

OPINION UNDER SECTION 74A

Patent	GB2434346 B
Proprietor(s)	Airmax Group Ltd.
Exclusive Licensee	
Requester	Airmax Group Ltd.
Observer(s)	Urquhart-Dykes & Lord LLP
Date Opinion issued	14 November 2012

The request

1. The comptroller has been requested by Airmax Group Ltd. to issue an opinion as to whether (a) any of claims 1-32 of the patent GB2434346 B would be infringed by the “Ingenium Dynamics” system as supplied by FMG Support Limited and (b) whether these claims possess an inventive step over D1 in view of D2. D1 was cited during pre-grant examination. D2 was not cited during pre-grant examination.

D1 WO2005/109273 (Ekdahl)
D2 US5270708 (Kamishima).

Observations and observations-in-reply

2. Observations in response to the request were filed by Urquhart-Dykes and Lord LLP, submitting that claims 1-32 of the patent lack an inventive step in view of the two patent documents listed above. No observations were submitted in respect of infringement. Observations-in-reply were submitted by the requester.

Discussion

3. The patent relates to a system for monitoring drivers and providing feedback about their performance, with reference being made to vehicle location. Rewards such as reduced insurance premiums may be earned by good driving.

CONSTRUCTION OF THE CLAIMS

4. Claim 1 is as follows:

“A method of training a driver of a vehicle comprising:

monitoring the location of the vehicle whilst it is being driven by the driver;

monitoring parameters associated with the vehicle whilst it is being driven by the driver;

generating a driver profile that indicates the driving style of the driver based upon the location of the vehicle and the parameters associated with the vehicle whilst it is being driven;

and providing feedback to the driver using the driver profile, wherein the feedback comprises a report including one or more scores based on the style of driving as a function of the location of the vehicle”

5. The standard principles of claim construction were set out by Lord Hoffman in *Kirin-Amgen and others v Hoechst Marion Roussel Limited and others* [2005] RPC 9 (see paragraphs 32-52). The key point made in that judgment was that the approach in construing a claim should be to establish “what a person skilled in the art would have thought the patentee was using the language of the claim to mean”.
6. The location monitoring step presents no difficulty and the nature of the “parameters” in the second step is amply illustrated by the long example list in claim 4. Referring to the “at least one” language at claim 4 line 2 and also the “One, some, or all ” language at page 3 line 3 and page 20 line 23 it appears that “parameters” in the claim would be understood by the reader as being intended to mean “one or more parameters”.
7. The sentence at page 2 line 10 states that “The driving style is a description of how a vehicle is driven by a driver” and the list of driving styles given at page 3 lines 13-16 includes slow, fast, safe, unsafe, dangerous, erratic, steady, legal, illegal, aware, unaware, accelerating fast or combinations of these qualities.
8. The clause “driver profile that indicates the driving style of the driver based upon the location of the vehicle and the parameters associated with the vehicle whilst it is being driven” is taken to mean that a processed record of the parameters is prepared, taking into account the location, from which driving style is evident; see for example figures 4-13 and the sentence at page 14 lines 26-30:

“The computer processor 108 performs algorithms on the data relating to the location of the car 100 and the parameters that have been monitored by the vehicle diagnostics system 104 to determine a driver profile that indicates the driving style with which the car has been driven”

9. The clause “providing feedback to the driver using the driver profile, wherein the feedback comprises a report including one or more scores based on the style of driving as a function of the location of the vehicle” is taken to mean that at least one score reflecting the driver’s style of driving with respect to location is prepared by assessing the driver profile. The passage at page 18 lines 4-9 makes clear that extra care near certain locations is expected:

“Schools, hospitals and the like may be considered as “hot-spots” as they require particular attention by the driver when passing them. The driving style of the driver can be determined in the vicinity of these buildings to determine how mindful the driver was as they were passing these buildings. For example, if the driver slowed down as they passed these buildings, and did not accelerate or decelerate sharply, this may indicate that the driver was aware of his surroundings and was driving accordingly.”

The passage bridging pages 5 and 6 conveys a similar message:

“For example, penalising a driver for driving unsafely in a “hot spot”, such as accelerating harshly outside a school at the end of the day may cause the driver to think more carefully. If a driver was unaware that they were making such mistakes, the report may cause the driver to reassess their driving habits, and the route that they take”

10. The driver’s style is assessed in dependence on the location; a driving style deemed poor at one location may be acceptable elsewhere. The applicant, in the letter to the IPO of 12 August 2010, stated that “This aspect of the invention is particularly important as it can be used to identify poor driving style near accident black spots”. This suggests that a separate score for each type of location is required, so that the driving styles at each type of location can be identified. While there is no “file wrapper estoppel” under UK Patent Law, this interpretation is supported by the sole example of a driving style report according to this aspect of the invention, shown in Figure 14, which gives separate scores for driving near schools and near hospitals. The principal meaning of “scores based on the style of driving as a function of the location of the vehicle” appears to be that the scores are driving style scores and these scores are a function of location. Referring to the first paragraph of section 1.2 of the observations, this is the meaning that the observer appears to give this clause:

“The only feature Ekdahl does not disclose is extending the report to look at driving style in accident black spots”

11. The requester suggests a slightly different interpretation at page 2 of the observations-in-reply, stating that “the scores must be based on the style of driving and the style of driving must be a function of the location of the vehicle”. The requester therefore contends that it is the style of driving that is assessed as a function of the location, with the score conveying the assessment.
12. An overall percentage score is given at the foot of figure 14, which is presumably derived from various constituent scores, including those scores which show the driving style as a function of location. The overall score will thus also reflect to at least some extent, based on weighting, the driving style at various types of location. Without a score for each type of location it will not be possible to discern where bad driving occurred. Nevertheless, bad driving at black spots will lead to a poorer overall driving score that will cause the driver to think about how they drove. I conclude that “one or more scores based on driving style as a function of location” refers to at least one score reflecting the driver’s style of driving with respect to location, that is, that the expected standard of driving used in assessment varies with location.

13. Referring to the meaning of “score”, the observer points to the passage at page 25 line 30 to page 26 line 4:

“The scores can be calculated by a computer algorithm that uses one, some, or all, of the parameters as discussed in relation to Figures 5 to 13. For example high values for the engine RPM may contribute to an erratic driving style and in turn a low score for safety, and the data in relation to speed may provide an indication that some speed limits have been broken thereby contributing to a driving style of illegal”.

The observer contends that therefore “scores” must be interpreted as “being calculated...[from]...the parameters, substituting “uses” with “from”. The claim clearly recites “providing feedback to the driver using the driver profile” and so the quoted passage seems to be saying that the score is the output of an algorithm that operates on parts of the driver profile, as shown in figures 5-13, relating to various parameters.

14. The requester submits that “scores” in the context of the patent means an indication that gives a “relative measure” and that the “scores are used as ways of assessing a driver’s driving behaviour”. The only scores in the embodiments are percentages, and consistent and fair rating of driving performance, over different routes for example (figure 3 lists different routes), seems to require assessment in a manner that extracts a measure of underlying driving style despite differences in specific route details, for otherwise the driver who transgresses only once on a journey past many risky places would not be scored fairly against the driver who transgresses at the only risky place they pass.
15. Nonetheless it is possible to contemplate a situation in which meaningful feedback could be provided by an absolute score, for example where a driver takes the same route every day, so that while the principal meaning of score is as a relative measure it could in limited circumstances be an absolute measure. The meaning of score seems to me to be a number produced by a scoring algorithm from various parts of the driver profile. The clause at page 6 lines 21-22 is the only driving style scoring process discussed in the specification and this suggests the score is a pure number rather than a value:

“a user may be penalised for any entries in a speed range above 70 miles per hour”

INFRINGEMENT OF CLAIM 1

16. The requester submits at page 2 of their statement that claim 1 at least is infringed by “using or offering for use” in the UK the Ingenium Dynamics system, which is described in the annexes to the request.
17. The statement quotes two paragraphs in the summary of the system submitted as Annex A. I quote here, in addition to those paragraphs, a further paragraph immediately following the first quoted by the requester:

“The solution is designed to monitor the way in which a vehicle is being driven and then advise the driver of high risk incidents, producing genuine and sustainable efficiencies and benefits. Ultimately, this will reduce risk and improve road safety. The system is also capable of recording ‘celeration’ (magnitudes and directions of accelerations and decelerations) in the event of an accident. Additionally, it will also show the profile characteristics of the driver prior to an accident, indicating consistent or erratic driving.

The onboard vehicle device gathers and interprets celeration and velocity information and then transmits the information via a communications network back to the host computer. The information is passed into an intelligent data base which incorporates other elements of risk into the equation such as Black Spot locations, weather, safety cameras to enable it to makes its final risk assessment. Additional benefits of the new technology is providing improved fuel efficiency, less wear and tear on the vehicle, reduced insurance premiums, reduced carbon emissions and a safer driving environment”.

“The system can be accessed via a secure Internet portal. This gives detailed information relating to the journey showing time, position, speed, braking and acceleration force, cornering, environment and high risk zones. The results from the journey will then be analysed and produce a driving risk score. This score will be categorised into high, medium or low risk, giving a score based on events and incidents”.

18. The term “profile characteristics” in the first quoted paragraph appears to relate to “celeration” and velocity, which are “parameters” in the language of the patent. These parameters are monitored and fed into an “intelligent database”. Blackspot locations are incorporated into the “equation” to enable the intelligent data base to make its “final risk assessment” which is delivered as a “driving risk score”.
19. The claim requires that the “score” should be produced using the “driver profile” which in turn is generated from the parameters and location. The second page of Annex B appears to show that a profile of the journey is generated which reveals various incidents at various locations. The phrase “the results from the journey will then be analysed and produce a driving risk score” suggests that the calculation of the score makes at least some use of the driver profile as shown in Annex B.
20. The detail of the calculation of the score is not clear so it is not possible to determine if a higher standard of driving is required near blackspots or other locations (the driver could be penalised for driving past blackspots, without any expectation of better driving there), but if so then the method employed in the Ingenium Dynamics system will lie in the scope of claim 1 of the patent as I have construed it.

INFRINGEMENT OF CLAIMS DEPENDING FROM CLAIM 1

21. The penultimate sentence in the seventh paragraph of Annex A makes clear that insurance discounts will be available to those who drive in a safe and sensible manner. The Ingenium Dynamics system thus appears to lie in the scope of claim 2, if it lies in the scope of claim 1.

22. Referring to claim 3, which relates to monitoring of driving style in real-time, the driving style in the Ingenium Dynamics system appears to be determined only when the website is accessed-see the last of the quoted paragraphs above. The Ingenium Dynamics system thus appears not to lie in the scope of claim 3. Similar comments obtain in respect of claim 12.
23. Referring to claim 4, the Ingenium Dynamics system monitors speed, braking (deceleration) and acceleration and so falls in the scope of this claim if it falls in the scope of claim 1.
24. The Ingenium Dynamics system does not appear to record parameters in a range of values and so it does not appear to lie in the scope of claims 5 or 6.
25. Referring to claims 7-9, the intelligent data base of the Ingenium Dynamics system takes into account weather conditions in formulating the overall driving score and so the Ingenium Dynamics system appears to fall in the scope of these claims if it falls in the scope of claim 1.
26. Referring to claim 10, the Ingenium Dynamic system provides an overall driving score and so it appears to fall in the scope of this claim if it falls in the scope of claim 1.
27. Referring to claim 11, the Ingenium Dynamics system provides feedback upon webpage access and so it appears to fall in the scope of this claim if it falls in the scope of claim 1.
28. Referring to claims 13 and 14, the phrase "the report is produced periodically" in claim 13 must be given a broad meaning which embraces production of the report "at the end of each journey", as recited as the first option in claim 14. The Ingenium Dynamics system produces a report for the driver when the driver accesses the webpage. If the driver accesses the webpage at the end of each journey then the Ingenium Dynamics system is operating in a manner that falls in the scope of claims 13 and 14, if it falls in the scope of claim 1.
29. The Ingenium Dynamics system does not appear to involve driver psychometric profiles or use of parameters from an Onboard Diagnostics Interface (OBD). The Ingenium Dynamics system does not therefore appear, from the information supplied, to fall in the scope of claims 15-17.
30. To summarise, the Ingenium Dynamics system may fall in the scope of claims 1,2,4 and 7-11 of method claims 1-17

INFRINGEMENT OF CLAIMS 18-32

31. The requester alleges that claim 1 at least is infringed by "using or offering for sale" the Ingenium Dynamics system. The requester does not formally discuss an act in respect of infringement of the apparatus claims 18-32, but the most relevant act appears to be "use" of the apparatus of the Ingenium Dynamics system.

32. The requester and the observer agree that the apparatus claims 18-32 correspond to the method claims 1-15 and on inspection the correspondence is close and sufficient to allow the discussion for claims 1-15 to be valid for claims 18-32 also. I therefore conclude that the Ingenium Dynamics system may fall in the scope of claims 18,19,21 and 24-28 of the apparatus claims 18-32.

INVENTIVE STEP OF CLAIM 1

33. D1 was one of eleven documents cited in the examination report of 27 January 2010; it is discussed briefly in paragraph 9 of the report where reference is made to page 12 only, which relates to the first embodiment as discussed at pages 6-16. Three further embodiments are described. The first embodiment relates to vehicles in general; the sentence at page 7 lines 1-7 lists “car, truck, trailer; vessel, boat etc”. The second and third embodiments seem to relate to goods vehicles; see “incorrectly dimensioned real axles” at page 16 lines 26-27 and “loading cargo in the woods” at page 21 lines 10-11. The fourth embodiment is also probably focused on goods vehicles given the reference to “height level” at page 26 line 2 and in claim 15. The second to fourth embodiments correspond to dependent claims 8, 11 and 14 (and independent claims 17,20 and 23), which use the term “transport vehicle” whereas claim 1 recites merely “vehicle”. This further suggests that the fourth embodiment relates to goods vehicles
34. The first and fourth embodiments of D1 are the only embodiments which discuss feedback of driving style to the driver, and the submissions in respect of claim 1 refer only to these embodiments, though there appears to be no recognition that the passages relate to distinct embodiments. I will treat the first and fourth embodiments in turn.
35. The approach to be taken when assessing inventive step is set out in *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588 at paragraph 23:
- 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 ?.
36. Referring to step 1, the person skilled in the art here appears to be a designer of electronic aids for drivers and would be expected to have a knowledge of common techniques in this art.

37. Referring to step 2, the inventive concept is the provision in the feedback report of at least one “score” based on the driving behaviour as a function of location, the score being derived using a “driver profile” which in turn is derived from the parameters and location.
38. Referring to step 3 above, there is no dispute that D1 is the closest prior art. The difference between the state of the art and the inventive concept according to the requester is that the feedback report includes one or more scores based on the style of driving as a function of the location. According to the observer, the feedback report does contain scores, so that the difference between the prior art and the invention is that one or more of the scores in the feedback report are based on the style of driving as a function of the location of the vehicle

FIRST EMBODIMENT OF D1

39. Referring to the first embodiment, the observer submits at page 3 of the observations that D1 provides feedback in the form of scores, referring to page 9 lines 1-8:

“The feedback regarding the driving performed by the user may preferably be determined based on processing the selected portion of the automatically and repeatedly stored information received by the service provider, and by comparing the processed information with information regarding the driving performed by other users, e.g. a mean value, or by comparing it with a model information retrieved from the driving of a model user”.

40. The “processing” of the information appears to correspond to the generation of the “driver profile” of claim 1. The reference to comparison with a “model user”, who would be expected to drive well in risky areas, implies that a higher driving standard is expected in risky areas.
41. The observer submits that since the feedback is being compared to a “mean value” or “model information” it must itself be a “value” and therefore fall within the meaning of “scores”. However, the feedback here is generated by comparison and is not itself subject to comparison. Further, a “value” is not a score in the sense of the claim as I have construed it. It is not clear from this passage in isolation what is the nature of the feedback of driving behaviour as derived from the comparison, but the immediately following sentence, and claim 2, as quoted below, suggest that the feedback contemplated is in the form of “recommendations” or “information as to how to improve the driving”, rather than a score or scores as I have construed this term.

“There are various different approaches known in the literature on how to process driving data to find feedback in the form of recommendations on how to change the driving behaviour in order to improve the driving”.

“The method of claim 1 wherein at least one of said service providers is a driving training center and said feedback includes information as to how to improve the driving”.

42. Hence the difference between the first embodiment of D1 and the invention is that no

feedback score is provided, merely recommendations or guidance. D2 does not provide a score, as I have construed this term, nor is it adduced that a feedback score, as I have construed this term, is part of common general knowledge in this art. I conclude that claim 1 does not lack invention over the first embodiment of D1 in view of D2.

FOURTH EMBODIMENT OF D1

43. The fourth embodiment, described at Page 24 line 19 to page 27 line 17, relates to feedback of an “indicator value” so that the driver can see how well they are driving. The nature of what is indicated by the “indicator value” is elaborated at page 25 lines 17-21 and at page 26 lines 15-17:

“The embodiment calculates the time between acceleration is terminated and braking is started, and uses this time as a driving planning capability parameter. A low value indicates that the driver does not plan the driving very well”.

“Another indicator to be used may be how fast the accelerator pedal is released, i.e. let up. A high value would indicate bad planning or a sudden event”.

44. The passages at page 26 line 22 to page 27 line 8 explain the purpose of the feedback:

“When the driver is given access to his/her indicator value he/she can influence it by planning his/her driving better. A reward may be given to drivers that improve. The measuring unit transmits via the communication unit a new indicator value, which is presented to the driver, and he/she may obtain real time feedback, e. g. a confirmation of an improved driving planning.

The central data collection unit can give feedback in real time and as reflecting feedback afterwards. The real time information can be delivered by smartphone/PDA or similar in connection with the driving. The feedback afterwards may be presented from several drivings of the vehicle, and may be processed before presentation to reveal statistical values and to present a behaviour pattern.”

45. Further, as shown by claim 15 and the passage bridging pages 25 and 26, the indicator value may be based on location:

“The method of claim 14 wherein the repeatedly calculated driving planning capability parameter is also based on other data such as e.g. height level and position of the transport vehicle.”

“Data needed for calculations comprise velocity, accelerator pedal position, time, brake pedal position, driver identification, height level and position (direction and velocity) for the vehicle”

46. Claim 15 explicitly states that the position (location) influences the parameter. There

is no detail of how the location influences the calculation, but it is clear, for example, that the driver who does not release the accelerator pedal well before the start of a steep downwards slope is not driving sensibly. The driver profile appears to be represented here as a series of values of “driving planning capability parameter”.

47. The observer points to “statistical values” in the second paragraph quoted above as evidence that the fourth embodiment of D1 discloses feedback of a “score”, but there is no disclosure of a scoring mechanism producing a score in the sense required by claim 1 as I have construed it. D2 does not provide a score, nor is it adduced that a feedback score is part of common general knowledge in this art. I conclude that claim 1 does not lack invention over the fourth embodiment of D1 in view of D2.

INVENTIVE STEP OF OTHER CLAIMS

48. Claims 2-17 do not lack invention over D1 in view of D2 at least for the reasons set forth above in respect of claim 1. Claims 18-32 correspond to claims 1-15 and do not lack invention for corresponding reasons.

Opinion

49. I conclude that if the Ingenium Dynamics as shown in the Annexes to the request does require a higher standard of driving at certain locations, then it will fall in the scope of claims 1,2,4, 7-11,18,19,21 and 24-28 of GB2434346 B.
50. I further conclude that GB2434346 B does not lack inventive step over D1 in view of D2.

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.

K. Sylvan
Examiner

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