



PATENTS ACT 1977

APPLICANT	Landmark Graphics Corporation
ISSUE	Whether application GB 1601418.5 complies with Section 1(2) of the Patent Act 1977
HEARING OFFICER	Dr Stephen Brown

DECISION

Introduction

- 1 Patent Application GB 1601418.5 is the national phase of a PCT application published as WO 2015/034462 and has a filing date of 3rd September 2013. It was subsequently republished as GB 2531967 on 4th May 2016. Despite several rounds of correspondence, the applicant has been unable to convince the Examiner that the application is allowable under Section 1(2) of the Act. The applicant requested a hearing to resolve these matters.
- 2 This took place on 22nd April 2021 by video. The applicant was represented by Dr Mark Jones of Hoffmann Eitle, to whom I would add my thanks for his comprehensive skeleton arguments. I was assisted by Dr John Cullen.

The Application

- 3 The application concerns a method of visually representing hydrocarbon well activities. This visual representation is in the form of a bar chart, an example of which is shown in Figure 2a, reproduced below. The bar chart includes a plurality of event bars (labelled A-O at 212 of Figure 2a). Each event bar is associated with an occurrence of a well-activity (A-O at 202) such as coring, cementing, cost estimating or well planning for example. The position of each event bar on the chart provides timing information for its well activity and is determined using well drilling data from one or more wells. Event-bars are updated using real-time data from sensors located at a well. In an optional embodiment, at least two different wells are compared on a single chart. In another embodiment, a bar chart may be generated for a planned well on which construction has yet to commence. Event bars for a planned well are suggested based on aggregated data from past wells.

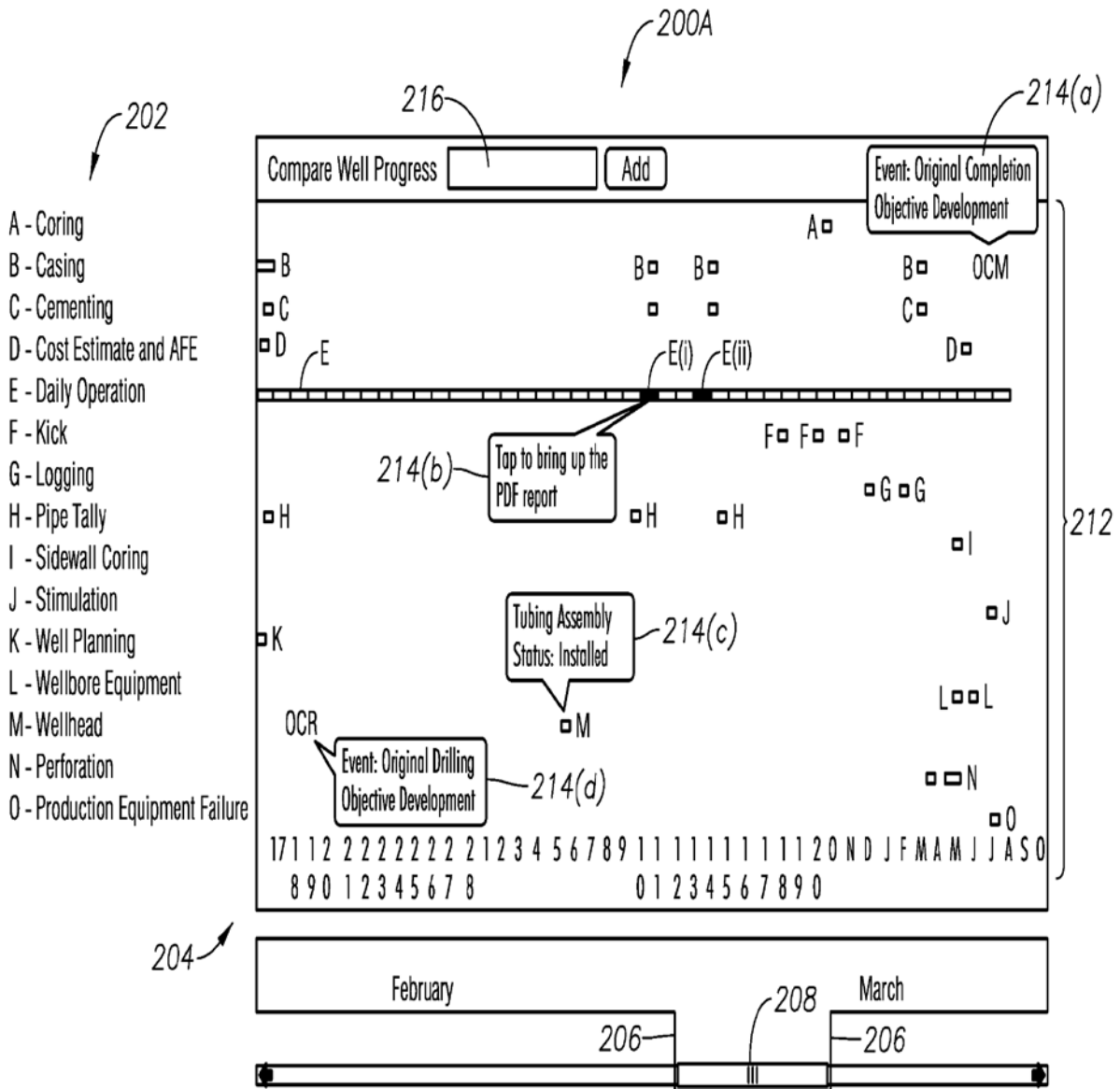


FIG. 2A

The Claims

4 The most recent claims were filed on 5 October 2020. I will base my decision on these claims. Dr Jones' skeleton argument helpfully included a copy of claim 1 divided into numerically labelled parts. I will reproduce this labelled claim here as it is convenient to refer to:

Claim 1.

i. A computer-implemented method to represent well activities, the method comprising:

ii. displaying a well activity listing for a first well comprising a plurality of well activities listed in chronological order,

- iii. *the well activities being operations that occur over a life cycle of a first well;*
- iv. *receiving well drilling data from a plurality of wells;*
- v. *automatically determining event data in response to well activities,*
- vi. *wherein the event data is determined from the well drilling data,*
- vii. *wherein the event data comprises a plurality of well activities, and a time amount associated with each well activity;*
- viii. *displaying a plurality of event bars, wherein each event bar corresponds to a different well activity;*
- ix. *displaying a time frame indicator;*
- x. *receiving time bar feedback with the time frame indicator from a user;*
- xi. *defining, in response to the time bar feedback, a time period in which to display the event bars,*
- xii. *wherein the event bars are displayed at a first time at which the corresponding well activity occurs within the defined time period;*
- xiii. *receiving real-time data related to the well activities at least from sensors located at a site of the first well; and*
- xiv. *updating the event bars to reflect the real-time data;*
- xv. *receiving a pop up indication from the user;*
- xvi. *displaying a pop up for a first event bar associated with a first well activity in response to the pop up indication;*
- xvii. *receiving a pop up selection from the user;*
- xviii. *accessing activity information associated with the first well activity in response to the pop up selection,*
- xix. *the activity information being updated based on the real-time data; and*
- xx. *presenting the activity information in response to the pop up selection.*

5 While there is a system claim, claim 13, a computer program product claim 14 and a computer-implemented method claim 15, each of these is dependent upon claim 1. Dr Jones agreed at the hearing that it is sufficient to consider only claim 1. Claims 13-15 will stand or fall with my decision on claim 1.

6 There is, however, one other dependent claim that is of interest, claim 4. I will reproduce it here:

Claim 4:

A computer-implemented method as defined in claim 1, wherein: the well activities are for a planned well; and the time at which each event bar occurs is determined based upon prior well activities from the plurality of wells.

The Law – Section 1(2)

- 7 The section of the Act concerning inventions excluded from patentability is Section 1(2). This reads:

“It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of –

...

(c) a scheme, rule or method for performing a mental act, playing a game or doing business or a program for a computer;

(d) the presentation of information;

but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.”

- 8 In order to decide whether an invention relates to subject matter excluded by Section 1(2), the Court of Appeal has said that the issue must be decided by answering the question of whether the invention reveals a technical contribution to the state of the art. The Court of Appeal in *Aerotel/Macrossan*¹ set out the following four-step approach to help decide the issue:

- 1) Properly construe the claim;
- 2) Identify the actual (or alleged) 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.

- 9 The operation of the approach is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is essentially a matter of determining what it is the inventor has really added to human knowledge, and involves looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution.

¹ *Aerotel Ltd v Telco Holdings Ltd (and others) and Macrossan’s Application* [2006] EWCA Civ 1371

- 10 The case law on computer implemented inventions has been further elaborated in *AT&T/CVON*² which provided five helpful signposts to apply when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*³, Lewison LJ reconsidered the fourth of these signposts and felt that it had been expressed too restrictively. The revised 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 make the computer a better computer in the sense of running more efficiently and effectively as a computer; and
 - v) whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

Application of the Aerotel Test

Step 1 - Properly construe the claim

- 11 The first step of the Aerotel test is to construe the claims. Given the complexity of claim 1, I will take some time over this step. I will begin by noting that part i of claim 1 (as listed above) refers to “a method to represent well activities”. It is interesting that “represent” is used here rather than a more active word such as “model” or “plan”. This language is entirely consistent with the title (“Well activity bar charts”) and the introductory paragraphs of the description.
- 12 Part ii relates to listing well-activities, for a first well, in chronological order. Such a list is shown at 202 of Fig. 2A, for example. Well-activities listed in the description include coring, casing, cementing and cost estimating amongst many other examples. Part iii is self-explanatory. It merely specifies what is meant by the term ‘well activities’.
- 13 Part iv of claim 1 specifies “*receiving well drilling data from a plurality of wells*”. I believe that it is important to emphasise that a plurality of wells are involved. Part v is “automatically determining event data in response to well activities”, with part vi adding that the event data is determined from the well drilling data of part iv. Part

² *AT&T Knowledge Ventures LP and CVON Innovations Limited v Comptroller General of Patents* [2009] EWHC 343

³ *HTC v Apple* [2013] EWCA Civ 451

vii adds that the event data comprises a plurality of activities and a time amount associated with each activity.

- 14 Construing parts iv-vii is not straightforward. Firstly, the term “event data” is not present in the application as originally filed. Parts v-vii were introduced into claim 1 through amendment on 26 May 2020. The attorney’s letter accompanying that amendment identified several passages of the description which the attorney argued provided support for the amendments. The most relevant of these passages appears to be lines 19-24 of page 8. Furthermore, from part (b) of Dr Jones’ summary of claim 1, it would seem he regards lines 10-20 of this page as the most relevant to parts v-vii. In the hearing, Dr Jones suggested that page 8 lay at the heart of the invention. I will therefore reproduce lines 10-24 of page 8 here:

“In other well planning embodiments, BCWR system 100 may generate a template automatically using data available from other wells in close proximity to the well being planned. BCWR system 100’s selection of these other wells may be based on the location (lat/long, region, etc.) of the planned well. BCWR system 100’s estimation of well activity time periods, materials or costs may be estimated automatically based on the data previously recorded for the specified area and uploaded via well data module 112. For example, if three wells were previously completed, BCWR system 100 may estimate the time for a planned well’s hole cleaning activity (and cost) based on an average of these three wells. Once BCWR system 100 generates the template (as shown in FIG. 2D, for example), BCWR system 100 may suggest the defined time period for the bar chart and/or event bars - thereafter, the user may edit the time period and/or event bars as desired. During editing, BCWR system 100 may display the time period length for an accurate selection. For example, when a user drops an object on the chart, the start and end for that particular activity can be displayed by BCWR system 100 on the tool tip, so the user can select the accurate place on the graph”.

- 15 This passage specifically describes a planning embodiment in which a “template” for a planned well is generated by aggregating data from other similar wells. This involves determining expected “time periods” for each of a plurality of well-activities to be performed by the planned well and hence the expected time periods for each of a plurality of its event bars. Fig. 2D provides an example of such a “template” with a suggested time period 204 for the bar chart and suggested event bar 212A-212D timing information.
- 16 Based on this embodiment and Dr Jones’ arguments at the hearing, one might construe parts iv-vii as: “automatically determining expected timing information (event data) for each occurrence of a plurality of different well activities of a planned well based on well drilling data from a plurality of other wells”. However, there are other embodiments in the description that do not involve any such ‘planning’. For example, where Figures 2A to 2C are discussed, at line 20 of page 4 to line 10 of page 7, these embodiments do not make any mention of planning. Rather, they relate to “*providing a visualisation of the data contained within well data module 112*” (lines 10 and 11 of page 4). Lines 24-30 of page 3 state “*Well data module 112 provides real-time robust data capture, storage, retrieval and integration of well activity data*”. As the embodiments of Figures 2A-2C make no mention of planning, it seems to me that they relate to providing a visualisation of historical well activities. I

also note that claim 1 makes no mention of planning, indeed the word “planned” doesn’t appear until claim 4.

- 17 With this in mind, I believe that Claim 1 has been carefully drafted to be broad enough to cover planning embodiments, historical well activity embodiments or embodiments which combine both planning and historical well activity. I will thus construe parts iv-vii as: “automatically determining timing information (event data) for each occurrence of a plurality of different well activities based on well drilling data from a plurality of other wells”. This might simply be historical information or expected timing for a planned well. The scope of claim 1 covers both possibilities.
- 18 Also, claim 1 does not explicitly link parts iv-vii to any other parts of the claim. However, it seems implicit that the timing information generated by parts iv-vii is most likely displayed in the same manner as the event bars in part viii and xii (see below). After all, they both represent the timing information of well activities and no alternative way of displaying such information is given in the application.
- 19 Part viii details that event bars (see, for example, 212A-212O of Fig. 2A) are displayed. Each event bar is associated with one of the listed well-activities. Although part viii claims that each event bar corresponds to a different well-activity, in the embodiment of Fig. 2A some well-activities have multiple different event bars. So, I will construe part viii as displaying an event bar for each *occurrence* of a well-activity. From the embodiment of Fig. 2A, I see that the horizontal position at which an event bar is displayed appears to be indicative of the start time of an occurrence of a well-activity. In Fig. 2A the length of event-bars is not uniform, so I suspect that the length of event-bars indicates the duration of a well activity (for example, as shown in Fig. 4). While these additional details are not explicitly part of claim 1, they do provide a helpful context when construing what is meant by ‘each event bar corresponds to a well activity’.
- 20 Parts ix-xii detail that the user may select a time period (e.g. “February” and “March” in Fig. 2A) and that event bars are displayed only within this chosen range. At least, that is how I construe these steps.
- 21 Parts xiii and xiv provide the additional limitation that event bars are updated in response to real-time sensor data representing well activities of the first well. This facet is discussed in a passage spanning lines 25-31 of page 8 of the description. This passage immediately follows a section describing a planning embodiment. However, I do not understand lines 25-31 of page 8 to be limited to planning embodiments because this passage begins “in yet another embodiment”.
- 22 Although part xiv claims “updating *the* event bars” it seems to me that not all well activities in the activity listings discussed in embodiments relate to purely technical features on which sensors could report. For example, it is difficult to envisage how sensor data could report on the “Cost Estimate” and “Well Planning” activities of Figure 2a. I will thus construe parts xiii and xiv as updating *at least some* event bars in response to real-time sensor data.
- 23 Parts xv-xx seem largely self-explanatory. They relate to providing a pop-up for an event bar which, if selected by a user, provides additional information. This additional

information is updated in real-time. Such a pop-up is shown in Figure 2B for example.

Step 2 - Identify the contribution

24 The next step of the Aerotel test is to identify the contribution. In the skeleton argument Dr Jones identified the contribution as:

“a new tool (in each aspect of the invention) for understanding the present state and likely future evolution of a real, physical system, here a well, which is simpler to use and provides a more accurate insight for the user”.

25 If I understood Dr Jones correctly, he regards the event bars as providing a model of the present and future evolution of the well. The contribution is thus a better tool for modelling oil wells. Dr Jones argued that since this tool is driven by real world data and results in a more accurate insight for the user it clearly provides a non-excluded technical effect.

26 As I have explained above, it seems to me that in planning embodiments, information from a plurality of wells is aggregated to provide suggested event bars for a future first well. In that respect, I can see how planning embodiments can be viewed as a model, albeit a very simple one, indicating how the first well is expected to evolve. Part xiii of claim 1 makes clear that event bars for a first well are updated in real-time using data from sensors at the site of the first well (i.e. the well for which data is to be displayed). This updating step then clearly does not provide any modelling but merely adds a new event bar corresponding to an actual occurrence of a well activity. The updating step thus requires that at least one of the event bars represents a present, or possibly past, state rather than a future state.

27 On balance, I am not persuaded that claim 1 is limited only to planning embodiments. I therefore cannot accept that modelling or understanding the future evolution of a well must form part of the contribution of *claim 1*. I will however return to this issue with regards to claim 4 later in this decision.

28 In contrast, the examiner considered the contribution to be:

A computer implemented method of presenting well drilling data as a bar chart wherein event data, comprising a plurality of well activities, is automatically determined from received well drilling data and displayed as event bars corresponding to a different well activity against well activities listed in chronological order, the event bars being updated in response to received real-time data. User interaction allows filtering of the displayed events for a time period defined by the user and drilling down into the data by presenting, as a pop-up, activity information associated with an event bar/pop-up selected by the user. The method may provide advantages to a user through displaying the data in a more accessible (to a human) manner.

- 29 The examiner's contribution is significantly more detailed than Dr Jones'. I agree with the examiner that displaying event bars on a bar chart lies at the heart of the invention and must appear in the contribution.
- 30 I note that Dr Jones' view takes no account of the 'date selection' feature of claim 1, nor of its 'pop-up indication' features. In my view, these merely relate to allowing a user to select what information on well-activities is displayed. I thus conclude that neither is a matter of significant substance and it does not form a key part of the contribution.
- 31 Given these points, and my construction of claim 1, I identify the contribution to be:

A computer implemented method of providing a visual representation of timing information for a plurality different well drilling activities as a bar chart comprising a plurality of event bars, each determined automatically from well drilling data received from at least one well and each event bar relating to a respective occurrence of a well activity, the bar chart being updated in response to received real-time data from sensors; the method thus displaying well drilling information in a form which is readily understandable to a human user.

Step 3 – Does the contribution fall solely within excluded subject matter

i. Program for a computer

- 32 The third step of the *Aerotel* test involves asking whether the identified contribution falls solely within the excluded categories. Clearly the invention is enacted by software running on a computer, so I will begin by considering whether the identified contribution is solely a program for a computer, as such.
- 33 At the hearing, Dr Jones argued that the AT&T signposts provide a non-exhaustive list of circumstances in which a technical contribution can occur. Therefore, even if none of the signposts applies it does not necessarily follow that the contribution is not technical. Whilst I agree with this in principle, it does not alter the need to identify a technical contribution. In line with office practice, I will thus consider the signposts where relevant.
- 34 Dr Jones next referred to BL O/029/19⁴, in which the hearing officer stated: "*It is trite law that giving visual indications automatically about conditions prevailing in an apparatus or system is basically a technical problem*". The original basis for this statement is the EPO Boards of Appeal decision T 115/85⁵. The invention in T115/85 related to converting a notification that an event had happened in an input/output device of a computer into an understandable instruction to the user, using a new table structure which made conversion of messages to text more efficient. The invention operated at a general level and was agnostic to the application being run on the computer.

⁴ BL O/029/19 [*General Electric Company*], at [26]

⁵ EPO Board of Appeal in T 115/85 [*IBM*]

- 35 I note that in AT&T/CVON⁶ Lewison J discussed the relevant passage from T 115/85, stating: “*the point that the Board is making is that the computer output results in something happening in the real world, namely the giving of visual indications. The claim related to things going on inside the workings of the computer, rather than any form of data processing*”. T115/85 is one of the cases which led Lewison J to arrive at the second AT&T signpost. The present invention relates to generating a new visual representation of drilling data, which representation is dependent on the data being processed⁷. I consider that the present invention falls within the scope of what Lewison J described as “mere data processing” rather than to “things going on inside the workings of a computer”. I thus conclude that the contribution is not at the level of the computer’s architecture and thus that the second AT&T signpost is not satisfied.
- 36 Returning to BL O/029/19, that case related to identifying faults which could lead to failure of a generator by evaluating data from sensors and providing a fault code indicating the cause of an anomaly, where necessary. The invention of BL O/029/19 did not include a step to automatically perform maintenance using the fault code. Nevertheless, the hearing officer decided that the claimed invention met the first AT&T signpost because it provided an improved method of identifying faulty components, which had real world implications for generator maintenance.
- 37 Dr Jones also referred to BL O/148/19⁸ and BL O/346/19⁹, which broadly relate to methods of displaying process control data, providing a process control system operator with more up-to-date or faster access to data. Neither invention explicitly required the operator to perform a control step using the displayed data but the reason for displaying the data was clearly to allow an operator to make timely decisions relating to the control of a process. In each case, the hearing officer decided that the first AT&T signpost was met.
- 38 My assessment of the contribution of the present invention does not contain any external control steps and nor for that matter does claim 1 itself. However, Dr Jones drew my attention to the sentence at lines 29-31 of page 10 of the description which does seem to suggest the possibility of using data displayed in accordance with the invention to perform a control operation in the real-world. The sentence reads: “*Accordingly, using the present disclosure, a well may be, planned, stimulated, etc., or an existing wellbore may be altered in real-time and/or further operations may be altered*”. On the other hand, the Background section of the description begins: “*In hydrocarbon exploration, accurately understanding the economic projections of a reservoir is vitally important*”. I am therefore unconvinced that the only reason for providing the data displayed by invention would be to control a well drilling operation. It seems to me that the invention could equally find use in economic, business or managerial fields as well. To my mind, the present invention is not implicitly tied to a control operation, or other technical process outside of the computer, as was the case in the trio of IPO decisions discussed above. If the present invention performs

⁶ AT&T Knowledge Ventures LP and CVON Innovations Limited v Comptroller General of Patents [2009] EWHC 343, at [25]

⁷ Which is not to say the way the data is represented is dependent on the data.

⁸ BL O/148/19 [*Fisher-Rosemount Systems*]

⁹ BL O/346/19 [*Fisher-Rosemount Systems*]

any task outside of the computer it is one of mere presentation of information, which is itself an excluded field.

- 39 Returning to BL O/148/19, Dr Jones drew my attention to paragraphs 44 and 48 of the decision, which he suggests shows that the hearing officer's decision was influenced by paragraph 27 of BL O/112/18¹⁰, where the hearing officer discussed the relevance of the field of endeavour of the invention. In excerpt, that paragraph reads:

"...It seems from this judgment (i.e. Halliburton¹¹) that one can take a step back from the actual advance over the state of the art when assessing the contribution for the purpose of section 1(2) and simply identify the field of endeavour in which the method is applied.... If that field of endeavour is a technical one then, according to Halliburton, there is a reasonable chance of it being a patentable invention under section 1(2). For computer-implemented inventions such as the ones in Halliburton and Vicom, it can be sufficient to determine whether the general task performed by the computer program is external to the computer and does not fall within one of the excluded areas in order to conclude that a technical contribution has been revealed...."

- 40 I agree that the field of endeavour of the present application (i.e. oil well drilling) is clearly a technical one. However, the final sentence of the above excerpt (and the next paragraph of the decision) make clear that *even if* an invention lies in a technical field of endeavour that is not the end of the matter; it is still necessary to demonstrate that the contribution itself is technical. Taking the field of endeavour into consideration may guard against an overly mechanistic comparison with the state of the art at step 2 of the Aerotel test but it does not obviate steps 3 and 4.
- 41 I note that the examiner referred to IPO decision BL O/657/17¹². Here the invention involved automatically collecting wellsite data from a plurality of sources, generating a report based on the wellsite data and automatically identifying wellsite errors, failures or inefficiencies from the report. To my mind, the facts of BL O/657/17 bear a greater resemblance to the facts of the present application than those of the other IPO decisions discussed above. In this decision the hearing officer decided that because a wellsite operator would need to read the report before deciding what action to take, the action taken was not part of the contribution made by the invention; the improvement over the prior art lay in automating the process of generating the report, not in taking actions outside of the computer. The hearing officer concluded that the first AT&T signpost was not satisfied, and the invention was excluded under Sections 1(2)(a), (c) and (d).
- 42 In his skeleton argument, Dr Jones attempted to distinguish the present invention from BL O/657/17 by arguing that the present invention does not merely automate a known process but rather provides a new tool which conditions a representation of a well with data derived from other wells, and provides insight into the present state and likely future evolution of the well. Dr Jones made a similar point, in a broader context, at the hearing. In effect, I believe that he was relying on the

¹⁰ BL O/112/18 [*Landmark Graphics Corporation's Applications*]

¹¹ Halliburton Energy Services, Inc v Smith International (North Sea) Ltd & Ors [2005] EWHC 1623 (pat)

¹² BL O/657/17 [*Halliburton Energy Services*] at [25] and [34]

planning/modelling features of the embodiments. However, as explained above, I do not consider these features to be part of the contribution because claim 1 is not limited to planning/modelling features. I thus disagree with this part of Dr Jones' argument.

- 43 Taking all of the above analysis of IPO decisions into account, I conclude that the present invention does not meet the first AT&T signpost. I can see no technical effect on a process which is carried on outside the computer.
- 44 In the skeleton argument it is suggested that using a time frame [parts ix to xii of claim 1] and a pop-up mechanism [parts xv to xx] reduces the amount of data which needs to be stored in memory. As reasoned above, neither the time frame or pop-up features appear in my assessment of the contribution, nor do they appear in Dr Jones' assessment come to that. Whilst time frame and pop-up features are present in claim 1, no reference is made in the claims, or indeed in the application as a whole, to the role of these features in reducing memory requirements. The motivation behind these features appears to be to provide information in a user selected format to aid comprehension. I can see no evidence that time frame or pop-up features result in memory being used more efficiently. I thus conclude that the present invention does not meet the fourth AT&T signpost.
- 45 The skeleton argument also briefly referred to IPO decision BL O/390/17¹³, which the hearing officer decided was not excluded from patentability. Dr Jones did not elaborate on the relevance of this case to the present invention (other than to identifying paragraph 65 of the decision). BL O/390/17 claimed a 3D radar system and the contribution was considered to extend to the system as a whole. This system included not just means for presenting data but also sampling means and means for generating the data to be presented. In contrast, the contribution in the present application does not extend to a system of hydrocarbon wells, or even a system for monitoring hydrocarbon wells, but to a method of presenting well data (albeit involving data received from sensors). In the hearing, Dr Jones did not argue that the contribution should extend to a system including hydrocarbon wells. Indeed, in the skeleton argument he summarised the invention as providing a "tool (which) defines a representation of an instance of a real, physical entity (a well)".
- 46 I have so far considered the first, second and fourth AT&T signposts and decided in each case that they are not met. Dr Jones did not provide any submissions in respect of the third or fifth signposts, so I will cover them only briefly. Regarding the third signpost, I can see no evidence of the computer itself operating in a new way. What it is doing is collecting and displaying data differently. The current invention thus does not meet the third signpost.
- 47 Considering the final signpost, the problem being overcome is how best to display data from a plurality of oil wells. I'm afraid I cannot see a non-excluded technical contribution from such a problem. While I accept Dr Jones' submission that the AT&T signposts are not an exhaustive list, I also can see no technical effect, beyond that of a program running on a computer, outside of the signposts either.

¹³ BL O/390/17 [*Accipter Radar Technologies, Inc.*] at [65]

48 At the hearing, Dr Jones referred to a paragraph of IPO decision BL O/112/118¹⁴ in which the hearing officer said:

“Mr Russell and Dr Jones suggest that an applicant should be given the benefit of the doubt unless there is no reasonable doubt to be had. Insofar as this reasonable doubt is the same as the substantial doubt to which Mann J refers, I can agree with this principle. I consider that the question for me is whether or not there is such substantial doubt regarding each of these seven applications, such that where an applicant makes a reasonable case that their invention is patentable then I am bound to find in their favour”.

49 On this basis, Dr Jones suggested an applicant should be given the benefit of the doubt unless there is no substantial doubt to be had that the subject-matter is excluded from patentability. I think Dr Jones’ proposition may afford applicants more leeway than the hearing officer in BL O/112/118, or indeed Mann J in *Macrossan*¹⁵, intended. Nevertheless, I accept that where there is reasonable doubt whether an invention should be excluded under Section 1(2) then the applicant should be given the benefit of that doubt, when the doubt lies in the facts. However, in the present case, I have *no doubt* in my conclusion that the independent claim relates to a program for a computer as such and is therefore excluded under section 1(2)(c) of the Act.

ii. Presentation of information

50 I will now turn to the question of whether the independent claim should be excluded as the presentation of information. A method of expressing information which is characterised solely by the content of the information is excluded, regardless of how it is presented¹⁶, unless the invention provides some other, technical, contribution. However, as discussed above, I cannot see any such technical contribution.

51 The skeleton argument referred to BL O/128/19¹⁷. Here, the order in which information was displayed on a user interface for a thermostat was dependent on whether temperature was detected to increase or decrease. The way in which the information was displayed was dependent on the detection of a physical parameter and therefore the invention was not defined solely by the content of the information. Thus the invention was not excluded as the mere presentation of information. Dr Jones asserted that, in the present invention, the means of presentation are not independent of the data. However, I cannot see what leads him to this conclusion. I can see nothing in claim 1 to suggest the way in which information is displayed depends on well data, or any other measured physical parameters. It seems to me that the invention lies in how to present information using a bar chart. I thus conclude that claim 1 is excluded from patentability as the presentation of information under Section 1(2)(d) of the Act.

¹⁴ BL O/112/18 [*Landmark Graphics Corporation’s Applications*] at [17]

¹⁵ *Macrossan v Comptroller-General of Patents* [2006] EWHC 705 (Ch) at [9]

¹⁶ *Autonomy Corporation Limited v. Comptroller General of Patents*, [2008] EHWK 146 (Pat), at [45]

¹⁷ BL O/128/19 [*Arris Enterprises, Inc*] at [31]

iii. Method of doing business

- 52 The examiner also objected to claim 1 as being excluded as a method of doing business. Having already found that claim 1 is excluded as a computer program and as the presentation of information, there is no real need for me to consider this further point, but for the sake of completeness I shall briefly do so.
- 53 Dr Jones argued that understanding the state of an oil well is not an administrative, managerial or financial task but goes to the heart of what operational hydrocarbon engineers do. As I discussed above, there would appear to be business and engineering applications for the invention. Thus, prima facie, I am not persuaded that the invention is solely related to a method of doing business. As such I do not think that claim 1 falls entirely within this excluded category.

Step 4: Is the contribution technical in nature

- 54 The final step of the *Aerotel*¹ test is to check whether the contribution is technical in nature. Since I have decided that it does not have a technical effect beyond that of a program running on a computer or the presentation of information, it also fails this step of the test. I thus decide that claim 1 is excluded under section 1(2).

Claim 4

- 55 As discussed above Dr Jones argued that the contribution was “a new tool for understanding the present state and likely future evolution of a well, which is simpler to use and provides a more accurate insight for the user” or put more simply, he argued that it is a better tool for modelling oil wells.
- 56 I dismissed this argument with respect to claim 1 as that claim is not limited to planning embodiments. However, I am conscious of claim 4 of the application which reads:

A computer-implemented method as defined in claim 1, wherein: the well activities are for a planned well; and the time at which each event bar occurs is determined based upon prior well activities from the plurality of wells.

- 57 This is the only claim that relates to displaying activities for a *planned* well. As I have explained above, from the description it seems to me that in the planning embodiments, information from a plurality of wells is aggregated to provide suggested event bars for a future planned well. I construe claim 4 in light of this interpretation.
- 58 At the hearing Dr Jones argued that the invention could not relate to excluded matter as it provided a better tool for modelling a planned oil well and, critically, that this model was based on real world data. Prima facie this seems like a good argument. Indeed, if the application was focussed on the production of such a model I might be

minded to agree. However, it is not. The application, in both its detail and its choice of language is clearly concerned with the *display* of data relating to oil wells. There is no detail about how any model may be produced. All there is, is claim 4 and its disclosure that some of the things displayed might be the predicted activities for a planned well. The description adds that the event bars for the planned well can be based on the aggregated data from several real wells but that is not enough to convince me that the contribution relates to modelling in any way. My conclusion that the current invention is excluded as both a program for a computer and a method of displaying information stands even allowing for the material of claim 4.

Decision

- 59 I have decided that the invention defined in the independent claim, and claim 4, falls solely within matter excluded under Section 1(2) as a program for a computer and the presentation of information as such. Having reviewed the application, I do not consider that any saving amendment is possible. I therefore refuse this application under section 18(3).

Appeal

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

Dr Stephen Brown

Deputy Director, acting for the Comptroller