Intellectual Property Office

BL O/1146/25

09 December 2025

PATENTS ACT 1977

APPLICANT	Macusoft Ltd
ISSUE	Whether application GB2300825.3 complies with Section 1(2) of the Patents Act 1977
HEARING OFFICER	Dr Stephen Brown

DECISION

Introduction

1 Application GB2300825.3 was filed on 19th January 2023 in the name of Macusoft Ltd. Combined search and examination of the application was requested, but the examiner instead issued an Abbreviated Examination Report (AER) on 29th June 2023 stating that the claims define two separate inventions and raising an objection under section 1(2) of the Patents Act 1977 (as amended), hereinafter referred to as "the Act", that both inventions were excluded from patentability as a scheme, rule or method for doing business, a program for a computer, and as the presentation of information. The AER also raised objections under Sections 1(1)(a) and 1(1)(b) that the claims would appear to be not new and/or not inventive in view of the disclosure of the applicant's prior art document GB2587551 A, and that a search would serve no useful purpose.

2 Following a telephone conversation held on 16th October 2023 between the representative for the applicant and the examiner, and the subsequent issue of a letter by the examiner on 26th March 2024, the applicant responded by letter on 30th April 2024 detailing the reasons why they consider that the claimed inventions are not excluded from patentability under section 1(2).

3 The examiner then performed searches of both the first and second inventions and issued a combined search and examination report on 18th July 2024, which included objections to novelty and/or inventive step and exclusion from patentability. The applicant responded on 20th March 2025, detailing their reasoning on why the claims are novel and inventive and not excluded, and also requesting a Hearing should the examiner maintain their objections. The examiner issued a pre-hearing report on 16th July 2025.

4 The applicant submitted, on 24th September 2025, amended claim sets consisting of a main request and first and second auxiliary requests, and a letter outlining their

arguments. The case came before me for a hearing on 25th September 2025. This hearing only considered the question of exclusion from patentability under section 1(2). Should I find that one or more of the claims are not excluded under section 1(2), the application will be remitted to the examiner for further consideration, including of whether the claimed subject matter is novel and inventive. At the hearing, which was conducted online, the applicant was represented by Mr Peter Finnie and Dr Christopher Hartland. Also present were inventors Mr Nigel Davies and Mr Nilkunj Dodhia. As requested, I will base my decision on the claims filed on 24th September 2025.

The application

5 The application concerns the treatment of macular disease with injections and describes how the interval between injections can be adjusted by a physician depending on disease progression, whilst remaining within the boundaries specified in the treatment protocol forming part of the marketing authorisation licence for the drug being injected.

6 During a diagnostics session, various assessments of the form and function of the patient's eyes are carried out. Optical coherence topography (OCT) scans may be performed, and the resulting image data analysed to extract retinal thickness data. The patient's visual acuity may also be assessed to determine their eye function. These data are compared with data from previous diagnostic sessions to determine an appropriate recall period for a patient to receive a subsequent injection. The application aims to produce a quick, affordable, and more easily used method of determining such a recall period for a patient based on such data.

7 The application describes two main embodiments of the invention. In the first, a number called a 'response number' is calculated using retinal thickness data and visual acuity data from two temporally separated diagnostic sessions. The response number describes the state of a patient's eye compared to its previous state, and so provides a measure of the patient's response to treatment.

8 The retinal thickness component of the response number is based on a sum of values weighted according to a radial distance of each region from the central foveal region, which is the most important region for vision. An Early Treatment Diabetic Retinopathy Study (ETDRS) grid represents a known method of dividing the retina up into regions when assessing retinal thickness using OCR and can be used for the purpose of weighting the retinal thickness values. An ETDRS grid, shown in figure 4 and reproduced below, includes the foveal region (410), the inner macular ring (411), and the outer macular ring (412).

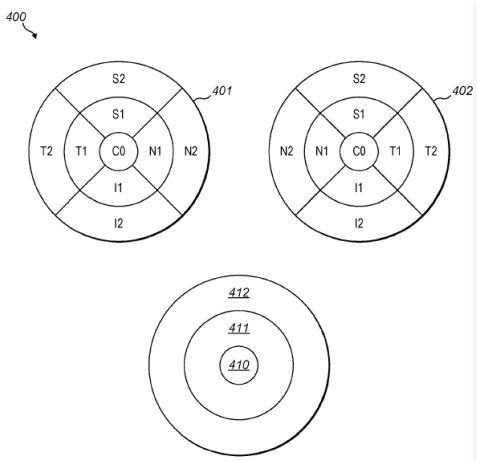

FIG. 4

9 The response number therefore represents how the retinal thickness and visual acuity have changed over time, making it easier for the clinician to see at a glance whether the patient's condition has improved, stayed the same or worsened between appointments, and also the extent of any change. The top plot of figure 3, reproduced below, is a timeline of a patient's response numbers displayed against thresholds indicating whether their condition has deteriorated between appointments (lowest horizontal bar), stayed the same (middle bar) or improved (top bar).

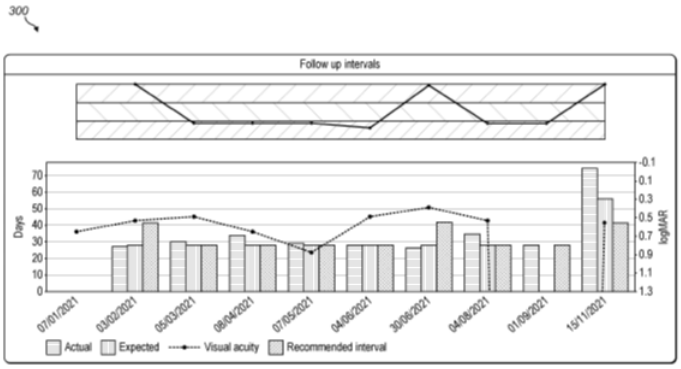

FIG. 3

10 In the second embodiment of the invention, a graphical user interface (GUI) element is produced to display the retinal thickness data from a number of diagnostic sessions. The data from each region of the ETDRS grid are arranged in the same predetermined order along a first axis and are separated in date order along a second axis. The method is detailed in figure 5 and an example GUI is shown in figure 6, both reproduced below.

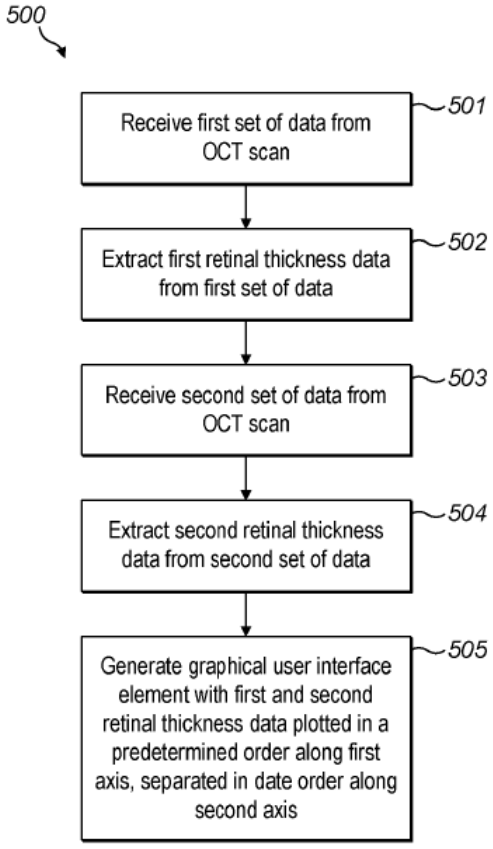

FIG. 5

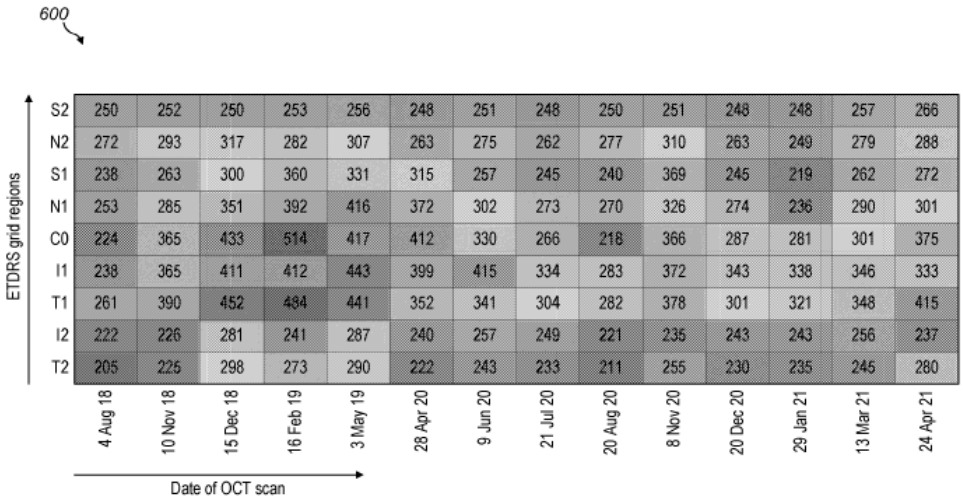

FIG. 6

The claims

11 The main claim set of 24th September 2025 includes independent claims 1 and 9 and dependent claims 2 - 8 and 10 - 16. As stated in the accompanying letter, claim 1 is based on a claim set sent to the examiner by email on 16th July 2025. I note that the

examiner responded informally by email, expressing their view that the amendments might introduce added matter and/or support issues. This will need to be considered further if the application is remitted to the examiner should I find the claims to be not excluded.

12 Claim 1 of the main claim set reads as follows:

A computer-implemented method of determining a dosage regimen for the administration of a pharmaceutical drug for the treatment of a patient diagnosed with a degenerative eye condition, comprising:

receiving a first set of patient data, wherein the first set of data comprises first visual acuity data and first retinal thickness data for an eye of the patient;

receiving a second set of patient data, obtained at a later date than the first set of data, wherein the second set of data comprises second visual acuity data and second retinal thickness data for the eye of the patient;

comparing the first visual acuity data and the second visual acuity data to determine a visual acuity change;

comparing the first retinal thickness data and the second retinal thickness data to determine a retinal thickness change;

calculating a response number based on the visual acuity change and the retinal thickness change;

determining a recall period for the patient in dependence on the calculated response number; and

scheduling a clinical appointment for the administration of the pharmaceutical drug, the date for which is selected in dependence on the recall period for the patient.

13 Claim 9 of the main claim set reads as follows:

A method of analysing optical coherence topography (OCT) image data to track progression of an ocular disease over time, the method comprising:

receiving a first set of image data from a first OCT scan of a patient;

determining first retinal thickness data from the first set of image data, wherein the first retinal thickness data comprise first values representative of retinal thickness for each of a plurality of regions of an eye of the patient;

receiving a second set of image data from a second OCT scan of the patient taken at a later date than the first set of image data;

determining second retinal thickness data from the second set of image data, wherein the second retinal thickness data comprise second values representative of retinal thickness for each of the plurality of regions of the eye of the patient; and

generating a graphical user interface element for visualising the progression of the ocular disease over time in which the first values of retinal thickness for each region of an eye from the first retinal thickness data are arranged in a predetermined order along a first axis of a coordinate system, with the second values of retinal thickness for each region of the eye from the second retinal thickness data being arranged in the same predetermined order along the first axis, separated in date order along a second axis of the coordinate system.

14 The first auxiliary claim set of 24th September 2025 includes independent claims 1 and 9 and dependent claims 2 - 8 and 10 - 16.

15 Claim 1 of the first auxiliary claim set reads as follows:

A computer-implemented method of determining a recall period for the administration of the pharmaceutical drug to a patient diagnosed with a degenerative eye condition, wherein the recall period provides a temporal component of a dosage regimen comprising:

receiving a first set of patient data, wherein the first set of data comprises first visual acuity data and first retinal thickness data for an eye of the patient;

receiving a second set of patient data, obtained at a later date than the first set of data, wherein the second set of data comprises second visual acuity data and second retinal thickness data for the eye of the patient;

comparing the first visual acuity data and the second visual acuity data to determine a visual acuity change;

comparing the first retinal thickness data and the second retinal thickness data to determine a retinal thickness change;

calculating a response number based on the visual acuity change and the retinal thickness change;

determining a recall period for the patient in dependence on the calculated response number; and

scheduling a clinical appointment for the administration of the pharmaceutical drug, the date for which is selected in dependence on the recall period for the patient.

16 Claim 9 of the first auxiliary claim set reads the same as claim 9 of the main claim set.

17 The second auxiliary claim set of 24th September 2025 includes independent claim 1 and dependent claims 2 - 8. Claim 1 reads the same as claim 9 of the main claim set.

The law - section 1(2)

18 Section 1(2) of the Act concerning inventions excluded from patentability reads as follows:

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

(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 provisions shall prevent anything from being treated as an invention for the purposes of the Act only to the extent that a patent or application for a patent relates to that thing as such.

19 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 this 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.

20 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.

21 Lewison J (as he then was) in *AT&T/CVON*[2] set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. In *HTC/Apple*[3] the signposts were reformulated slightly in light of the decision in *Gemstar*[4]. 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

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[1] *Aerotel Ltd v Telco Holdings Ltd (and others)* and *Macrossan's Application* [2006] EWCA Civ 1371
[2] *AT&T Knowledge Ventures/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)
[3] *HTC v Apple* [2013] EWCA Civ 451
[4] *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

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.

Application of the Aerotel test to claim 9 of the main claim set

22 I will begin by considering independent claim 9. I shall begin with his claim, rather than claim 1, as claim 9 of the current main claim set (dated 24th September 2025) is the same as claim 1 of the claim set of 20th March 2025. As such the applicants have made many more arguments in respect of this claim than for claim 1 and I believe that considering those arguments first will help guide my reasoning for both independent claims.

Step 1: properly construe the claim

23 In their letter accompanying the amended claim set of 20th March 2025, the applicant construes this claim as having an inventive concept that "*enables the clinician to easily see retinal thickness "creep" from the outer regions of the eye towards the inner and central regions by displaying the measured OCT data in a specific way*".

24 The examiner considered this claim in their pre-hearing report, construing it as:

> *a method of carrying out temporally separated OCT scans of an eye of a patient, determining retinal thicknesses of different regions of the eye at the different periods of time, and generating a GUI element comprising a graph of the thicknesses of the different regions over time to visualise disease progression*.

25 I would add to the examiner's construal that claim 9 defines the graphical user interface element more specifically as displaying the retinal thickness data for each region of the eye, obtained during each scan, in the same order along a first axis and in date order along a second axis.

Step 2: identify the actual or alleged contribution

26 The examiner noted that documents D3: JP2014083266 and D5: JP2018/147386, cited during their search of 17th July 2024, include charts illustrating retinal thickness data. I note that both prior art documents disclose displaying patient scan results in the form of data or images from a number of consultations along a time axis.

27 In light of this, the examiner considered the contribution to be:

> *A graphical user interface element for visualising progression of an ocular disease over time using OCT image data derived from date separated OCT scans to determine retinal thicknesses of regions of the eye at different dates,*

the graphical user interface element having a first axis in which the thicknesses of the regions of the eye are arranged in a predetermined order and a second axis, the thicknesses determined at different dates being provided in date order along the second axis.

28 In their letter accompanying the amended claims of 20th March 2025, the applicant stated that the actual contribution is that "*the method enables the clinician to see deterioration of the patient's condition in the plot*" and that "*this sequence leads to clear patterns associated with different degenerative ocular conditions, thus assisting the clinician in their diagnosis and in creating a treatment plan tailored to the individual patient*".

29 Taking both these views into consideration, I consider the contribution to be:

A graphical user interface (GUI) element for comparing retinal thicknesses of regions of the eye obtained from OCT scans performed on different dates for aiding a clinician to see patterns of improvement or deterioration, the GUI element displaying the OCT image data on a graph having a first axis along which the thicknesses of the different regions of the eye are arranged in the same order for each scan and a second axis along which the thicknesses are arranged in date order.

Step 3: does the contribution fall solely within excluded subject matter

30 The next step is to decide if the contribution lies entirely within subject matter excluded under Section 1(2). The most relevant exclusions are the presentation of information and a program for a computer.

31 In *Gemstar v Virgin*[4], Justice Mann noted that *"[a] presentation of information achieves patentability when there is a real-world technical achievement outside the information itself*". In *Garmin v Philips*[5], Justice Carr considered that features relating to the presentation of information that "*produce a technical effect serving a technical purpose*" may lead to the contribution not lying solely within the presentation of information.

32 In relation to claim 9, the applicant argues in their letter of 24th September 2025 that the invention "*provides a technical contribution by improving the processing and interpretation of medical data, supporting clinical decisions, and enabling better patient outcomes*". They state that "*technical information (clinical measurement data and medical imaging) [is provided] in a format which allows a clinician to come to a clinical diagnosis and treatment more quickly and reliably that prior art approaches*".

33 The applicant refers in this same letter to EPO decision T0115/85, which concerns an invention relating to "*displaying one of a set of predetermined messages comprising a phrase made up of a number of words, each such message indicating a specific event which may occur in the input/output device of a text processing system*". The EPO Board took the view that "*giving visual indications automatically*

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

about conditions prevailing in an apparatus or system is basically a technical problem".

34 The applicant suggests that the present application aligns with the reasoning applied by the EPO board in T0115/85, as the GUI "*integrates longitudinal clinical data, applies technical processing, and presents it in a way that assists diagnosis and treatment*". The GUI takes data from a number of ETDRS grids and presents it on a chart having vertical and horizontal axes. However, I do not consider that this constitutes technical processing. I cannot identify anything inherently technical in the way in which the information is presented. The clinician may be able to understand the data more easily when it is presented in the new format, but I do not see how this is, in itself, technical. I cannot see any parallel between claim 9 and EPO decision T0115/85 and so do not feel that this decision is helpful to the applicant.

35 The applicant also made reference to EPO decision T0643/00, which relates to an improved method of searching through a collection of digital images. Rather than searching through high resolution images one by one, a user can view, for example, eight images simultaneously at a reduced resolution before selecting an image for display at a higher resolution. The board considered that "*the objective technical problem solved may be seen in providing a technical tool for efficient search, retrieval and evaluation of images stored in an image processing apparatus*". Again, I do not consider that the invention of claim 9 provides a technical tool in the same way. The arrangement of the information in the GUI may aid the clinician to make their decision more quickly, but there is no interaction between the clinician and the system other than the data being displayed in a (better) static manner for their assessment.

36 While not raised by the applicants, I will briefly note EPO board decision T1143/06. The invention in this relates to a system and method for accessing files in a computer-based database in which data files are represented visually as an element moving on the display. The movement is such that hidden patterns in the data are easily identifiable by observing groups of elements moving in a similar way. The board considered that "*the invention solves the problem of presenting information about data files to a person in such a manner that he can easily evaluate it*" and that "*[t]his wording demonstrates more clearly that the problem is not a purely technical one*." The board considered that "*a feature which relates to the manner how cognitive content is conveyed to the user on a screen normally does not contribute to a technical solution to a technical problem*". The EPO board applied similar reasoning in decision T1741/08, in which the claim related to the specific layout of a GUI that made it easier for an inexperienced user to input data. To my mind, these inventions, which were both excluded as the presentation of information, align quite closely with the invention of claim 9.

37 The applicants did also refer to the 'Guidelines for Examination in the European Patent Office' in support of their argument. It is stated in Part G - Chapter II of the guidelines that "*[a] feature defining a presentation of information produces a technical effect if it credibly assists the user in performing a technical task by means of a continued and/or guided process of human-machine interaction"*.

38 I can see why the applicants raised this point, but I am afraid that I do not consider that the method of claim 9 meets the requirement of exhibiting a continued and/or

guided process of human-machine interaction. Rather, it simply presents clinical data in a static way that makes it easier for the clinician to spot relevant trends. This seems to me to be the display of information, as such, and thus it likely falls within that exclusion.

39 However, since the implementation of the invention uses a computer, I will now consider the AT&T signposts, in case any of those indicate a non-excluded aspect of the contribution:

40 The first signpost asks whether there is a claimed technical effect on a process outside of the computer. The claimed technical effect outside of the computer is the retinal thickness data being presented in a manner that aids the clinician to spot patterns of deterioration more easily than when viewing the raw data. To my mind, whilst this may reduce the cognitive burden of the clinician, it is not technical in nature. Neither does it have a direct effect on a process outside of the computer. Any changes in diagnosis or treatment plan are still due to the decisions and expertise of the clinician just as they are with prior art approaches. While the method of claim 9 may ease the cognitive burden on the clinician when making these decisions it does not directly make them itself.

41 I consider it to be self-evident that the second, third and fourth signposts are not met. There is no technical effect at the level of the architecture of the computer, the computer is not being made to operate in a new way, nor does it run more efficiently and effectively as a computer.

42 For the fifth signpost to be met, the perceived problem must be technical in nature. As I have decided above that it is not, the question of whether it is overcome rather than circumvented is not relevant.

Step 4: Check whether the contribution is actually technical in nature

43 As reasoned above, the contribution does not have a technical effect beyond that of the presentation of information and a program running on a computer. Thus, claim 9 also fails the fourth Aerotel step.

44 I thus decide that the invention of claim 9 is excluded from patentability under section 1(2) as the presentation of information and a program for a computer, as such.

Application of the Aerotel test to claim 1 of the main claim set

45 I shall now turn to claim 1 and consider its invention:

Step 1: properly construe the claim

46 The applicant did not construe claim 1 in their letter of 24th September 2025. As this claim was not present in the claim set on which the examiner based their pre-hearing report, neither did the examiner construe it. In order to avoid including potential added subject matter when construing the claim, I will be guided by the contents of the specification as filed.

47 The as-filed specification does not make any explicit reference to "*a dosage regimen for the administration of a pharmaceutical drug*". The applicant states in their letter of 24th September 2025 that "*[t]he term "dosage regimen" is understood in the art to encompass both the drug dosage and the timing of administration. The present invention addresses the latter component, i.e., the determination of treatment intervals (timing) for a specific individual, based on objective clinical data*." To my mind, the term 'dosage regimen' must be construed as referring to the timing of administration, i.e. the recall period, as no reference to the drug dosage is present in the as-filed specification.

48 Claim 1 refers to the 'response number' but is silent on how it is calculated. As previously discussed, I understand from the description that the response number is calculated using retinal thickness data and visual acuity data from two temporally separated diagnostic sessions and provides a measure of how the patient's condition has changed between assessments.

49 Furthermore, as reasoned above, the computer itself does not determine recall periods or schedule any appointments. These are still down to the decisions and expertise of the clinician. What the computer actually implements is a better display of information that eases the cognitive burden on the clinician when making these decisions.

50 With all these points in mind, I construe claim 1 as:

> *a computer assisted method of determining a patient recall period and scheduling a clinical appointment based on said recall period, the method comprising comparing the patient's temporally separated visual acuity data to determine a visual acuity change, comparing the patient's temporally separated retinal thickness data to determine a retinal thickness change, and calculating a response number that represents these changes.*

Step 2: identify the actual or alleged contribution

51 In order to identify the contribution, consideration of the prior art, although not essential, can be helpful. Document D1: WO 2019/193362 A2, cited by the examiner on 17th July 2024 following their search of the original unamended version of claim 1, would seem to be the closest prior art. Document D1 concerns a computer-implemented method of determining a clinical outcome for a patient suffering from a macular degenerative disease. Inputs to the method include a plurality of macular images captured over a time period, which can be used to determine macular thickness, and the results of visual acuity tests. One outcome of the method is the determination of a recommended time at which to schedule a follow-up appointment.

52 Taking D1 into account, it appears clear to me that the key aspect of claim 1 is the calculation and use of the 'response number'. This is what the applicants have really added to human knowledge. I thus consider the contribution to be:

> *a computer assisted method of summarising data representing changes in a patient's retinal thickness and visual acuity between two temporally separated clinical assessments by calculating a response number from this data, and then using the response number to determine an appropriate patient recall period.*

Steps 3 & 4: does the contribution fall solely within excluded subject matter & check if the contribution is actually technical

53 The applicant states in their letter of 24th September 2025 that *"[t]he method involves technical steps: receiving and processing longitudinal patient data, calculating a response number, determining a recall period, and scheduling drug administration"*. They further state that *"[t]he technical effect is in improved analysis of medical data and objective determination of treatment schedules"* and that the technical effect provided is "*improved patient outcomes, standardisation of treatment, and compliance with regulatory protocols*."

54 The improved analysis to which they refer would seem to be calculation of the response number to provide a systematic way of representing the data. The clinician is able to use the response number when making their decision, rather than having to view and mentally analyse a large volume of raw data. The attorneys argued during the hearing that this leads to a more objective determination of how the patient's condition has changed between appointments. I am prepared to accept this argument, as far as it goes.

55 However, as I have reasoned above, while the calculation and use of a 'response number' may ease the cognitive burden on the clinician, it is still they who are making the resultant clinical decisions. I can only conclude that the contribution is the better presentation of data, nothing more.

56 For completeness, I will now briefly consider the AT&T signposts. The first signpost is not met since the only effect outside of the computer is the clinical data being presented in a manner that aids the clinician to spot patterns more easily than when viewing the raw data. Any changes in diagnosis or treatment are due to the decisions and expertise of the clinician. It is self-evident that the second, third and fourth signposts are not met. Finally, the fifth signpost is not as met, the problem solved is not technical in nature, it concerns the presentation of information.

57 Also, the contribution does not have a technical effect beyond that of the presentation of information and a program running on a computer. So claim 1 fails the fourth Aerotel step.

58 I thus decide that the invention of claim 1 is excluded from patentability under section 1(2) as the presentation of information and a program for a computer, as such.

59 In short, while they are different in form, I believe that claims 1 and 9 are equivalent in substance and so both succumb to the same reasoning.

Application of the Aerotel test to the auxiliary claims

60 Claim 1 of the first auxiliary claim set is sufficiently similar to claim 1 of the main claim set to result in these claims being construed in substantially the same way. As claim 9 of the main claim set, claim 9 of the first auxiliary claim set, and claim 1 of the second auxiliary claim set are identical, their construction will also be the same.

61 Thus, the reasoning explained above, and the resulting decisions, apply equally to the auxiliary claims.

Decision

62 I have decided that the inventions defined in the independent claims of the main set, and both auxiliary sets, fall solely within matter excluded under Section 1(2) as the presentation of information and a program for a computer, as such. I have considered the contents of the application and do not believe that any saving amendment is possible. I therefore refuse the application under section 18(3).

Appeal

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

Dr Stephen Brown

Patent Examination Group Head