning. In my view, the contribution does not lie solely within the computer program exclusion. The determination of linkages

[8] *Halliburton Energy Services Inc., [2011] EWHC 2508 (Pat)*

between synergistic operations such that they may be performed in a more efficient manner amounts to more than merely timing/scheduling of operations. The method makes a technical contribution by providing and implementing more efficient operations within a marine field.

Business method

37 Looking at the application as a whole to analyse what the method does externally to the computer system, the method provides a way of coordinating dissimilar operations of at least one of exploration, drilling, and production conducted by a plurality of dissimilar marine operators in a same marine field. To my mind, the identification of linkages between dissimilar operators performing dissimilar operations in order that they coordinate their respective operations so that they operate in a more efficient manner provides, as discussed above, a technical contribution. Therefore, I do not consider a contribution made in providing and implementing more efficient operations within a marine field to lie solely within the business method exclusion.

38 Looking at the fourth step, as discussed above I consider the contribution to be technical in nature.

Other Office decisions

39 The examiner has referred to previous Office decisions O/597/15 and O/315/12 which she considers to have similarities with the present application. In O/597/15 a train timetabling system was found to be excluded. The trains were re-scheduled to depart at different times or from different platforms in the event of some problem or delay. The attorneys have argued that the trains themselves operate no differently it was merely a rescheduled timetable. By contrast, the claimed invention identifies linkages between synergistic operations of dissimilar operators and subsequently performs those operations in accordance with the linkage. I agree with the attorneys that in implementing the linkages the operations are changed beyond merely adjusting the timings of those operations e.g. a first seismic operator providing seismic source signals whilst both the first and second seismic operators work side by side without interference in acquiring seismic signals. This prevents duplication of operation with both seismic operators not providing seismic signals.

40 The examiner has referred to O/315/12 where a claim directed to monitoring and identifying the position of people and packages in a transportation network was found to be excluded. The examiner argues that the field of transportation is clearly a technical field, and thus limiting the contribution in such a way (i.e. to exploration, drilling and production in a marine field in the claimed invention) is not sufficient to form the basis of a technical contribution. As such, claiming that the invention of the application in suit relates solely to a technical field is not sufficient for the claim to be inherently technical, or to form a technical contribution. I agree with the examiner that the fact that a claim is directed to a technical field is not enough in itself to save the claim from exclusion. However, what is important is whether the identified contribution falls within excluded matter and is it technical in nature. In this case, as discussed above, I believe the contribution to not be excluded.

41 Furthermore, I am not bound to follow the Hearing Officer's decision in either of these cases and having considered them I am satisfied that there are sufficient differences between the present application and those decisions that nothing is to be gained from further consideration thereof. As Pumfrey J said at paragraph 186 in *Research in Motion*[9]:

> *"The test is a case-by-case test, and little or no benefit is to be gained by drawing analogies with other cases decided on different facts in relation to different inventions"*

Summary

42 It follows therefore that I find the main claim set allowable and there is no need for me to consider the first alternative claim set.

Outstanding issues

43 In her pre-hearing report the examiner has stated that some minor clarity and support objections may still be outstanding.

Conclusion

44 I find that the contribution made by the claimed invention is not excluded as a computer program or business method under section 1(2). I therefore remit the application to the examiner for further processing.

Appeal

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

C. L. Davies
Deputy Director, acting for the Comptroller

[9] *Research in Motion UK Ltd v Inpro Licensing* [2006] RPC 20