Intellectual Property Office

BL O/0047/26

23 January 2026

PATENTS ACT 1977

APPLICANT	WHOOP Inc
ISSUE	Whether patent applications GB2411471.2 and GB2508398.1 comply with Section 1(2) of the Patents Act 1977
HEARING OFFICER	Nikki Dowell

DECISION

Introduction

1 Patent application GB2411471.2 entitled ‘Coaching based on menstrual cycle” was filed on 5 August 2024 as a divisional application of GB2313844.9 (filed on 12 September 2023 itself derived from international application PCT/US2022/017244 published as WO2022/187019 with an earliest priority date of 1 March 2021). Application GB2411471.2 was published on 11 December 2024 as GB2630861A.

2 Patent application GB2508398.1 entitled ‘Coaching Based on physiological cycle” was filed on 29 May 2025 as a divisional application of GB2411471.2. Application GB2508398.1 was published on 3 December 2025 as GB2700215A.

3 Regarding GB2411471.2, the combined search and examination report, dated 7 October 2024, reported under Sections 17 & 18(3) that the invention, as claimed in claims 1 to 33 is excluded from patentability as a program for a computer and method for doing business as such. Subsequent rounds of communication have involved amendments to the claims, but the excluded matter objection has been maintained by the examiner. An offer of a hearing was made in the examiner’s letter of 5 August 2025. The agent responded on 14 August 2025 without filing further amendments but outlining reasoning for why they believe the claimed invention not to be excluded from patentability, requesting that, should the objections be maintained, the matter be considered by a senior hearing officer as a precautionary measure. The examiner remained unconvinced and forwarded the case for a hearing; it was agreed that this would be considered together with the co-pending divisional application GB2508398.1.

4 Regarding GB2508398.1, in the letter of 16 July 2025, the examiner reported the results of the search and that although the application qualified for combined search and examination, they did not issue an examination report because they had no objections to the application at that stage. Subsequently, a substantive examination

report, dated 29 July 2025, was issued, and reported under Section 18(3) that the invention, as claimed in claims 1 to 18 is excluded from patentability as a program for a computer and method for doing business as such. The agent responded on 11 August 2025 without filing amendments to the application, but providing reasoning as to why, in their view, the claimed invention is not excluded from patentability. In the letter of 14 October 2025, the examiner confirmed that the agent has agreed that due to similarities between GB2508398.1 and GB2411471.2, as well as the upcoming end of the compliance period, the two applications would be forwarded to the Hearing Officer for consideration together. The letter of 14 October 2025 also provided examiner's summary of the history of the case preceding that date, maintaining the excluded matter objections. The cases were passed to me for a decision on the papers.

5 For both GB2411471.2 and its divisional application GB2508398.1, the extended compliance period is 1 March 2026. The matter before me is whether the claimed inventions in both applications are excluded as a program for a computer and/or a method for doing business as such. I shall consider them in turn.

The Law

6 The examiner has objected that the inventions are excluded from being patented as a program for a computer 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) ...; 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.*

7 The Court of Appeal has said that the issue of whether an invention relates to 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*[1] set out a four-step test for determining whether an invention is excluded under section 1(2). In *Emotional Perception*[2] the Court of Appeal applied the *Aerotel* test and expressed it as follows:

> *(1) Properly construe the claim;*
> *(2) Identify the actual contribution (although at the application stage this might have to be the alleged contribution);*
> *(3) Ask whether it falls solely within the excluded matter;*

[1] Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application [2006] EWCA Civ 1371; [2007] RPC 7
[2] Comptroller General of Patents, Designs and Trade Marks v Emotional Perception AI Ltd [2024] EWCA Civ 825

(4) if the third step has not covered it, check whether the actual or alleged contribution is actually technical.

8 The operation of the approach is explained at paragraphs 40-48 of the Aerotel 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.

9 In *Symbian*[3] 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".

10 The case law on computer implemented inventions was further elaborated in *AT&T/CVON*[4] which provided five helpful signposts to apply when considering whether a computer program makes a relevant technical contribution. In *HTC v Apple*[5], Lewison LJ reconsidered the fourth of these signposts and felt that it was 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.*

11 The examiner's reports also refer to the guidance in *Halliburton*[6], as well as EPO caselaw, specifically T 1741/22. The agent's letters refer to *Lantana*[7].

GB2411471.2

The invention

12 The hormonal cycle may affect a human being in many ways, and different phases of hormonal cycles may affect one's health, fitness, recovery, sleep, and the like in different manners. By way of an example, during the luteal phase of the menstrual

[3] Symbian Ltd v Comptroller-General of Patents, [2009] RPC 1
[4] AT&T Knowledge Ventures/CVON Innovations v Comptroller General of Patents [2009] EWHC 343 (Pat)
[5] HTC v Apple [2013] EWCA Civ 451
[6] Halliburton Energy Services Inc's Applications [2011] EWHC 2508 (Pat), [2012] RPC 129
[7] Lantana Ltd v The Comptroller-General of Patents, Designs and Trade Marks [2013] EWHC 2673 (Pat)

cycle, high progesterone levels may cause muscles to be broken down more readily and hinder the ability to synthesise new or repaired muscles. Therefore, it may be advantageous to identify a particular phase of a hormonal cycle to provide adjustments to recommendations for exercise, and there is a need for devices, systems, and methods that can detect a user's hormonal cycle and adjust user feedback in a synchronised manner, which is what the present invention seeks to address.

13 Specifically, the present invention relates to a system with a wearable physiological monitor for being substantially continuously worn by a user to acquire heart rate data for the user, as well as a computer program and method for recommending an adjusted strain based on a determined phase within the hormonal cycle. The recommendation may take the form of a general recommendation to engage in low intensity activities, and/or an alert when intensity is exceeding recommended ranges. The recommendation may alternatively be in the form of a target strain.

14 The current claim set, as amended on 22 May 2025, comprises three independent claims 1, 14, and 16. Claim 1 is to a computer program product for suggesting adjustments to an exercise regime based on a menstrual cycle; claim 14 is to a system, and claim 16 is to a method. These claims are:

> *1. A computer program product for suggesting adjustments to an exercise regimen based on a menstrual cycle, the computer program product comprising non-transitory computer executable code embodied in a computer readable medium that, when executing on one or more computing devices, performs the steps of:*
>
> *acquiring heart rate data for a user, the heart rate data acquired from a wearable physiological monitoring device worn substantially continuously by the user over at least one entire menstrual cycle;*
>
> *determining the menstrual cycle and a phase within the menstrual cycle for the user based on at least one of a resting heart rate and a respiratory rate of the user calculated using heart rate variability of the heart rate data acquired by the wearable physiological monitoring device;*
>
> *determining a current recovery level for the user based on a prior sleep activity for the user based on the heart rate data acquired by the wearable physiological monitoring device;*
>
> *calculating a target strain for new training activity by the user based on the current recovery level; and*
>
> *automatically adjusting a training recommendation for the user by increasing a strain of the training recommendation during an early follicular phase of the menstrual cycle and decreasing the strain of the training recommendation during a late luteal phase of the menstrual cycle so as to optimize the training of the user based on their current recovery level and menstrual cycle and presenting the training recommendation to the user in a user interface.*

14. A system comprising:

a wearable physiological monitor including one or more sensors, a first processor configured to substantially continuously acquire heart rate data for a user based on a signal from the one or more sensors, and a communications interface for coupling with a remote resource;

a server coupled in a communicating relationship with the wearable physiological monitor, the server including a second processor configured by computer executable code to receive the heart rate data of a user from the wearable physiological monitor worn substantially continuously by the user over at least one entire menstrual cycle, to identify the menstrual cycle and a phase within the menstrual cycle for the user based on the heart rate data acquired by the wearable physiological monitoring device, to determine a current recovery level for the user based on a prior sleep activity for the user based on the heart rate data acquired by the wearable physiological monitoring device, and to adjust a recommended strain for a new activity by the user according to the phase within the menstrual cycle; and

a user interface configured to present the recommended strain to the user.

16. A method comprising:

acquiring heart rate data for a user from a wearable physiological monitoring device worn substantially continuously by the user over at least one entire menstrual cycle;

determining the hormonal cycle and a phase within the hormonal cycle for the user based on at least one of a resting heart rate and a respiratory rate of the user calculated using a heart rate variability of the heart rate data acquired by the wearable physiological monitoring device;

identifying a prior sleep activity for the user based on the heart rate data;

determining a current recovery level for the user based on the prior sleep activity for the user based on the heart rate data acquired by the wearable physiological monitoring device;

generating a first recommended strain for new training activity by the user based on the current recovery level; and

determining a second recommended strain for the user by adjusting the first recommended strain according to the phase within the hormonal cycle.

Assessment

(1) Properly construe the claim

15 The examiner does not go into a detailed analysis of how the claims are to be construed, stating that the claims are clear, and that the invention relates to a method of giving a user a training recommendation based on their menstrual cycle. The agent does not disagree. In my view, this is a correct assessment of the claims at a high level. Nonetheless, I shall make some comments on how I have construed some of the wording of the claims.

16 Claims 1, 14, and 16 overlap in scope. Some of the terminology used is different, but all relate to the same invention and are clear. For example:

I. Claim 16 requires "*determining the hormonal cycle*", whilst claims 1 and 14 refer more particularly to "*menstrual cycle*". However, as claim 16 initially refers to "one *entire menstrual cycle*", the subsequent references in claim 16 to "*the hormonal cycle*" are construed as references to "*the menstrual cycle*".

II. Additionally, claim 16 refers to "*first recommended strain*" and "*second recommended strain*", while claim 14 refers to "*adjusting recommended strain*", and claim 1 instead refers to "*calculating a target strain… and automatically adjusting a training recommendation*…". Although different terminology is used, the substance is the same.

III. Moreover, claim 16 does not require "*presenting*" to the user in the same manner that the last paragraphs of claims 1 and 14 require. However, it is implicit that the recommendation would need to be communicated to the user.

IV. In addition to this, claims 1 and 16 require: *"Determining the menstrual cycle and a phase within the menstrual cycle for the user based on at least one of a resting heart rate and a respiratory rate of the user"*, whilst claim 14 is silent on both resting heart rate and respiratory rate. However, both the resting heart rate and respiratory rate of the user is required by claims 1 and 16 to be *"calculated using heart rate variability of the heart rate data" ,* and so as a matter of substance, determination of the menstrual cycle and phase within the menstrual cycle is done based on heart rate data acquired by the wearable physiological monitoring device, as also required by claims 1 and 16.

V. I note that dependent claims 7 and 22 define the determination of the phase of the menstrual cycle as being based on user input. However, in both cases this is not consistent with the wording of claims 1 and 16 upon which they depend.

17 Claim 14 is the broadest scope (as it does not require determining resting heart rate or respiratory rate), claim 16 is narrower on account of requiring determining resting heart rate and respiratory rate, and claim 1 is still narrower on account of additionally having limitations regarding how strain is adapted specifically during a "*late luteal phase*" or the "*early follicular phase*" of the menstrual cycle.

18 By way of a summary, all three independent claims require a device that is worn by a user substantially consistently over at least one menstrual cycle, wherein the device acquires a history of user's heart rate over the cycle, identifies a menstrual cycle phase and sleep activity (to infer how much recovery the user has had), and then based on the heart rate data, determines and presents an adjusted strain

recommendation for the user, wherein the adjusted recommendation is based on the menstrual cycle phase and their sleep activity.

(2) Identify the actual contribution

19 In their letter of 14 August 2025, the agent comments on technical contribution, and notes for example that it includes determining the phase of the menstrual cycle of the user using physiological data. Specifically, the invention is alleged to leverage real-world physiological data acquisition and analysis from wearable monitoring devices, detecting subtle, phase-specific variations that may not be perceptible to the user and automatically adjusting training guidance as needed.

20 In their letter of 14 October 2025, the examiner agrees with the agent on the contribution of the claim, and states that the contribution is:

> *A method of presenting a user with an adjusted training recommendation by determining the phase of the menstrual cycle the user is in using heart rate variability and respiratory rate data, along with identifying the user's recovery level based on prior sleep activity based on heart rate data in order to calculate a strain for a new training activity for user, the activity then being adjusted based on the determined menstrual cycle phase and then presenting this training recommendation to the user.*

21 Resting heart rate and respiratory rate data calculated using a heart rate variability is not required by claim 14. The resting heart rate and respiratory rate of the user is said to be calculated from the heart rate variability of the heart rate data. Therefore, in my view, the contribution is:

> *A method of presenting a user with an adjusted training recommendation by determining the phase of the menstrual cycle the user is in using heart rate data, along with identifying the user's recovery level based on prior sleep activity based on heart rate data in order to calculate a recommended strain for a new training activity for the user, the recommendation then being adjusted based on the determined menstrual cycle phase and then presenting this training recommendation to the user.*

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

22 In their letter of 14 October 2025, the examiner states that the invention clearly is to be realised as a computer program. The agent does not disagree. I agree as exemplified by claim 1 being to a "computer program product". The examiner proceeds to determine the contribution does not solve a technical problem within the computer or have a technical effect on a technical process outside the computer with reference to the signposts discussed in *AT&T/CVON* and *HTC v Apple*.

23 The examiner briefly discusses signposts (ii)-(iv) for completeness, observing that no discussions of those signposts were held with the agent during processing of this application, and concluding that none of the three signposts are met. The agent does

not disagree with this assessment, and I concur that signposts (ii)-(iv) are not relevant. Instead, the emphasis of the discussion between the examiner and the agent were placed on signposts (i) and (v), which is where the disagreement occurs. The examiner cites the EPO decision T 1741/22 as supporting their position.

24 In their letter of 14 October 2025, the examiner states that while the invention may influence user behaviour, the system itself does not enact any change on a technical process outside the computer. They say that the output itself is not relevant to a technical process, in this case the process outside the computer relates to adjustments of a person's physical exercise routine which they do not consider a technical process, wherein the output is limited to generation and presentation of information in the form of advice which the user must interpret and act upon. The examiner says this is analogous to the situation in EPO decision T 1741/22, where the Board held that generating new data from existing physiological measurements does not constitute a technical effect unless it involves a new interaction with physical reality, and that in this case, the invention processes already acquired data to produce recommendations which is not considered a technical task.

25 In their letter of 14 August 2025, the agent says that the contribution includes determining the phase of the menstrual cycle of the user using physiological data. Specifically, the invention is alleged to leverage real-world physiological data acquisition and analysis from wearable monitoring devices. The agent adds that the technical nature lies in achieving personalised training recommendations through physiological data collection, such as heart rate from a wearable device, to determine hormone cycle phases, enabling accurate training recommendations. Furthermore, the agent likens the invention to a computer implemented method of diagnosis which is said to be inherently technical in nature, wherein physiological data is collected from an individual and utilised in a new way to generate additional physiological insights about the user, and they describe such medical diagnostic as inherently technical and not excluded. Therefore, they propose that the contribution should analogously not be excluded from patentability.

26 The agent discusses EPO decision T 1741/22 proposing that it contradicts the EPO Guidelines for Examination which state that providing a medical diagnosis by an automated system processing physiological measurements is a technical effect. The agent directs the Office towards the Enlarged Board of Appeal decision G 1/19 Reason 99, stating that even though indirect measurements may involve significant computing efforts, they are still related to physical reality and thus of a technical nature, regardless of what use is made of the results. They point towards the specific nature of the data and the context in which it is used in the present invention, specifically that the invention acquires real world physiological data (heart rate data) from a wearable device that interacts with the user's body. The processing of this data, the agent continues, leads to a training recommendation tailored to the user's menstrual cycle, which is then presented to the user via a user interface. The agent concludes that these recommendations are not confined to a computer program but are implemented in the user's real-world physical health and fitness regime, which they say demonstrates a technical effect outside of the computer program, fulfilling the criteria of signpost (i), and again likens it with medical diagnosis methods, where there is no inherent requirement for the presented information to be acted upon, but

rather where the identification, calculation and determination from real world physical, and in this case physiological, data, provides the technical effect.

27 The examiner notes the agent's letter discusses T 1741/22 as contradicting the EPO guidelines for examination which state that providing a medical diagnosis by an automated system processing physiological measurements is a technical effect, but disagrees the present invention relates to a "medical diagnosis", stating that it is, instead a recommendation that a user trains in a certain way. The examiner notes the Enlarged Board of Appeal decision G1/19 (Reason 99) stating that calculation of the physical state of an object is typically part of a measurement method which is generally acknowledged to have technical character. Whilst the examiner agrees with this, they are not convinced the contribution lies in this field, concluding that signpost (i) is still of no aid in revealing a technical contribution.

28 The agent also proposes that signpost (v) is relevant. Specifically, that the invention collects and analyses physiological data from wearable monitoring devices to provide information about the user's physiological state, rather than a subjective opinion. It can detect subtle, phase-specific variations that may not be apparent to the user and adjust training guidance automatically improving accuracy compared to manual user assessment of the menstrual cycle phase, which is not merely automation.

29 In their letter of 14 October 2025, the examiner addresses signpost (v), again drawing parallels with the present invention and T 1741/22 where it was found that the analysis of existing physiological data to generate recommendations is a form of data interpretation and automating a professional's decision-making process using data analysis does not amount to solving a technical problem. The examiner submits that the invention does not introduce a new way of measuring or interacting with the body but rather analyses conventional measurements of the human body to provide an opinion on how a user should train (that may or may not be followed). The examiner agrees with the agent's reasoning that physiological state is measured such that subtle phase specific variations that may not be apparent to the user can be used to adjust training guidance automatically, but does not consider that adjustments to a user's training regime is a technical problem, concluding that signpost (v) also does not aid in revealing a technical contribution here.

30 Whilst EPO decisions are persuasive, they are not considered to be binding. With this in view, I can see the resemblance to the facts of this application but do not find it helpful. In the present contribution, the physical measurements in the form of heart rate are taken and other data, such as respiratory rate, phase within the menstrual cycle, and sleep activity, derived therefrom. The data that is being generated and displayed (adjusted strain recommendation), is further determined based on this indirectly measured data.

31 I agree that the collection and analysis of physiological data from wearable monitoring devices to provide information or diagnosis can have a technical effect. However, I do not agree that the collection and analysis of such data necessarily provides a technical effect, and I do not agree that adjusting an exercise regime is like providing a medical diagnosis. The "recommended strain" is broad so encompasses both subjective opinion/suggestions and information about the user's physiological state. Example recommendations may be for the user to engage in

high, moderate or low intensity training; that this general guidance is tailored to the user's menstrual cycle determined from heart rate data does not alter the fact that it is vague and subjective in nature. Examples of more specific recommendations are given such as running at least eight miles per hour for an interval of fifteen minutes, or swimming until 750 calories have been used. Whilst this is more specific any effect will only be realisable, and any training problems addressed, if the user subsequently exercises using one or more devices to establish running speed, duration and calories used.

32 In relation to the breadth of the phrase recommended strain, and as the external process (adjusting an exercise regime) is itself a not technical, I agree with the examiner that the contribution is excluded as a computer program as such. I have considered all the dependent claims, and none contain features that would overcome this objection.

33 I find that the invention of claims 1 to 33 is excluded from being patented under Section 1(2) as a program for a computer as such.

34 While reading relevant parts of the specification to facilitate drafting this decision I noticed the optional provision, in paragraph 0374, of an alert when intensity is exceeding recommended ranges. If the recommended range directly, or indirectly, concerned a measured physiological state and current intensity is determined in real-time, this would provide the user with information about their current physiological state (relative to a recommended strain) supporting their wellbeing and training needs. If the claims were amended to introduce these features, I would then agree with the agent that this is more than a computer program as such.

Business method

35 The examiner states that the contribution represents an activity that is also excluded as a method for doing business but does not provide any argument in their latest letter. In their earlier reports the examiner states that the claimed invention is automating what is usually an administrative/healthcare task, that this is a business task and that using a computer to implement a better business method does not confer patentability as confirmed by *Halliburton*. The agent disagrees arguing that the use of physiological data to determine further information is more than a business or administrative method submitting that such characterisation does not reflect its scientific nature and that the invention constitutes a new computer-implemented method of diagnosis. The business in this case is that of a personal trainer who routinely tailor exercise plans to client's physiological needs. I agree with the examiner that the provision of general training advice is a business method and not technical even when adapted using data concerning menstrual cycles.

36 However, at least in relation to the optional provision of an alert when intensity is exceeding recommended ranges discussed above; I agree with the agent that the business method exclusion would not apply. It may therefore be possible to amend the claims to (i) address the inconsistencies and (ii) restrict the claims to include an alert when intensity is exceeding a recommended range of a physiological state such that they comply with the Act. Any amendments will need to be considered by the examiner to decide whether further searching is needed and generally to continue

the examination. I will therefore remit this application to the examiner if a new set of claims is filed.

GB2508398.1

The invention

37 A circadian cycle (or rhythm) lasts about 24 hours, and is a body's internal clock that governs natural processes such as sleep, alertness, hormone release, body temperature, digestion, etc. A person's circadian rhythms may be a factor in a person's optimal amount of sleep, which may be usefully monitored as a proxy for physical recovery. Furthermore, a person's heart rate variability at a particular moment during sleep, e.g. the last phase of sleep preceding a waking event – can further provide an accurate basis for calculating a recovery score following a period of sleep. The present invention generally relates to a system and method for giving a user a sleep recommendation based on factors, such as their menstrual cycle, prior sleep data, and identified circadian cycle, as well as a strain for the user.

38 The current claim set, as originally filed, comprises two independent claims 1 and 16. Claim 1 is to a computer implemented method for calculating an amount of sleep for a user, and claim 16 to a system. These read:

> 1. A *computer implemented method for calculating an amount of sleep for a user to optimize their rest and recovery based on a user's measured physiological data, the method comprising:*
>
> *acquiring heart rate data for a user with a hormonal cycle, the data acquired from a wearable physiological monitoring device worn substantially continuously by the user over at least one entire menstrual cycle;*
>
> *identifying the hormonal cycle and a phase within the hormonal cycle for the user based on the physiological data from the wearable physiological monitoring device;*
>
> *identifying a prior sleep history including prior sleep activity automatically detected for the user based on the heart rate data from the wearable physiological monitoring device;*
>
> *identify a circadian cycle for the user based on the heart rate data;*
>
> *determining a current sleep need for the user based on a prior sleep history for the user wherein sleep need is determined as a function calculated from the heart rate data and a strain for the user;*
>
> *calculating a first amount of sleep for the user based on the current sleep need; and*
>
> *calculating a second amount of sleep to optimize rest and recovery for the user by adjusting the first calculated amount of sleep for the user according to the phase within the hormonal cycle identified based on the heart rate data and the circadian cycle; and*

presenting the calculated second amount of sleep for the user in a user interface.

16. A system comprising:

a wearable physiological monitor including one or more sensors, a first processor configured to substantially continuously acquire physiological data including heart rate data for a user based on a signal from the one or more sensors, and a communications interface for coupling with a remote resource;

a server coupled in a communicating relationship with the wearable physiological monitor, the server including a second processor configured by computer executable code to:

receive the heart rate data from the wearable physiological monitor worn substantially continuously by the user,

identify a circadian cycle for the user based on the heart rate data,

identify a prior sleep history including prior sleep activity automatically detected for the user based on the heart rate data from the wearable physiological monitoring device;

identify a current sleep cycle for the user based on a prior sleep history for the user, and to generate a recommendation to optimize rest and recovery for the user based on the current sleep cycle and the circadian cycle; and

a user interface configured to present the recommendation to the user.

Assessment

(1) Properly construe the claim

39 The examiner does not go into a detailed analysis of how the claims are to be construed, stating that the claims are clear, and that the invention, as a whole, relates to a method of providing a user with a recommended amount of time to sleep based on their hormonal cycle, prior sleep data and identified circadian cycle taking into account a strain for the user (noting that independent claim 16 omits hormonal cycle and strain and only considers the other two factors). The agent does not disagree although their comments are all based on hormonal cycle and strain and thus only address claim 1. In my view, this is a correct assessment of the invention at a general level. Nonetheless, I shall make some comments on how I have construed some of the wording of the claims:

I. Claim 1 requires "*identifying the hormonal cycle*" within a more particular context of a "*menstrual cycle*", and so the term "*the hormonal cycle*" is purposively construed as "*the menstrual cycle*". Claim 16 is silent on this although I note that this is at odds with the reference to "*the menstrual cycle"* in dependent claim 17

so this may be a drafting oversight.

II. Claim 1 requires "*determining a current sleep **need**"*, while claim 16 requires the system "*identify a current sleep **cycle***" [my emphasis added]. Conventionally, these two different terms would require two different constructions. A sleep **need** would refer to the amount of rest and recovery a person requires (see supporting paragraphs [0290], [0390] that describe this term in the context of this application and support construing the term in this way). On the other hand, the sleep **cycle** would refer to the phase of sleep that a person is currently in (see supporting paragraphs [0207], [0276], [0279] describing this term in the context of this application and supporting construing the term in this way). However, given that claim 16 requires the identification of "…*a current sleep **cycle** for the user based on a **prior** sleep **history** for the user",* this is understood to be an error, as it does not refer to identifying a sleep state of a user **while** they are asleep, but rather analysing their **prior** sleep **history**, and I have construed "*sleep cycle*" in claim 16 to be the same as "*sleep need*" in claim 1.

III. Only claim 1 requires determination of a current sleep need based on "*a strain for the user*" (in addition to prior sleep history). By contrast, claim 16 omits taking strain into account, and requires identifying a sleep cycle (construed as sleep need, as discussed above) based on prior sleep history only.

IV. Furthermore, claim 1 requires calculating a "*first amount of sleep"* and a "*second amount of sleep"*, whilst claim 16 does not require calculating an amount of sleep needed, nor refers to "first" and "second" amounts instead producing a recommendation (which may or may not relate to an amount of sleep needed).

40 Taking the above discussion into account, claim 16 is broader than claim 1 on account of limitations such as "*hormonal cycle*", "*strain for the user*", and "*first/second amount of sleep*" which are absent, as noted by the examiner.

(2) Identify the actual contribution

41 In their letter of 11 August 2025, the agent states that claim 1 defines a method for calculating an amount of sleep to optimise rest and recovery based on measured real world physiological data, such as heart rate, acquired from a wearable monitoring device, so as to identify the phase of menstrual cycle and circadian cycle to enhance the likelihood of truly restorative sleep. The agent submits that this is not mere data analysis, but a structured, multi-step signal processing that transforms real world raw sensor data into a personalised, physiological recommendation and enables more accurate and biologically aligned recommendations for rest and recovery, avoiding the need for invasive and disruptive overnight-laboratory testing that can be carried out by a medical professional instead.

42 I respectfully note that the agent does not specifically distinguish between the arrangements required by claim 1 and 16 in their letter, and much of their reasoning revolves around identifying menstrual cycle and/or recovery (from strain), whilst claim 16 is silent on this.

43 In their letter of 14 October 2025, the examiner notes that it is the nature of smart wearables that they are worn while sleeping to provide users with a range of metrics based at least in part on their physiological state, and that the contribution of the present invention is in combining real time determinations of a user's state with a scoring function/algorithm and historical sleep data to provide a determination to present to the user to aid them in deciding how long they should sleep for. The examiner concludes that in their view, the contribution is:

> *Providing a user with a recommended amount of sleep by taking into account data related to the phase of the hormonal cycle the user is in combination with their identified circadian cycle, prior sleep history data and strain and displaying this recommendation to the user*.

44 Claim 16 is silent on many features outlined above. It is not clear to me that claim 16 provides a contribution (in the sense of what it is the inventor has really added to human knowledge) compared to the disclosure in US 2016/0374567 A1 (cited in the original PCT search). In view of this, and the examiner's, and agent's focus on the contribution of claim 1, I will focus my considerations on claim 1. The contribution of claim 1 is:

> *Using a wearable device to acquire heart rate data over at least one entire menstrual cycle, identifying prior sleep history based on the heart rate data and a strain for the user, identifying circadian cycle and menstrual cycle based on the heart rate data, determining a current sleep need based on the prior sleep history, and providing a user with a recommended amount of time to sleep based on their menstrual cycle, prior sleep history, and identified circadian cycle.*

The alleged contribution of claim 16 is:

> *Using a wearable device to acquire heart rate data, identifying prior sleep history and circadian cycle based on heart rate data, determining a current sleep need based on the prior sleep history, and providing a user with a recommendation based on prior sleep history and circadian cycle.*

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

45 The examiner states that the contribution is realised as a computer program. The agent does not disagree. I agree as exemplified by claim 1 being to a "computer implemented method". The examiner goes on to determine that the contribution does not solve a technical problem within the computer or have a technical effect on a technical process outside the computer with reference to the signposts discussed in *AT&T/CVON* and *HTC v Apple*. I will also take this approach.

46 In their letter of 14 October 2025, the examiner briefly covers signposts (ii)-(iv) for completeness concluding none suggest a technical contribution. The agent does not disagree or provide any argument suggesting any of signposts (ii)-(iv) are relevant. I concur signposts (ii)-(iv) are not relevant to the circumstances of this application.

47 Regarding signpost (i), the examiner acknowledges that the agent argues the invention has a technical effect on a process outside the computer in so far as the output of the invention effects how a user manages their sleep and recovery. The examiner agrees this process is indeed external, but proposes that it is not a technical one, but rather an administrative one in the field of healthcare, wherein providing information to a user suggests how long they may need to sleep for does not have an effect on a technical process.

48 The examiner further assesses signpost (v) and agrees with the agent that the device may have some more functionality running this program in so far as the end user may be provided with information they may not have had before, but they say that the technical functionality of the device is unchanged. The examiner then discusses the problem addressed by the invention with reference to hormonal cycle data, arriving at a conclusion that while the problem of providing feedback about user sleep requirements may indeed be overcome, it is not a technical one (such as how to provide a better system to perform a technical task), concluding that signpost (v) is not relevant to this case.

49 In their letter of 11 August 2025, the agent states that the contribution is not mere data analysis, but a structured, multi-step signal processing that transforms real world raw sensor data into a personalised, physiological recommendation and enables more accurate and biologically aligned recommendations for rest and recovery. The agent submits that the contribution relates to acquisition and analysis of real-world physiological data from the wearable monitoring device, which is technical in nature. They say that other approaches would require invasive and disruptive overnight-laboratory testing which would have limited accuracy and rely on signposts (i) and (v) to support this reasoning. The examiner again draws parallels with the present invention and T 1741/22 as supporting their conclusions.

50 The contribution involves ongoing monitoring of heart rate data to produce a recommendation for the user of their current sleep need based on heart rate data and accounting for sleep history, strain, menstrual and circadian cycles (all based on heart rate data). Dedicated sleep monitoring devices exist and inventions in that field are generally not considered excluded; where these use a computer program it does not deprive them of patentability. These devices usually produce representations of the user's prior sleep pattern rather than a recommendation of sleep need of the user. Whilst the determination of an amount of sleep to recommend involves consideration of real-world data, I am not convinced that it is technical. It remains a recommendation and does not provide a technical effect on a process carried on outside the computer or solve a technical problem. As the alleged contribution of claim 16 is broader the same conclusion applies.

51 I find that the invention of claims 1 to 18 is excluded from being patented under Section 1(2) as a program for a computer as such.

52 While reading relevant parts of the specification to facilitate drafting this decision I noticed that other embodiments detail providing user feedback of a sleep score and/or hours of sleep, and the determination of sleep performance compared to the sleep need (see for example paragraphs 0208 and 0289). It may therefore be possible to amend the claims to (i) address the inconsistencies and (ii) restrict the claims to include these features. The contribution would then provide the user with

information about their current physiological state (compared to the calculated sleep need) thereby supporting their wellbeing. If the claims were amended to introduce these features, I would then agree with the agent that this is more than a computer program as such.

Business method

53 In the examination report of 29 July 2025, the examiner says that the contribution represents an activity that is also excluded as a method for doing business. This objection is maintained in the examiner's letter of 14 October 2025. The agent disagrees in their letter of 11 August 2025 arguing that the contribution is not a tool to facilitate business transactions or procedural steps of an administrative or financial nature.

54 In my view, the contribution does not relate to a commercial activity but rather takes real world measurements and processes them to provide a recommended sleep need to a user which is more than a method for doing business as such.

55 I therefore find the invention of claim 1 of GB2508398.1 is not excluded from being patented under Section 1(2) as a business method as such. It follows that the same can be said of claims 2 to 18.

Conclusion

56 I find claims 1 to 33 of application GB2411471.2 to be excluded from being patented under Section 1(2) as a program for a computer and method for doing business as such. For the reasons given above, I hereby give the applicants one month from the date of this decision to file an amended set of claims. If they do so the application will be remitted to the examiner for further processing. If not, the application will be refused under section 18(3).

57 I find claims 1 to 18 of application GB2508398.1 to be excluded from being patented under Section 1(2) as a program for a computer as such. For the reasons given above, I hereby give the applicants one month from the date of this decision to file an amended set of claims. If they do so the application will be remitted to the examiner for further processing. If not, the application will be refused under section 18(3).

Appeal

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

NIKKI DOWELL

Patent Examination Group Head