



PATENTS ACT 1977

APPLICANT Halliburton Energy Services, Inc.

ISSUE Whether patent application GB1719887.0 complies
with the requirements of sections 1(1)(b) and 1(1)(d)

HEARING OFFICER B Micklewright

DECISION

Introduction

- 1 Patent application GB1719887.0 is a national phase application for international application WO 2017/003491, filed on 2 July 2015 and published under the Patent Cooperation Treaty (PCT) on 5 January 2017. It has been allocated the GB publication number GB2554326 A.
- 2 The examiner originally issued an examination report stating that the claimed invention was excluded from patentability under sections 1(1)(d) and 1(2) of the Patent Act 1977 ("the Act") as a program for a computer as such and a method of doing business as such. The claims were amended a number of times during the prosecution of the application and the examiner raised other objections at various points, including clarity, sufficiency and inventive step. The latest set of claims was filed on 24 May 2022 and the issues referred to me for a decision are excluded subject matter and inventive step. The applicant did not take up the option of an oral hearing and the matter was therefore referred to me for a decision on the papers. The applicant has made no further submissions following the examiner's latest communication dated 14 June 2022 but I have considered all the applicant's submissions on file.

The invention

- 3 The invention relates generally to facilitating meetings using cognitive computers. Cognitive computers are referred to in the specification as artificial neural networks, neuromorphic and synaptronic systems and neurosynaptic systems. They are described as being modelled after the mammalian brain.
- 4 In the present application the cognitive computer is used to intelligently facilitate meetings. It is an active participant and behaves in a way similar to a human participant but can also draw on vast resources of information, for example from the

Internet. The computer can also act as a secretary to the meeting and can manage the meeting and identify key issues by monitoring conversations. The computer can respond to requests and can provide a ranked list of recommendations.

- 5 A specific example discussed in the application relates to oilfield operations. The claims originally related to the general concept but were narrowed during the prosecution of the application and now relate only to meetings in the field of oilfield operations.
- 6 Specifically, the invention now claimed relates to a system for facilitating a meeting to discuss placement of a new well. A cognitive computer collects information during the meeting and automatically determines that a new well is being planned based on this information. The computer accesses resources from information repositories. These repositories provide real-time data relating to drilling, fracturing, cementing or seismic operations and also formation properties. When a meeting participant makes a request for an optimal drilling site of the new well in an oilfield, the cognitive computer uses the formation properties to generate oilfield operations model scenarios using oilfield operations models and performs a probabilistic determination regarding the various possible outcomes of each scenario. It then makes a recommendation regarding the optimal drilling site to the participants of the meeting based on a ranking algorithm.
- 7 The latest set of claims was filed on 24 May 2022. Of the 18 claims, claims 1, 10 and 17 are independent claims and relate to a system, a cognitive computer and a method respectively. Claim 10 includes more details of the nature of the cognitive computer itself but otherwise the claims are similar in scope. As will become apparent, these details are not significant to my decision and, apart from a brief consideration when deciding the contribution made by the claimed invention and its inventive concept, I will base my decision on the wording of claim 1 which states:

1. A system for facilitating a meeting to discuss placement of a new well, comprising:

a cognitive computer comprising neurosynaptic processing logic, the cognitive computer configured to collect information during the meeting and automatically determine that a new well is being planned based on the collected information;

an input interface coupled to the cognitive computer; and

one or more information repositories accessible to the neurosynaptic processing logic,

wherein, during a meeting of participants that includes the neurosynaptic processing logic, the neurosynaptic processing logic, subsequently to automatically determining that a new well is being planned, accesses resources from the one or more information repositories based on a request for an optimal drilling site for the new well in an oilfield received from one or more participants via the input interface, the one or more information repositories including sources that provide real-time data pertaining to drilling, fracturing, cementing, or seismic operations, the resources including formation properties, wherein the neuroprocessing logic: uses the formation properties to generate oilfield operations model scenarios using oilfield operations models; and performs a probabilistic determination regarding the various possible outcomes of each oilfield operations model scenario, and

wherein, based on said probabilistic determination, the neurosynaptic processing logic provides a recommendation regarding the optimal drilling site to the participants, the recommendation based on a ranking algorithm of the cognitive computer.

The law

Inventive step

8 Section 1(1) of the Patents Act 1977 states that

1(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –

...

(b) it involves an inventive step;

...

9 Section 3 then explains what is meant by an inventive step.

3. 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.

10 Section 2(2) explains what is meant by the state of the art for the purposes of inventive step.

2(2) The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, a process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.

11 As such, a patent cannot be granted if the claimed invention is obvious in the light of any document which was made available to the public before the priority date of the invention.

12 In *Windsurfing International Inc v Tabur Marine (Great Britain) Ltd*¹ the Court of Appeal formulated a four-step approach to assessing obviousness. This approach was reformulated in *Pozzoli Spa v BDMO SA*² as follows:

(1)(a) Identify the notional “person skilled in the art”

(1)(b) Identify the relevant common general knowledge of that person;

(2) Identify the inventive concept of the claim in question or if that cannot readily be 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 the claim as construed;

¹ *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd* [1985] RPC 59

² *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 which would have been obvious to the person skilled in the art or do they require any degree of invention?

- 13 In *SABAF SpA v MFI Furniture Centres*³ Lord Hoffman held that before you can ask whether the invention involves an inventive step, you first have to decide what the invention is. In particular, the first step is to decide whether you are dealing with one invention or, for the purposes of section 3, two or more inventions. If two integers interact upon each other, if there is synergy between them, they constitute a single invention having a combined effect and one applies section 3 to the idea of combining them. But if each integer performs its own proper function independently of any of the others, and the claim is a mere aggregation or juxtaposition of features, then each is, for the purposes of section 3, a separate invention. The concept was applied in *Garmin (Europe) Ltd v Koninklijke Philips N.V.*⁴ (at paragraphs 182-189) where the synergy between a portable performance monitor and a wider feedback system was considered. The combination of a series of known or obvious features, each playing its usual part in the final entity, will be a matter of design or mere collocation, not of invention,
- 14 In *SABAF* Lord Hoffman quoted with approval passages from the EPO Guidelines for Substantive Examination, providing guidance on how to determine whether two features display synergy. This guidance was re-stated and further explained in the EPO Technical Board of Appeal decision in T 1054/05:

"Two features interact synergistically if their functions are interrelated and lead to an additional effect that goes beyond the sum of the effects of each feature taken in isolation. It is not enough that the features solve the same technical problem or that their effects are of the same kind and add up to an increased but otherwise unchanged effect."

Excluded subject matter

- 15 Section 1(2) of the Act states:

1(2) It is hereby declared that the following (amongst other things) are not inventions for the purpose of the Act, that is to say, anything which consists of-

- (a) a discovery, scientific theory or mathematical method;
- (b) a literary, a 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 program for 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.

³ *SABAF SpA v MFI Furniture Centres Ltd* [2005] RPC 10

⁴ *Garmin (Europe) Ltd v Koninklijke Philips N.V.* [2019] EWHC 107

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

- (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.*

17 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 previous UK case law. Kitchen LJ noted in *HTC v Apple*⁶ 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”.

18 Lewison J in *AT&T/CVON*⁷ set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. Lewison LJ reformulated the signposts in *HTC v Apple* in light of the decision in *Gemstar*⁸. 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.*

Assessment – Inventive step

Step (1)(a): Identify the notional “person skilled in the art”

19 The applicant has not made any specific submissions in relation to the nature of the person skilled in the art. In my view the person skilled in the art would include a software developer with expertise in artificial intelligence and cognitive computing, an awareness at least that artificial intelligence systems can be used as personal assistants for such general purposes and some experience of developing such systems. The person skilled in the art would also include an engineer with experience of designing or using intelligent systems for planning new wells.

⁵ *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371

⁶ *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451

⁷ *AT&T Knowledge Venture/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

⁸ *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

Step (1)(b): Identify the relevant common general knowledge of that person

- 20 The applicant also did not provide any specific submissions in relation to this step. The common general knowledge of the person skilled in the art would in my view include a thorough knowledge of artificial intelligence systems and an understanding of how cognitive computers work and how they can be applied to real-world problems. They would be aware in particular that they can be used to provide personal assistant services and also that they could be used in oilfield operations such as identifying locations for new wells.

Step (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it

- 21 Claim 10 includes details of the cognitive computer itself, in particular in specifying that the computer comprises an input interface, a plurality of neurosynaptic cores operating in parallel (plus some details of these cores), and a network interface. These features are all entirely conventional in the way that they are defined and do not contribute to the inventive concept of the invention.

- 22 The examiner argues that inventive concept comprises two integers which have no interaction or synergy between them, namely:

(i) A cognitive computer which collects information during a meeting and uses it to automatically determine that a new well is being planned.

(ii) A cognitive computer which accesses resources including formation properties and real-time data, held in information repositories based on a request for an optimal drilling site for a new well received from a meeting participant and uses the formation properties but not the real-time data to generate oilfield operations model scenarios using oilfield operations models, performs a probabilistic determination regarding outcomes of the scenarios and, based on the determination, provides a recommendation regarding optimal drilling site based on a ranking algorithm.

- 23 The applicant submits that there is synergy between these two integers, particularly given amendments made to the claims following the examination report in which this argument was first raised. In particular they state:

“The amended independent claims require that the resources are accessed subsequently to the automatic determination that a new well is being planned. As discussed above, this provides a priming step for the cognitive computer in responding to the request, as a context is provided to the request. As the features are explicitly related to one another, and together contribute to an effect that goes beyond the sum of the effects of each feature in isolation, the features should be considered in combination and not as individual inventions.”

- 24 The applicant argues that automatically determining a new well is being planned prior to receiving a request for an optimal drilling site from a meeting participant increases the accuracy of the cognitive computer in responding to the request as it understands that the topic of the meeting is a new well and primes the cognitive computer for subsequent inputs from the participants. This is what the applicant means by a “priming step”.

- 25 I am not however convinced that a “priming step” is claimed in the independent claims. The claims only specify the order in which the two steps occur. They do not prescribe any further particular relationship between the two steps and do not disclose the use of the automatic determination step to improve the accuracy of the cognitive computer in responding to the request from a meeting participant.
- 26 The only passage I can find in the description which is relevant to these features is at page 4 line 24 to page 5 line 8:

“In an illustrative application, a cognitive computer may be present during a meeting of humans and/or other cognitive computers and may automatically and intuitively identify the meeting agenda by receiving input from the meeting (e.g., listening to the conversation between participants; viewing presentations using a camera; listening to participants using a microphone), by actively asking questions, by receiving a meeting agenda document, or the like. For instance, during a meeting convened between drilling engineers to discuss placement of a new well, the cognitive computer may collect information (e.g., by listening to the conversation between the engineers and viewing presentation materials displayed on a television screen) and may automatically and without prompting determine, using its cognitive algorithms and prior learning experiences, that a new well is being planned and understand all details pertaining to the potential new well.

As the meeting progresses, the cognitive computer is an active participant, asking questions, answering questions and making statements and suggestions. For example, a human participant may ask the cognitive computer to produce a map of a particular oilfield, and the cognitive computer may oblige by accessing relevant resources and displaying the map on a television screen in the meeting room. When asked for a recommendation on an optimal drilling site for a new well in that oilfield, the cognitive computer accesses any number of resources – such as those that include formation properties, time constraints, personnel constraints and financial constraints – to generate a recommendation.”

- 27 Whilst I accept there is implicit disclosure that the recommendation step can take place subsequent to the automatic determination step, there is no disclosure of the automatic determination step “priming” the step where an explicit request is made, or of it impacting at all on the way the cognitive computer deals with the request from the participant. It seems from the above paragraphs of the description that the automatic determination step takes place in order to identify the meeting agenda. There is certainly no disclosure of the automatic determination step improving the accuracy of dealing with the explicit request. I therefore do not agree with the applicant’s construction of the claim in this regard. Whilst, according to the claimed invention, the cognitive computer receives a meeting participant’s request for an optimal drilling site subsequent to automatically determining that a new well is being planned, there is in my view no substantive link between the two steps. The first step, automatically determining that a well is being planned, although perhaps used to identify the agenda of the meeting, is not used in any way to either prompt the computer to begin the process of identifying optimal drilling sites, or to contribute to that process. The mere fact that the first step takes place before the second itself does not in itself provide a synergistic link between the two steps, as this order has no substantive impact on the second step. There is no additional effect that goes beyond the two separate effects of the two integers. I therefore conclude that there is no synergistic link between the two integers of the claim. The inventive concepts of

the claimed invention are therefore the two integers identified above and there is no synergistic link between these two integers.

Step (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 the claim as construed

28 The examiner cited the following prior art documents in their most recent report:

D1: IEEE Internet Computing, Vol. 8, Issue 6, Nov-Dec 2004, Chen et al., "Intelligent agents meet the semantic Web in smart spaces", pages 69-79 (CHEN) see whole document

D2: WO 2014/196959 A1 (HEWLETT PACKARD) see e.g. paragraphs 10-11, 21, 33-55, 66-76 and figure 4

D3: WO 2014/200669 A2 (EXXONMOBIL) see especially paragraphs 2-6, 52-93 and figure 3

D4: WO 2014/146004 A2 (INTELLIGENT SOLUTIONS) see especially abstract and paragraphs 18, 28, 60-62, 90, 105-110

29 Documents D1 and D2 are cited against the first integer, and D3 and D4 are cited against the second integer. The applicant's arguments are focussed on the question of synergy between the two integers. I have already concluded in step (2) that there is no synergy before the two integers. I will therefore consider the inventiveness of each integer in turn.

Integer (i) A cognitive computer which collects information during a meeting and uses it to automatically determine that a new well is being planned

30 D1 and D2 both disclose using intelligent systems to facilitate meetings and infer information from context information arising out of the meeting. On page 69 of D1 it is stated "*This model necessarily extends to recognizing and representing the activities and tasks occurring in a location as well as the beliefs, desires, commitments and intentions of the people and software agents involved*". Moreover in Figure 1 and on page 72 it is apparent that meeting schedules, amongst other things, are accessible to the system which would enable the system to determine items for discussion at the meeting. On page 74 the document discusses meeting schedules and states that "*the context broker can reason about a meeting's various properties from its scheduled events ...*". I conclude that D1 discloses a system which collects information during a meeting and uses it to determine items for discussion at the meeting by way of a meeting agenda or schedule.

31 D2 clearly discloses automatically determining items being discussed at a meeting, for example in paragraph [0021] which states:

"[0021] In one example, after the identification system (100) infers a meaning of the conversational data based on the contextual data, the identification system (100) sends relevant data to an output device (130). In one example, during a meeting, the identification system (100) obtains conversational data about stock reports. The identification system (100) infers that relevant data from the conversational data is

stock reports. In this example, the stock reports are presented on an output device such as a laptop computer (130-1). As a result, the stock reports may be viewed by individuals in the meeting via the laptop computer (130-1)."

- 32 Both D1 and D2 relate to general such systems and neither specifically disclose the use of the disclosed systems to automatically determine that a new well is being planned.

Integer (ii) A cognitive computer which accesses resources including formation properties and real-time data, held in information repositories based on a request for an optimal drilling site for a new well received from a meeting participant and uses the formation properties but not the real-time data to generate oilfield operations model scenarios using oilfield operations models, performs a probabilistic determination regarding outcomes of the scenarios and, based on the determination, provides a recommendation regarding optimal drilling site based on a ranking algorithm

- 33 The examiner summarised the relevant disclosures of D3 and D4 in paragraph 41 and 42 of their report of 14 June 2022 as follows:

41. EXXONMOBIL discloses a model for predicting the performance of a well based on potential well parameter combinations. The model can use machine learning and neural network techniques (e.g. paras 52, 64, 71, 90). The model accesses resources including formation properties (e.g. paras 52, 70). The model can generate a number of potential well parameter combinations, including in parallel (e.g. paras 53-54, 60, 66-67). This discloses generating oilfield operations model scenarios from formation properties. The model can also account for and generate statistical uncertainties associated with the outcomes (e.g. paras 62, 66, 71, 92). This discloses a probabilistic determination regarding the various possible outcomes of the scenarios. A recommendation is provided regarding an optimal drilling site for a new well (e.g. paras 2, 4-5, 53, 72, 91, 94 and figure 3). The recommendation can be based on a ranking algorithm (see para 68).

42. INTELLIGENT SOLUTIONS discloses a model for determining where to place a new well. The model uses machine learning and neural network techniques (e.g. paras 18, 28, 90). The model accesses reservoir characteristics (e.g. paras 60-62, 106), generates parameters for a well, and performs an uncertainty analysis all as part of an iterative process (e.g. paras 106-110, claims). This discloses generating scenarios from formation properties and performing a probabilistic analysis on their outcomes. Implicitly, an iterative process involves a form of ranking.

- 34 Having read the documents, I agree with the examiner's analysis. The applicant has not made any substantive submissions on the disclosure of these documents.
- 35 Neither document discloses the step carrying out their disclosed processes of determining the location of a well specifically in response to a request made at a meeting.

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

- 36 As I have found that there is no synergy between the integers above, I will consider their obviousness separately.
- 37 In relation to the first integer, it seems to me that the skilled person, when considering the application of the general intelligent systems for facilitating meetings disclosed in D1 and D2, would consider them applicable to any meeting. Using a meeting as a means for making decisions and requests in relation to planning the location of new wells is trivial. If a meeting was convened to discuss planning a new well, the meeting making use of the systems of claims D1 and D2, the systems would automatically identify that a new well was planned. It would therefore be obvious for the skilled person to apply the intelligent systems of D1 and D2 to such types of meetings.
- 38 In relation to the second integer, as I have found, it would be trivial to decide to carry out the methods of D3 and D4 by calling a meeting to discuss plans and request that the intelligent systems of D3 and D4 produce a ranked list of locations for a well. The skilled person would understand this. I therefore consider such a step obvious.
- 39 In summary, I have found that the two integers of the independent claims do not, individually, make an inventive step. Moreover I have found that there is no synergy between the two integers. The independent claims therefore amount to a collocation of two obvious integers and therefore lack an inventive step.

Assessment – Excluded subject matter

- 40 I will consider each of the *Aerotel* steps in turn in my analysis.

(1) Properly construe the claim

- 41 I have already addressed the question as to whether the claim can be construed to include a “priming step” as has been suggested by the applicant and have concluded that it cannot, and nor is there disclosure in the specification of such a “priming step”. I have also found that there is no synergistic relation between the step of automatically determining that a well is being planned and the step of accessing resources following a request for an optimal drilling site for a new well.
- 42 The claim refers to the neurosynaptic processing logic accessing resources from one or more information repositories, these repositories including sources “that provide real-time data pertaining to drilling, fracturing, cementing, or seismic operations, the resources including formation properties”. The description contains only a passing reference to “real-time data” on page 14 and there is no explicit disclosure as to if or how this “real-time data” is used generate oilfield operations model scenarios. In any case I note that, according to the claims, it is only the formation properties that are used to generate oilfield operations model scenarios using oilfield operations models. The real-time data is not used at all for this purpose. I therefore construe the claim as being restricted to using formation properties to generate oilfield operations model scenarios, even though the neurosynaptic processing logic also has access to information repositories which include real-time data pertaining to drilling, fracturing, cementing, or seismic operations.

(2) Identify the actual contribution

43 Identifying the contribution in the second step of this test is critical and I refer to the following paragraph in *Aerotel* for guidance:

“43. The second step – identifying 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 judgement 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 the substance not form – which is surely what the legislator intended.”

44 The applicant identified the contribution, in their letter of 24 May 2022, as to provide a computer which is an active participant in the meeting, that is, the computer actively listens to the meeting and automatically determines that a new well is being planned, which allows the computer to begin accessing the relevant resources before an explicit request for an optimal drilling site is requested.

45 I do not however agree that it is a feature of the claimed invention that the computer accesses the relevant resources *before* an explicit request for an optimal drilling site is requested. Rather the claimed invention accesses such resources *in response to* such a request. This argument seems to relate to the “priming step” which I have discussed above and concluded that the claim cannot be construed to include such a step. Furthermore I am not convinced that the claim discloses a step in which the computer “actively listens” to the meeting to automatically determine that a new well is planned. The claim includes no information as to how it automatically determines that a new well is planned and, although one possibility is that the computer “actively listens” to the meeting, the claim is not restricted to such an approach. This does not therefore form part of the contribution.

46 I have found that the claimed invention does not make an inventive step. There is therefore a question as to whether there is anything the inventor has added to human knowledge. From what I understand from the documents cited and from a reading of the specification, the invention does not lie in a new way of facilitating meetings *per se*, nor in a new way of recommending an optimal drilling site. Both of these are known from the prior art, as is clear from my analysis of inventive step above. Rather the contribution lies in combining these known elements such that the computer uses known methods of recommending an optimal drilling site following a request made in a meeting. Although I have found this to be obvious in my analysis above, I will nevertheless consider whether such a contribution lies solely in the excluded fields or makes a technical contribution.

47 As I mentioned above, claim 10 includes details of the cognitive computer itself, in particular in specifying that the computer comprises an input interface, a plurality of neurosynaptic cores operating in parallel, and a network interface. These features are all entirely conventional in the way that they are defined and do not make a contribution in and of themselves. The contribution rather lies in the way the cognitive computer interacts with the other features of the claim. I will not therefore need to consider these elements further for the purpose of identifying the contribution.

48 Taking into account these factors, I consider the contribution to be:

Facilitating a meeting to discuss placement of a new well with a cognitive computer, the computer collecting information during the meeting and using this information to automatically determine that a new well is being planned, the computer subsequently, based on a request from one or more meeting participants, using known methods to access information resources including formation properties to provide a recommendation for an optimal drilling site based on a ranking algorithm.

49 Note that I have not included the reference to real-time data in the contribution as the computer does not use this data in its process of recommending an optimal drilling site.

(3) Ask whether it falls solely within the excluded subject matter; (4) Check whether the actual or alleged contribution is actually technical in nature

50 The applicant argued that the invention does not relate to merely facilitating administrative aspects of a meeting. Rather it performs a probabilistic analysis of real-time data based on oilfield operations being discussed, in order to provide relevant suggestions (recommendations) to participants of the meeting. The applicant therefore submitted that the invention does make a technical contribution as it is clearly related to a technical field, namely oilfield operations, and the contribution is not administrative in nature.

51 In addressing an argument made by the examiner that "providing suggestions as an aid to decision making is a secretarial task", the applicant submitted that this depended on the types of suggestions and also how they are arrived at. In the present case, according to the applicant, the cognitive computer provides a contribution above and beyond merely providing an administrative suggestion, based on probabilistic analysis of real-time data pertaining to oil and gas operations, and generated based on inputs received from participants such that the cognitive computer is an active participant at the meeting and able to understand the technical context of the meeting and provide additional technical analysis at the meeting.

52 The applicant also argued that the claims are directed towards the use of technical data (i.e. formation properties) in a probabilistic analysis of data, wherein the probabilistic analysis is directed towards the technical purpose of determining an optimal drilling site. The contribution, a method of determining an optimal drill site based on formation data, therefore falls outside the excluded areas.

53 The applicant referred to the EPO Enlarged Board of Appeal decision G1/19 (Pedestrian simulation)⁹ in support of their arguments. This decision relates to computer simulations and the applicant highlighted the comment in this decision that boundaries may contribute to technicality *"if they form the basis for a further technical use of the outcomes of the simulation, the further use at least implicitly specified in the claim"*. According to the applicant, in the present case it is clear that the outcome (the recommendation) forms the basis for deciding an optimal drilling site, at least partially informed by the technical data. Accordingly, the applicant

⁹ G 01/19 (Pedestrian simulation) OJ EPO 2021 A31,

considers that the recommendation forms the basis for a further technical use and is therefore technical in nature.

- 54 It is important in this analysis to focus on what I have determined the contribution to be. A new way of identifying optimal drilling sites by a cognitive computer using data sources including formation properties may be considered technical, but this is not the contribution made by the present invention as the disclosed process is part of the prior art discussed above in relation to inventive step. Rather the contribution lies in carrying out the known process for making such a recommendation in response to a request made by a participant at the meeting.
- 55 In my view it does not necessarily follow that an invention makes a technical contribution merely because the invention makes use of technical data. Something more is needed, such as a technical process which makes use of that data. Moreover the present case does not relate to a simulation and I am not convinced that the EPO Enlarged Board of Appeal decision G1/19 is of assistance in the present case.
- 56 Moreover it is not enough for the invention to merely have some relation to the field of oil drilling operations. Such a field would include many computer-implemented inventions, some which would not be excluded and some which would be. The invention must make a technical contribution in the relevant field, in this case the field of oil operations. The contribution I have identified makes no improvements to the way the cognitive computer analyses data and makes recommendations as to optimal drilling sites. Rather it relates to the cognitive computer carrying out such a process following a request made by a participant in a meeting. This seems to me to be an entirely administrative step relating to how the decision is taken to instruct the computer to carry out the process of making a recommendation. It does not make a technical contribution. Nor does the first integer of the claim, namely automatically determining that a well is being planned by collecting information from the meeting. This is also an entirely administrative process.
- 57 Although the applicant did not explicitly make submissions in relation to the *AT&T* signposts, I will nevertheless briefly consider the signposts in my decision.

Signpost i)

- 58 The claimed effect relates to a cognitive computer carrying out a known task, namely recommending an optimal drilling site, in response to a request made at a meeting. The effect seems to me to be entirely an administrative effect and there is no technical effect on a process which is carried on outside the computer.

Signposts ii)-iv)

- 59 These signposts relate to whether the claimed technical effect operates at the architecture level of the computer, makes the computer itself a better computer or makes the computer operate in a new way. In this case I will consider them together. In the present case it is evident that the invention does not have any such effect on the computer itself. The computer is working in the way it normally does. Moreover any effect relating to the way it facilitates the meeting by automatically determining that a new well is being planned or by identifying and responding to a request by a

participant for a new drilling location is not at the architecture level of the computer but is dependent on the application being run. These signposts do not therefore point to a technical contribution.

Signpost v)

- 60 The problem the present invention seeks to solve is an administrative problem as to when and how to instruct a computer to identify optimal drilling sites. The solution, namely to facilitate a meeting, is also an administrative solution. There is no technical problem being overcome in the present case, and no technical solution presented. This signpost does not therefore point to a technical contribution.
- 61 I have found that the contribution made by the invention is administrative in nature and the invention does not make a technical contribution. The invention therefore lies in the excluded field of a program for a computer as such. Moreover the administrative nature of the contribution places the contribution also in the excluded field of a method of doing business as such. The contribution therefore lies solely in these excluded fields.

Conclusion

- 62 I have found that the claimed invention does not make an inventive step as is required by section 1(1)(b) of the Act. I have also found that the claimed invention is excluded from patentability as a program for a computer as such and a method of doing business as such under sections 1(1)(d) and 1(2) of the Act. I therefore refuse the application under section 18(3).

Appeal

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

B Micklewright

Deputy Director, acting for the Comptroller