



PATENTS ACT 1977

APPLICANT Halliburton Energy Services, Inc.

ISSUE Whether patent application GB2013488.8 complies
 with Sections 1(1)(b) and 1(2) of the Patents Act
 1977

HEARING OFFICER J Pullen

DECISION

Introduction

- 1 Patent application GB2013488.8 was filed on 27 August 2020 derived from an international application entitled 'Real-Time Operations Information on Wearable Smart Heads-Up Display' filed on 28 November 2018 claiming priority from an earlier application dated 8 June 2018 and published on 12 December 2019 as WO2019/236128 A1.
- 2 The International Search Report and Written Opinion dated 22 March 2019, and International Preliminary Report on Patentability dated 8 December 2020 reported that the claimed invention lacked inventive step from two documents WO2007/085783 and US2017/0152729. Examination was requested and an examination report issued on 14 March 2022 finding that many of the original claims lacked novelty over WO2007/085783, the remaining claims lacked inventive step and that the invention was excluded as a business method, the presentation of information and/or a computer program. Several rounds of amendment and re-examination followed with the examiner maintaining that the claims lacked inventive step and were excluded. The examiner offered the applicant the opportunity to be heard in their letter of 31 March 2023; the applicant responded with further amendments accompanying their letter of 12 May 2023 in which they requested a hearing in the event that the examiner did not find the amendments met the requirements of the Act.
- 3 The examiner wrote to the applicant maintaining objections on 21 June 2023 and indicating that a hearing would follow. The hearing took place on 16 August 2023 where Mr Lloyd Palmer and Mr Nikesh Patel, both of AA Thornton IP LLP represented the applicant. After the hearing Mr Palmer submitted further amendments with their letter of 11 September 2023 to address a clarity point that arose at the hearing. The matters to be decided are whether the invention involves an inventive step and whether it is excluded as a business method, the presentation of information and/or a computer program.

The invention

- 4 The invention relates to the use of wearable smart heads-up notification devices at a hydrocarbon recovery, exploration, operation, or services environment to enable real-time notification regarding one or more drilling operations. The notifications may comprise status indications, warning notifications, and maintenance notifications. Operations of well site equipment may be modified based, at least in part, on the notifications.
- 5 The well site comprises a number of sensors which provide data such as volumes, levels, weights, temperatures, pressures, rates, densities, speeds, positions, torques, viscosities, conductivities, pH levels, valve positions and other data associated with equipment, and devices at the well site. On-site data is provided to one or more notification devices via a network and data repository to provide notifications such as a prompt to modify operations of the on-site equipment to a user. It is said that notifications may be audio, visual, or haptic notifications.
- 6 The application gives examples of exemplary wearable notification device as Google Glass^(RTM) and Microsoft Hololens^(RTM) which facilitate display of notifications in augmented reality (AR) environments over the user's field of vision. This enables a user to continue to access data when away from a control stand.
- 7 The notification device may be configured to prioritize notifications based on a data priority. It is said that prioritized notifications may override display of other notifications with the example that maintenance notifications might take a lower data priority than warning notifications. Elsewhere status notifications are also mentioned. If the notification device is currently displaying one or more maintenance notifications, the notification device may hide maintenance notifications and display one or more warning notifications instead. Also, if the notification device receives multiple notifications with different priorities in close succession, it will process the higher priority notification prior to processing the lower priority notification such that the higher priority notification is produced prior to, queued before, or displayed over the lower priority notification.
- 8 The system can prompt a user of the wearable device to modify the one or more well site equipment such as to improve the efficiency and safety. In some embodiments the notifications provide health and safety environment (HSE) notifications including electrical hazards, high pressure hazards, and conditions conducive to an explosion. In response to such notifications, a user might engage safety systems, disable systems, or evacuate the area.
- 9 The current claim set, as amended 11 September 2023, comprises two independent claims: claims 1 to a system and claim 6 to a method which relate to the same inventive concept. They will stand or fall together. Claim 1 reads:

A well site notification system comprising:

one or more sensors for collecting data associated with one or more well site equipment,

wherein the one or more sensors is at a first location;

a wearable device at a second location;

a network system coupled to the one or more sensors and the wearable device;

and

a data repository, wherein the data repository stores the data, wherein the wearable device is configured to:

*receive the data associated with the one or more well site equipment;
produce one or more notifications based, at least in part, on the data associated with the one or more well site equipment to prompt a user of the wearable device to modify the one or more well site equipment*

prioritize the one or more notifications based on data priority in the case that multiple notifications are produced in close succession;

process the prioritized one or more notifications to provide the prioritized one or more notifications over the field of vision of the user of the wearable device in at least one of one or more augmented reality environments, wherein a high priority notification is to be provided over the field of vision of the user prior to a low priority notification; and

wherein one or more operations of the one or more well site equipment is modified based, at least in part, on the first one or more prioritized notifications and input from the user of the wearable device.

- 10 The applicant has also filed first and second auxiliary claim sets for consideration in the event that I am minded to refuse the main claim above. At the hearing Mr Palmer indicated that he didn't think there is any substantial difference between the claims of the main request and the claims of the inventive second auxiliary inventive second auxiliary request. The first and second auxiliary claim 1 alter the wording of the "...*process the prioritized one or more notifications...*" and the "...*wherein one or more operations of the one or more well site equipment is modified...*" features of claim 1 above. This part of the first auxiliary claim 1 reads:

process the prioritized one or more notifications to provide the prioritized one or more notifications over the field of vision of the user of the wearable device in at least one of one or more augmented reality environments, wherein a high priority notification is processed prior to a low priority notification so that the high priority notification is to be displayed over the field of vision of the user before the low priority notification is to be displayed over the field of vision of the user; and

wherein the user of the wearable device modifies one or more operations of the one or more well site equipment based, at least in part, on the first one or more prioritized notifications provided over the field of vision of the user; and

wherein the user modifying one or more operations of the one or more well site equipment comprises one or more of: modifying cementing operations, modifying drilling operations, modifying mud system parameters, modifying bulk material system parameters, and modifying well site equipment for repairs.

- 11 This part of the second auxiliary claim 1 reads:

process the prioritized one or more notifications to provide the prioritized one or more notifications over the field of vision of the user of the wearable device in at least one of one or more augmented reality environments, wherein a high priority notification is processed prior to a low priority notification so that the high priority notification is queued for display over the field of vision of the user before the low priority notification is queued for display over the field of vision of the user; and

wherein the user of the wearable device modifies one or more operations of the one or more well site equipment based, at least in part, on the first one or more prioritized notifications provided over the field of vision of the user; and

wherein the user modifying one or more operations of the one or more well site equipment comprises one or more of: modifying cementing operations, modifying drilling operations, modifying mud system parameters, modifying bulk material system parameters, and modifying well site equipment for repairs.

The Law

- 12 The examiner objects that the invention lacks an inventive step. Section 1(1) of the Act states that:

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

- (a) ...;*
- (b) it involves an inventive step; ...*

- 13 Section 3 of the Act states:

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

- 14 The test for determining whether the invention of an application includes an inventive step is the structured approach laid down by the Court of Appeal in *Windsurfing*¹ and restated, by that Court, in *Pozzoli*². Paragraph 23 of this decision lays out the test as:

- (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;*
- (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?*

- 15 The examiner has also objected that the invention is excluded from being patented as a program for a computer, presentation of information and a method for doing business. The relevant section of the Act is s.1(2), the most relevant provisions of which are shown below with my emphasis added:

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) ...;*
- (b) ...;*
- (c) **a... method for... 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.

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

² *Pozzoli Spa v BDMO SA & Anor* [2007] EWCA Civ 588

16 The Court of Appeal has said that the issue of whether an invention relates to subject matter excluded by Section 1(2) 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*³ set out the following four-step approach to help decide the issue:

- (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 The operation of the approach is explained at paragraphs 40-48 of the judgment. Paragraph 43 confirms that identification of the contribution is an exercise in judgment involving the problem said to be solved, how the invention works and what its advantages are; essentially, what it is the inventor has really added to human knowledge, looking at substance, not form. Paragraph 47 adds that a contribution which consists solely of excluded matter will not count as a technical contribution.

18 In *Symbian*⁴ the Court of Appeal reaffirmed the *Aerotel* approach while considering a question of “technical contribution” as it related to computer programs emphasising the need to look at the practical reality of what the program achieved, and to ask whether there was something more than just a “better program”.

19 The case law on computer implemented inventions was further elaborated in *AT&T/CVON*⁵ which provided five helpful signposts to apply when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*⁶, Lewison LJ reconsidered the fourth of these signposts and felt that it expressed too restrictively. 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.*

20 The examiner also refers to *Merrill Lynch's Application*⁷, *Halliburton Energy Services Inc's Applications*⁸, *Townsend's Application*⁹, *Autonomy Corp Ltd v Comptroller*

³ *Aerotel Ltd v Telco Holdings Ltd & Ors* Rev 1 [2007] RPC 7

⁴ *Symbian Ltd's Application* [2009] RPC 1

⁵ *AT&T Knowledge Ventures/Cvon Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

⁶ *HTC v Apple* [2013] EWCA Civ 451

⁷ *Merrill Lynch's Application* [1989] RPC 561

⁸ *Halliburton Energy Services Inc's Applications* [2011] EWHC 2508 (Pat), [2012] RPC 129

⁹ *Townsend's Application* [2004] EWHC 482 (pat)

*General of Patents*¹⁰, *Gemstar-TV Guide International Inc v Virgin Media Limited*¹¹ and the Hearing Officers' decisions in BL O/657/17 and BL O/524/21 in which the EPO Boards of Appeal decision T 115/85 [IBM] is also discussed.

- 21 In their skeleton arguments the agent refers to *Protecting the Kids the World Over (PKTWO) Ltd*¹², *Lenovo (Singapore) PTE Ltd v Comptroller General of Patents*¹³, *Lantana v Comptroller-General of Patents*¹⁴ and the Hearing Officers' decisions in BL O/461/19 and BL O/312/15.

Assessment – Inventive step: Application of the Windsurfing/Pozzoli test

Steps (1)(a) & (1)(b): Identify the notional “person skilled in the art” and identify the relevant common general knowledge of that person

- 22 The examiner considers that the notional person skilled in the art would be a team of people working on wellsite management systems composed of skilled people from the fields of well-drilling and sensors and devices in communication with each other to send notifications. Such a team would understand how these types of apparatus work and will be aware of commonly known technical advancements made in their respective fields, such as the use of wearable devices to display an augmented reality view of a site as illustrated in US 2017/00152729 and US 2018/0011319.
- 23 Mr Palmer indicated that he didn't have any issue with this definition of the notional skilled person skilled in the art.
- 24 At the hearing I asked Mr Palmer about the lack of detail in the application around how the system described in this application prioritises notifications. He directed my attention to the words used on page 11, lines 19-29 of the application to describe that feature, concluding that the skilled reader would understand how to implement a system that prioritised notifications based on data priority. Page 11, lines 18-29 read:

The notification device may be configured to prioritize certain visual or audio notifications based on a data priority. Prioritized notifications may override display of other notifications. For example, maintenance notifications might take a lower priority than warning notifications, because an on-site operator may need to immediately respond to a warning condition while equipment repairs may be queued for subsequent handling. Accordingly, if the notification device is currently displaying one or more maintenance notifications, the notification device may hide maintenance notifications and display one or more warning notifications instead. Further, if the notification device receives multiple notifications with different priorities in close succession, the notification device 110, potentially in conjunction with one or more other devices including without limitation control computers 102, may process the higher priority notification prior to processing the lower priority notification such that the higher priority notification is produced prior to, queued before, or displayed over the lower priority notification.

¹⁰ *Autonomy Corp Ltd v Comptroller General of Patents*, [2008] EWHC 146 (Pat)

¹¹ *Gemstar-TV Guide International Inc v Virgin Media Limited* [2010] RPC 10

¹² *Protecting the Kids the World Over (PKTWO) Ltd*, EWHC 2720 (Pat)

¹³ *Lenovo (Singapore) PTE Ltd v Comptroller General of Patents* [2020] EWHC 1706 (Pat)

¹⁴ *Lantana v Comptroller-General of Patents* [2014] EWCA Civ 1463

25 I suspect that he is right, and that the provision of handling prioritised notifications is common general knowledge both in computing generally, from the likes of Google and Microsoft, and specifically in the field of wellsite management systems. Given the problems advanced at the hearing and in the skeleton arguments about the limited interface on the wearable AR devices, that prioritisation of alerts is also common general knowledge in this field.

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

26 The examiner states that the inventive concept is a well site notification system comprising sensors associated with one or more well site equipment, a wearable notification device, a network system coupled to the sensors and wearable device, and a data repository. The wearable device provides notifications based, at least in part, on data from the sensors and prioritises and processes the notifications (in the case that multiple notifications are produced in close succession) over the field of vision of the wearable device such that high priority notifications are provided over the field of vision of the user prior to a low priority notification. One or more operations of the well site equipment is modified based, at least in part, on the first one or more prioritised notifications and input from the user of the wearable device.

27 They propose, based on the description on page 11 lines 27-29, that the phrase “...*high priority notifications are provided over the field of vision of the user prior to a low priority notification*” be construed as the higher priority notification being “displayed over” the lower priority notification, and that “display over” incorporates both when a notification is vertically above another notification, or when a notification is overlaid on top of another notification. They go on to say that there is nothing in the claim that suggests that prioritisation is *only* performed in the context of time and that the prioritising the display of notifications could be in how (not when) they are displayed.

28 Mr Palmer disagrees with these proposals asserting that the ordinary meaning of “prior to” is clear giving the Cambridge dictionary definition for that as “before a particular time or event”.

29 The examiner’s proposed construction relies on the phrase “display over” which is given as an alternative to the higher priority notification being processed/produced “prior to” the lower priority notification in the passage quoted and does not appear in claim 1. In turn the examiner considers that “display over” can be how (not when) they are displayed. That may be so, but this is far removed from the words of the claim. However, the phrase “...*wherein a high priority notification is to be provided over the field of vision of the user prior to a low priority notification...*” in claim 1 does not appear in the application-as-filed; it is a composite of parts of passages on page 11, lines 27-29 and page 9, lines 32-33 which implies that one of the alternatives given in claim 3 (visual notifications) is essential. The same is also true of the equivalent passages in each of the auxiliary claims.

30 The application-as-filed states that “...the notification device ...may process the higher priority notification prior to processing the lower priority notification such that the higher priority notification is produced prior to, ... the lower priority notification”. It follows that such notifications would, when combined with the disclosures around a wireless AR-enabled notification device (from page 9, lines 32-33) and visual notifications (from

claim 3), result in the provision of a high priority notification over the field of vision of the user prior to a low priority notification. Whilst that combination is not explicitly envisaged in the application, at this point I will proceed on the basis that the skilled reader would regard the combination as implicitly disclosed.

- 31 In construing the claims, I am required to determine the scope of the claims by the terms used therein interpreted based on the description and drawings. The description and drawings of this application do not contain any more detail of the invention now claimed that would help understand the term “prior to” so I am left with the dictionary definition provided by Mr Palmer.
- 32 I will proceed on the basis that the phrase “prior to” in claim 1 of the main claim set means the high priority notifications are displayed before lower priority notifications in time. The same construction applies to the equivalent passage of claim 1 in the first auxiliary set of claims. The equivalent passage of claim 1 in the second auxiliary set of claims additionally refers to the high priority notification being “... queued for display...” before the low priority notification; in practice displaying one notification prior to/before another would involve a queue, so there is little difference in scope.
- 33 At the hearing I sought to clarify that the references in the previous version of claim 1 to the “wearable device” and the “notification device” were referring to the same thing. Mr Palmer agreed that that was the case and subsequently filed the amended claims now being considered.
- 34 There is also a question about what is meant by “prioritising” in the case that multiple notifications are produced “in close succession”. I highlighted, at the hearing, the potential for this to possibly cause the skilled reader difficulty in establishing the scope of the claims, but decided that because the description does not elaborate on that phrase any specific interpretation must be implicit to the person skilled in the art.
- 35 I believe the inventive concept is a well site notification system comprising sensors associated with one or more well site equipment, a wearable notification device, a network system coupled to the sensors and wearable device, and a data repository. The wearable device provides notifications based, at least in part, on data from the sensors and prioritises and processes the notifications (in the case that multiple notifications are produced in close succession) over the field of vision of the wearable device such that high priority notifications are provided over the field of vision of the user before a low priority notification. One or more operations of the well site equipment is modified based, at least in part, on the first one or more prioritised notifications and input from the user of the wearable device.

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

- 36 WO 2007/085783 relates to the management and optimization of well systems in which control system 28 can be programmed to output alerts which may be provided to remote handheld devices 32, such as cellular telephones 34 or personal digital assistants 36. Maintenance (repair) is mentioned and control can be exercised over a variety of controllable components, either automatically or based on input. As part of the computerised control an “overview” screen provides an operator of control system

28 with a field map 146 of multiple wells, as illustrated in Figure 11. The field map provides a color-coded guide as to which wells are performing well, performing poorly, or require future intervention. Wells are identified by dots 148 that are illuminated on field map 146 in green for "no issue," red for "well down," and yellow for potential problems requiring further analysis. Figure 11 also shows a table detailing the red and yellow wells with the red well data presented above the yellow well data. At the hearing Mr Palmer suggested that the described colouring of dots and arrangement of the table was more a reflection of changing condition/status rather than prioritisation of notifications. Having read '783 and the application at hand thoroughly I fail to see the proposed distinction which seems to be a matter of semantics or meticulous verbal analysis rather than substance. The use of colour and arrangement of the table represent a prioritisation of the notifications based on data priority. The lack of detail in the application at hand as to how prioritisation is achieved does not assist. This citation does not disclose using augmented reality systems in which notifications can be provided to a user over their field of vision. There is also no disclosure of displaying higher priority notifications before lower priority ones when multiple notifications are received in close succession.

- 37 The examiner's letter also refers to US 2017/0152729 as an example of the background art, but I believe it also warrants consideration as part of the "state of the art". It describes systems and techniques for using wearable computer devices in gas and oil-related operations including maintenance (repair). Information collected by the wearable computer from onboard and/or external sensors may be compared to baseline information, and a notification can be provided to the user. The external sensor can be temperature sensors, pressure sensors, vibration sensors, gas detectors, radiation detectors, flame detectors, amongst others. Figure 4 shows an embodiment in which the wearable computer device presents a notification in the form of a visual display 450 within a field of view, e.g., "warning: fault detected". Whilst the phrase "augmented reality" does not appear in this document it is clear that the system described is an augmented reality system. This document does not contemplate the system producing multiple notifications in close succession; nor prioritizing those based on data priority and providing a high priority notification to the user prior to a low priority notification.

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?

- 38 The questions before me can be summarized as follows: would it occur to the skilled reader of WO 2007/085783 to use a wearable AR device like in place of the remote handheld device? And, if the answer is yes, would they present a higher priority notification to the user over their field of view before a lower priority notification when multiple notifications are produced in close succession?
- 39 The answer to the first question is straightforward. *Windsurfing* teaches, at page 77, that "it would be wrong to prevent a man from doing something which is merely an obvious extension of what he has been doing or of what is known in the art before the priority date". Using a wearable AR device like Google Glass and Microsoft HoloLens in place of the remote handheld device described in WO 2007/085783 would occur to the skilled reader and as technology advances it is an obvious extension of what is described in that document.

- 40 The answer to the second question is more complex. At the hearing Mr Palmer proposed that even if the skilled person took the step of modifying the system to include a wearable AR device, they wouldn't then go on to take the further step of prioritisation without any inventive insight. He highlighted that one of the challenges with providing notifications on a wearable device is that there is limited interface on the wearable device, and this is a problem that only arises when you introduce the wearable device into the system. However, this problem is not one that is mentioned in the application as filed and only arises due to the specific combination of features now claimed.
- 41 As previously mentioned if, as part of the common general knowledge the prioritisation of the display of alerts to address this problem is a feature available in existing wearable AR devices like Google Glass and/or Microsoft HoloLens that this application envisages using, there is no invention in making use of that functionality when using a wearable AR device in the system of WO 2007/085783. Equally, if prioritisation of alerts is conventional in the field of well management, then there is no invention in making use of that functionality when implementing the system of WO2007/085783 with a wearable AR device.
- 42 I find claim 1 of the main claim set to lack inventive step over WO 2007/085783.
- 43 The examiner concludes that claims 2 to 15 are also obvious and this was not disputed in the skeleton arguments or at the hearing. I find that the claims 2 to 15 of the main claim set also lack inventive step in view of WO 2007/085783.
- 44 The first and second auxiliary claims additionally require that the inventive concept include modifying one or more of: cementing operations, drilling operations, mud system parameters, bulk material system parameters, and well site equipment for repairs.
- 45 WO 2007/085783 discloses maintenance (repair) and control of controllable components. In view of my comments above about the inventive concept I find claims 1 to 15 of the first auxiliary claim set also lack inventive step over that document. The examiner believes that the inclusion of a queue in the second auxiliary claim set renders the claims inventive over WO2007/085783, I do not agree. Queues are a ubiquitous part of computers as exemplified by the lack of detail of how to implement such a queue in this application; the skilled team implementing the system described in WO2007/085783 would queue notifications for display. I find claims 1 to 15 of the second auxiliary claim set also lack inventive step over that document.
- 46 As an alternative approach, if I were to start with the disclosure of US 2017/152729, I would arrive at the same conclusion. The skilled reader of that document would, in making the system described, consider how to handle multiple notifications with different priorities produced in close succession and would display a high priority notification over the field of vision of the user prior to a low priority notification.
- 47 If I am wrong on my assessment of inventive step, and I do not believe I am, and how to prioritise alerts does not form part of the common general knowledge, either in the field of wearable AR devices or in the field of well management, then I question whether this application discloses sufficient detail as to how to implement these

features for the skilled reader to work the claimed system, particularly how to facilitate prioritisation of messages when they are received in close succession.

- 48 As final reflections in this matter the specification of this application includes many alternatives but no detailed embodiment, no detail as to how notifications produced in close succession are handled so as to prioritise their display, no detail of how augmented reality is used or how notifications are displayed over the user's field of vision etc. If I were to have concluded that the claims involved an inventive step over WO 2007/085783 and US 2017/152729, then I would need to conclude that (i) the combination now claimed was not disclosed originally, (ii) the disclosure is not complete enough for the invention now claimed to be performed by a person skilled in the art, and/or (iii) the claims represent a combination of a series of well-known features, each playing its usual part in the final entity which is a matter of design not of invention.

Assessment – Excluded matter: Application of the Aerotel approach

(1) Properly construe the claim

- 49 The construction of claims is considered above. In their letter of the 21 June 2023, the examiner additionally comments in the section outlining their objection to excluded matter that, according to the description, the modification of the equipment can be performed to improve efficiency. From that they extrapolate that modification be construed broadly and that the notifications can be regarding when a piece of equipment is performing poorly in terms of efficiency (and therefore is not financially viable).
- 50 In the skeleton arguments Mr Palmer disagrees with these aspects of the construction. I agree, the description also mentions modification of equipment to address safety issues and whilst adjusting a piece of equipment to improve efficiency would likely have a financial impact it is not a financial/business consideration per se.

(2) Identify the actual contribution

- 51 In their letter of 21 June 2023, the examiner considers the problem being addressed by the proposed invention, notes that no specific detail is given with respect to any apparatus used and identifies the contribution as:

Providing prioritised and processed notifications over a user's field of vision in augmented reality of a wearable device using conventional apparatus and sensors associated with well site equipment, thus prompting the user to react by manually modifying a well site operation in a conventional manner.

- 52 Mr Palmer rejects this is asserting that to consider the features of processing and prioritisation as recited in claim 1 as relating to an administrative task or a business task is "salami-slicing". In the skeleton arguments and at the hearing he identified the contribution as:

A better well site notification system that enables real time well site equipment monitoring and modification of well site equipment operations based on equipment-specific data collected by sensors and processed to produce

prioritized notifications that effectively communicate the need for equipment modification to a user via a limited interface of a wearable device with particular prioritisation and processing of higher priority notifications in advance of low priority notifications for display in an AR environment of a wearable device so that a user can take action to modify an operation of well site equipment.

- 53 Identifying the contribution is an exercise in judgment involving the problem said to be solved, how the invention works and what its advantages are. The problems advanced at the hearing do not appear in the application which does not give any problem which is said to be solved. The description and drawings lack detail of how the invention works and the advantages are limited to vague references to improved efficiency and safety. That said I cannot dismiss the known aspects of the claim and focus on the difference as the examiner seems to have. The contribution of the claimed invention is:

A well site notification system comprising sensors associated with one or more well site equipment and a wearable notification device to provide notifications based, at least in part, on data from the sensors which prioritises the notifications when multiple notifications are produced in close succession and displays them over the field of vision of the wearable notification device such that a high priority notification is provided over the field of vision of the user before a lower priority notification whereby the user can modify one or more operations of the well site equipment.

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

- 54 I will consider steps (3) and (4) together.
- 55 I have every sympathy for the examiners position. As the application has so little detail of how the invention now claimed works it is tempting to conclude, when filling in the substantial gaps as one must, that the contribution encompasses matter that is regarded as excluded. However, the lack of disclosure is a matter of whether the specification is complete enough for the invention to be performed by a person skilled in the art and whether there is an inventive step, not of excluded matter. On the face of it the contribution is a well site notification system comprising sensors associated with well site equipment and a wearable notification device which provides prioritised notifications to the user based on data from the sensors. Such systems are not excluded. As letters on file propose and acknowledge "...giving visual indications automatically about conditions prevailing in an apparatus or system is basically a technical problem". I could go on to detail my consideration of how the caselaw referenced and signposts support this conclusion but, in view of my findings above on inventive step, this is not a good use of my time.
- 56 I find that the claimed invention is not excluded as a computer program, method for doing business or the presentation of information as such.

Conclusion

- 57 I find that the invention as defined by claim 1 of each of the main claim set and first and second auxiliary claim sets to lack an inventive step as required by Section 1(1)(b)

in view of the disclosure in each of WO 2007/085783 and US 2017/0152729. All the dependent claims also lack inventive step. I therefore refuse the application under Section 18(3).

- 58 I find the application is not excluded from being patented under Section 1(2) as a program for a computer, method for doing business or the presentation of information as such.

Appeal

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

J PULLEN

Deputy Director, acting for the Comptroller