

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LIBERTY MUTUAL INSURANCE CO.
Petitioner

v.

PROGRESSIVE CASUALTY INSURANCE CO.
Patent Owner

Case CBM2012-00004
Patent 6,064,970

Before JAMESON LEE, JONI Y. CHANG, and MICHAEL R. ZECHER,
Administrative Patent Judges.

CHANG, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 328(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Liberty Mutual Insurance Company (“Liberty”) filed a petition on September 16, 2012, requesting a covered business method patent review of U.S. Patent No. 6,064,970 (“the ’970 patent”) pursuant to section 18(a) of the Leahy-Smith America Invents Act (“AIA”).¹ Paper 1 (“Pet.”).

Progressive Casualty Insurance Company (“Progressive”) filed a patent owner preliminary response. Paper 8 (“Prelim. Resp.”). Taking into account Progressive’s preliminary response, the Board determined that the information presented in Liberty’s petition demonstrated that it was more likely than not that the challenged claims are unpatentable. Pursuant to 35 U.S.C. § 324, the Board instituted this trial on January 25, 2013, as to claims 1 and 3-18 of the ’970 patent. Paper 10 (“Dec.”).

During the trial, Progressive filed a patent owner response (Paper 25, “PO Resp.”), and Liberty filed a reply to the patent owner response (Paper 30, “Reply”). An oral hearing was held on October 21, 2013.²

The Board has jurisdiction under 35 U.S.C. § 6(c). This decision is a final written decision under 35 U.S.C. § 328(a) as to the patentability of claims 1 and 3-18 of the ’970 patent. We hold that claims 1 and 3-18 of the ’970 patent are unpatentable under 35 U.S.C. § 103(a).

¹ Pub. L. 112-29, 125 Stat. 284, 329 (2011).

² The oral arguments for the instant trial and for CBM2012-00002 were merged and conducted at the same time. A transcript of the oral hearing is included in the record as Paper 58 (“Tr.”).

A. Related Proceedings

Liberty indicates that the '970 patent was asserted against it in *Progressive Casualty Ins. Co. v. Safeco Ins. Co. of Ill.*, Case No. 1:10-cv-01370 (N.D. Ohio). Pet. 5. The '970 patent also is subject to a covered business method patent review in CBM2012-00002. A final written decision in CBM2012-00002 is entered concurrently with this decision.

B. The '970 Patent

The '970 patent relates to a method for determining an automobile insurance premium based on data collected from monitored motor vehicle operational characteristics and operator's driving characteristics. Ex. 1001, Abs.; 3:61-66. The method assesses vehicle usage by collecting and recording monitored vehicle data, such as miles driven, types of roads driven, speeds driven, rate of acceleration, and rate of braking. *Id.* at 4:27-29; 6:29-43. According to the '970 patent, the method determines insurance costs more precisely and fairly, because new actuarial classes generated based on actual usage of the vehicle and driver behavior are better predictors of loss. *Id.* at 4:27-29; 4:53-56.

Claims 1, 4-6, and 18 are independent. Claim 3 depends directly from claim 1; claims 7-15 depend ultimately from claim 6; and claims 16 and 17 depend directly from claim 5. Claim 4, reproduced below, is illustrative of the claimed subject matter of the '970 patent.

4. A method of insuring a vehicle operator for a selected period based upon operator driving characteristics during the period, comprising, steps of:

generating an initial operator profile;

generating an insured profile for the vehicle operator prior to any monitoring of any of the vehicle operator's driving characteristics wherein the insured profile comprises coverage information, including limits and deductibles, for determining a base cost of vehicle insurance for the vehicle operator;

monitoring the vehicle operator's driving characteristics during the selected period; and

deciding a total cost of vehicle insurance for the selected period based upon the vehicle operator's driving characteristics monitored in that selected period and the base cost of insurance.³

C. Covered Business Method Patent

Upon consideration of Liberty's contentions in the petition and Progressive's arguments in the preliminary response, the Board, in the Decision on Institution, determined that the '970 patent is a covered business method patent as defined in section 18(a)(1)(E) of the AIA and 37 C.F.R. § 42.301, because at least one claim of the '970 patent is directed to a covered business method. Dec. 3-8. Accordingly, the Board concluded that the '970 patent is eligible for a covered business method patent review. *Id.*

In its patent owner response, Progressive argues that the Board must conduct a claim-by-claim analysis and determine that every challenged

³ Ex. 1001, Reexam. Cert., 1:50-65 (original emphases and bracketed matters omitted).

claim is directed to a covered business method, before it is authorized, under section 18(a)(1)(E) of the AIA, to review all of the challenged claims.

PO Resp. 2-3, n.1. Progressive asserts that the Board exceeded its “statutory authority to institute review of any patent claim which the Board has not determined to be directed to a covered business method.” *Id.*

Progressive’s argument is based on an erroneous statutory construction that interprets the word “patent” in the statutory provision on what is subject to review as “claim.” We decline to adopt such an interpretation.

As in any statutory construction analysis, we begin with the language of the statute. *In re Swanson*, 540 F.3d 1368, 1374-75 (Fed. Cir. 2008); *Duncan v. Walker*, 533 U.S. 167, 172 (2001); *Crandon v. United States*, 494 U.S. 152, 158 (1990). “In the absence of a clearly expressed legislative intention to the contrary, the language of the statute itself must ordinarily be regarded as conclusive.” *United States v. James*, 478 U.S. 597, 606 (1986) (internal quotation marks and citations omitted). “It is well settled law that the plain and unambiguous meaning of the words used by Congress prevails in the absence of a clearly expressed legislative intent to the contrary.” *Hoechst AG v. Quigg*, 917 F.2d 522, 526 (Fed. Cir. 1990).

Section 18(d)(1) of the AIA defines the term “covered business method patent” to mean (emphases added):

[A] *patent* that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product

or service, except that the term does not include *patents* for technological inventions.

If Congress intended to limit the availability of the covered business method patent review on a claim-by-claim basis, as urged by Progressive, it could have used the term “claim” rather than “patent.” Notably, when specifying the subject matter for review, Congress could have used the language “a *claim* that is directed to a method or corresponding apparatus” rather than “a *patent* that claims a method or corresponding apparatus.” Section 18(d)(1) of the AIA sets forth a single threshold based on just one claim—the satisfaction of which qualifies an entire patent as eligible for review—rather than a test that must be applied on a claim-by-claim basis to justify review of each claim.⁴ Therefore, a *patent* is eligible for a covered business method patent review if the subject matter of at least one claim is directed to a covered business method. Nothing in the legislative history, or other parts of the AIA, requires us to deviate from the plain meaning of the definition set forth in section 18(d)(1) of the AIA, as proposed by Progressive. Moreover, Progressive has not identified any statutory provision or legislative history that requires “each” claim for which trial is instituted to meet the test for a covered business method patent.

Further, Progressive provides no meaningful explanation as to why the Board’s analysis—e.g., “[d]etermining a cost of vehicle insurance is a

⁴ *See also* Transitional Program for Covered Business Method Patents – Definitions of Covered Business Method Patent and Technological Invention; Final Rule, 77 Fed. Reg. 48734, 48736 (Aug. 14, 2012).

financial problem rather than a technical problem” (Dec. 8)—was incorrect.
PO Resp. 2-3, n. 1.

For the foregoing reasons, we disagree with Progressive that the Board exceeded its statutory authority to institute a covered business method patent review as to claims 1 and 3, 5-18 of the '970 patent.

D. Prior Art Relied Upon

Liberty relies upon the following prior art references:

| | | | |
|-----------|----------------|---------------|------------|
| Camhi | US 5,430,432 | July 4, 1995 | (Ex. 1010) |
| Bouchard | US 5,465,079 | Nov. 7, 1995 | (Ex. 1004) |
| Pettersen | WO 90/02388 | Mar. 8, 1990 | (Ex. 1005) |
| Herrod | GB 2 286 369 A | Aug. 16, 1995 | (Ex. 1007) |

Paul Dorweiler, *Notes on Exposure and Premium Bases in XVI*, Part II, PROCEEDINGS OF THE CASUALTY ACTUARIAL SOCIETY 319-343 (1930) (“Dorweiler”) (Ex. 1009).

FLA. DEPT. OF INS., 1988 Automobile Insurance Shoppers’ Guide (1988) (“Florida Guide”) (Ex. 1008).

N.Y. STATE INS. DEPT., 1995 Consumers Guide on Automobile Insurance (Downstate) (1995) (“New York Guide”) (Ex. 1006).

E. Grounds of Unpatentability

The Board instituted the instant covered business method patent review based on the following grounds of unpatentability:

| Claims | Basis | References |
|-----------------------------------|--------------|--|
| 1, 3, 6-8, 10, 11, 13, 14, and 18 | § 103 | Bouchard, Pettersen, and Herrod |
| 4, 5, 16, and 17 | § 103 | Bouchard, Pettersen, and Florida Guide |
| 9 | § 103 | Bouchard, Pettersen, Herrod, and Camhi |
| 12 and 15 | § 103 | Bouchard, Pettersen, Herrod, and Dorweiler |

II. ANALYSIS

A. Claim Construction

In a covered business method patent review, claim terms are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.300(b). Under the broadest reasonable construction standard, claim terms are given their ordinary and customary meaning as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). In that regard, we must be careful not to read limitations from a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

1. “actuarial class” (claims 1, 3, 6-15, and 18)

Claim 1 recites “generating [actuarial] classes of insurance, which group operators or vehicles having a similar risk characteristic.” Liberty proposes that the claim term “actuarial class” should be construed as “a combination/group/groupings related to loss/risk/safety which are determined from classifications/characteristics representative of motor vehicle operational characteristics and driver behavior for which data is gathered.” Pet. 20-21 (citing Ex. 1003, 937-38). Progressive counters that the claim term should be construed as “a grouping of risks (*i.e.*, insureds) with similar risk characteristics and expected insurance claims loss (or insurance costs).” PO Resp. 12; *see also id.* at 9-13. Progressive argues that its proposed construction is consistent with the specification and the understanding of one of ordinary skill in the art. *Id.* at 9-10 (citing Ex. 1001, 4:52-54 (“new and more precise actuarial classes are considered to be better predictors of loss because they are based on actual use of the vehicle and the behaviors demonstrated by the driver.”)).

Although we agree with Progressive that, in light of the specification and in the context of vehicle insurance, actuarial classes are generated based on expected loss, we are not persuaded that the construction proposed by either Liberty or Progressive is the broadest reasonable interpretation of the claim term “actuarial class.” The phrases that contain the “/” symbol in Liberty’s proposed construction are subject to multiple interpretations, which cause confusion. For instance, replacing “/” symbol with the word “or” would render the construction too broad, and replacing “/” symbol with

the word “and” would render the construction too narrow. Further, as acknowledged by Liberty during the oral hearing, “a combination/group/groupings” may simply be read as “grouping.” Tr. 79:9-80:6.

On the other hand, Progressive’s proposed construction would render the claim limitation “having a similar risk characteristic” recited in claim 1 insignificant, if not wholly superfluous. Progressive’s proposed construction also would redefine the term “risks” as “insureds” to exclude a grouping of vehicles. Such an interpretation would be inconsistent with the claim language “generating [actuarial] classes of insurance, which group operators or vehicles,” and inconsistent with the specification of the ’970 patent. *See, e.g.*, Ex. 1001, 1:28-35 (the “current system of insurance creates groupings of vehicles and drivers (actuarial classes) based on the following types of classifications. Vehicle: Age, manufacturer, model; and value.”); *id.* at 4:30-52 (“Examples of possible actuarial classes developed from vehicle provided data.”)

Progressive, through its arguments regarding the asserted grounds of unpatentability based in part on Herrod, attempts to import limitations into the construction of the claim term “actuarial class”—requiring *homogeneity* as pertaining to acceleration data from different *locations*, and the risk characteristics of all drivers resident in the *household*. PO Resp. 25-33. We decline to accept those additional requirements as part of the broadest reasonable interpretation, because it would import limitations into the claims, and it would be inconsistent with the specification of the ’970 patent. For instance, some of the actuarial classes provided in the specification are

based on data that are not associated with any location or household—e.g., “driving time in minutes by each driver of the insured vehicle,” “number of minutes driving at high/low risk times,” and “number of sudden acceleration situations.” Ex. 1001, 4:30-52. It is well established that if a feature is not necessary to give meaning to what the inventor means by a claim term, it would be “extraneous” and should not be read into the claim. *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998); *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433 (Fed. Cir. 1988).

Moreover, we decline to import those limitations into the claims in absence of a special definition set forth in the specification. An inventor may rebut the presumption that a claim term be given its ordinary meaning by providing a definition of the term in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Here, the parties have not alleged that the inventor of the ’970 patent acted as his own lexicographer and provided a special definition in the specification for the claim term “actuarial class” that is different from its recognized meaning to one with ordinary skill.

In light of the claims and specification of the ’970 patent, we construe the claim term “actuarial class” broadly, but reasonably, as “a grouping related to expected loss, which is determined from motor vehicle characteristics or driving characteristics.”

2. “*initial operator profile*” (claim 4)

Liberty proposes to construe the claim term “initial operator profile” as “initial files or information with respect to the operator or the insuring thereof.” Pet. 20 (citing Ex. 1003, 756). Progressive counters that Liberty’s proposed construction is overly broad and fails to give meaning to the word “profile.” PO Resp. 13. According to Progressive, the claim term should be construed as “an initial collection of actual driving data associated with a driver that distinguishes that driver from other drivers and is related to insurance.” *Id.*

We note that the specification of the ’970 patent does not assign or suggest a particular definition for the term “initial operator profile.” In fact, that claim term, in its entirety, does not appear in the specification other than in the claims. Progressive cites, instead, to a discussion of “operator profiles” in the specification (*id.*):

It is yet another object of the present invention to generate actuarial classes and *operator profiles* relative thereto based upon actual driving characteristics of the vehicle and driver, as represented by the monitored and recorded data elements for providing a more knowledgeable, enhanced insurance rating precision.

Ex. 1001, 5:28-33 (emphasis added).

The plain and ordinary meaning of the term “profile” is “a set of characteristics or qualities that identify a type or category of person or thing.”⁵ Nothing in the specification or the plain and ordinary meaning of

⁵ RANDOM HOUSE WEBSTER’S COLLEGE DICTIONARY 1053 (9th ed. 1999).

the term “profile” precludes two drivers having the same initial operator profile. Therefore, we decline to import the limitation “that distinguishes that driver from other drivers” into the claims, as suggested by Progressive. *See Renishaw*, 158 F.3d at 1249.

In the light of the specification, we construe the claim term “initial operator profile” broadly, but reasonably, as “an initial collection of information associated with an operator that is related to motor vehicle characteristics or driving characteristics.”

3. “*insured profile*” (claim 4)

Claim 4 recites “wherein the *insured profile* comprises coverage information, including limits and deductibles, *for determining a base cost of vehicle insurance for the vehicle operator.*” Claim 5 recites “determining an *initial insured profile* for the operator of the vehicle prior to any monitoring of any data elements representative of an operating state of the vehicle or an action of the operator of the vehicle.”

Liberty proposes to construe the claim term “initial insured profile” the same as “initial operator profile” to mean “initial files or information with respect to the operator or the insuring thereof.” Pet. 20 (citing Ex. 1003, 756). Although both terms are similar, we nevertheless decline to give two different claim terms the same construction. *See CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co. KG*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“In the absence of any evidence to the contrary, we must presume that the use [of] different terms in the claims connotes different meanings.”).

Progressive argues that the claim term “insured profile” should be construed as “basic insurance information pertaining to the insured *from which an initial insurance cost is determined.*” PO Resp. 14 (emphasis added). Progressive’s proposed construction, however, would render the claim limitation “for determining a base cost of vehicle insurance” recited in claim 4, and the word “initial” in the claim term “*initial* insured profile” recited in claim 5, insignificant, if not wholly superfluous.

Consistent with the language of claim 4, the specification of the ’970 patent provides: “This insured profile includes the information about [insurance] coverages including limits and deductibles, which are necessary for establishing the appropriate cost of insurance of the subject insured.” Ex. 1001, 10:36-39.

In the light of the claims and specification, we construe the claim term “insured profile” broadly, but reasonably, as “insurance information pertaining to the insured and the insured vehicle,” which includes, for example, insurance coverage information such as limits and deductibles.

4. “*cost of insurance*” and “*base cost of insurance*” (claims 1, 4, and 5)

Liberty contends that the claim term “cost of insurance” should be construed as “a/one or more or all cost(s) associated with insurance of the vehicle, including, but not limited to, a cost to the insured and/or insurer/underwriter associated with the insurance.” Pet. 21 (citing Ex. 1003, 758-61). On the other hand, Progressive argues that, in the context of the claim, the word “cost” refers to the *insured’s* cost (i.e., the premium), and

not the *insurer's* cost. PO Resp. 14-15. We agree with Progressive, as such a construction would be consistent with the specification and claims of the '970 patent.

The specification of the '970 patent provides that “the following information would produce a unique *vehicle insurance cost*. . . . A change to any of this information would result in a different *premium* being charged, if the change resulted in a different actuarial class for that variable.” Ex. 1001, 1:56-2:16 (emphases added). Claim 5 recites “identifying a surcharge or discount to be applied to the base cost [of vehicle insurance],” and “producing a final cost of vehicle insurance for the selected period from the base cost and the surcharge or discount.” In the context of the specification and claims, “cost of insurance” is the premium paid by the policyholder for the insurance coverage. The plain and ordinary meaning of the term “premium” is the amount paid in installment by a policyholder for coverage under a contract.⁶

Therefore, in the light of the specification and claims, we construe the claim term “cost of insurance” as “the amount paid or to be paid by the policyholder for insurance coverage of a selected time period under the policy contract.” Similarly, we construe the claim term “base cost of insurance” as “the *initial* amount paid or to be paid by the policyholder for insurance coverage under the policy contract, during a time period, before any surcharge or bonus is applied.”

⁶ RANDOM HOUSE WEBSTER'S COLLEGE DICTIONARY 1041 (9th ed. 1999).

5. “*safety standard*” (claims 5, 10, 11, 13, 14, and 16-18)

Liberty proposes that the claim term “safety standard” be construed as “value/criteria associated with the promotion of safety/prevention of risk/loss/injury.” Pet. 21 (citing Ex. 1003, 761). Progressive does not dispute Liberty’s proposed construction. The specification of the ’970 patent does not provide a special definition.

The ordinary meaning of the claim term “safety standard” includes a measure or criterion of exemption from injury, danger, or loss.”⁷ In the context of the vehicle insurance, Liberty’s proposed interpretation is broad, consistent with that ordinary meaning, and consistent with the specification as it would be understood by one of ordinary skill in the art. *See, e.g.*, Ex. 1001, 8:44-46 (“Select[ed] ones of the plurality of data elements are recorded when the ones are determined to have an identified relationship to the safety standards.”).

We, therefore, adopt Liberty’s proffered construction as the broadest reasonable construction consistent with the specification. But we further clarify that the “/” symbol should be replaced with the word “or”—“value or criteria associated with the promotion of safety or prevention of risk, loss, or injury.”

⁷ RANDOM HOUSE WEBSTER’S COLLEGE DICTIONARY 1157 (9th ed. 1999).

B. The Level of Ordinary Skill in the Art

On the record before us, the evidence shows that the level of ordinary skill in the art is high.⁸ We also note that a hypothetical person of ordinary skill in the art possesses ordinary skill both in the determination of insurance premiums and in telematics. PO Resp. 21-23. Notably, conventional insurance schemes that use *actuarial classes* to determine vehicle insurance costs were well known in the art at the time of the invention. *See, e.g.*, Prelim. Resp. 13-14; 33-34; PO Resp. 23 (stating one of ordinary skill in the art “would have had knowledge of multi-variant analysis of risk classifications . . . [and] actuarial standards applicable to risk classification systems.”).

We agree with Progressive that the Florida Guide and New York Guide, cited by Liberty, reflect conventional or basic knowledge of one with ordinary skill in the art, and include the conventional insurance determination methods disclosed in the background section of the '970 patent. Prelim. Resp. 13-14 (stating the Florida and New York Guides “discuss the same subject matter (*i.e.*, the existence of traditional actuarial

⁸ For instance, Liberty submits that a person of ordinary skill in the art as to insurance pricing would have at least a Bachelor of Science (“B.S.”) in Mathematics, or equivalent, with at least five years of experience in the insurance industry setting premiums for auto insurance, and as an associate in the Casualty Actuarial Society. Ex. 1011 ¶ 17. Liberty also provides that a person of ordinary skill in the art as to telematics data would have at least a B.S. degree in electrical engineering, computer engineering, computer science, or the equivalent thereof, and at least one to two years of experience with vehicle telematics systems. Ex. 1014 ¶ 17.

classes) that . . . is disclosed in the background section of the '970 patent"); *id.* at 34 (stating the cited portions of the Florida Guide are “essentially identical to the prior art knowledge disclosed in columns 1 and 2 of the '970 patent.”). We conclude that the background section of the '970 patent (Ex. 1001, 1:17-2:37) reflects the level of ordinary skill in the art. Therefore, one with ordinary skill in the art would have had a thorough understanding of using the principle of *actuarial classes* to determine vehicle insurance costs.

The '970 patent also indicates that the electronic motor vehicle control and operating systems were known in the art at the time of invention, and those systems could be modified readily to obtain the desired types of information relevant to determine the cost of insurance. Ex. 1001, 3:25-28. Indeed, Liberty's expert, Mr. Scott Andrew, testifies that “several companies had developed vehicle telematics systems that measured vehicle data, such as speed, acceleration, time of day, etc.,” and these “systems commonly included in-vehicle data monitoring devices that would monitor the data, store it, and/or transmit it to a remote location outside of the vehicle.” Ex. 1014 ¶ 20. As noted in the '970 patent, vehicle tracking systems—those that used communication links with satellite navigation systems for providing information describing a vehicle's location based upon navigation signals—were also well known in the art. Ex. 1001, 3:28-32. The '970 patent further provides that it was known in the art to detect and record seatbelt usage to assist in determination of the vehicle insurance costs. Ex. 1001, 2:66-3:2 (citing U.S. Patent No. 4,667,336, Abs. (“a system for

detecting and recording each time a seat belt is used [and depending] on the level of seat belt usage the driver earns discounts on car insurance premiums.”)). Therefore, one with ordinary skill in the art would have possessed the knowledge of determining insurance premiums using monitored vehicle data.

In determining the knowledge level of one with ordinary skill in the art, we note that various factors may be considered, including “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). We also recognize that the knowledge of one with ordinary skill in the art would have included the basic principles, standards, and practices of insurance premium determination—e.g., Risk Classification Statement of Principles of the American Academy of Actuaries (Ex. 2012), Actuarial Standard of Practice No. 12, Concerning Risk Classification, issued by the Actuarial Standards Board (Ex. 2020), Interpretative Opinion 3: Professional Communications of Actuaries and Interpretative Opinion 4: Actuarial Principles and Practices (Ex. 1023). Ex. 2011 ¶ 16; Ex. 2020 ¶ 5.

C. Principles of Law

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that

the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).

We analyze the instituted grounds of unpatentability in accordance with the above-stated principles. We also recognize that prior art references must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *Paulsen*, 30 F.3d at 1480. Moreover, “it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.” *In re Preda*, 401 F.2d 825, 826 (CCPA 1968). That is because an obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418; *see also Translogic*, 504 F.3d at 1259.

D. Claims 4, 5, 16, and 17

Liberty asserts that claims 4, 5, 16, and 17 are unpatentable under 35 U.S.C. § 103(a) over the combination of Bouchard, Pettersen, and Florida Guide. Pet. 31-33, 41-50, 71-72. In support of that asserted ground of unpatentability, Liberty provides explanations as to how each claim limitation is met by the combination of the cited prior art references (Pet. 41-50, 71-72) and rationales for combining the references (Pet. 31-33). Liberty also submits declarations of Ms. Mary L. O'Neil (Ex. 1011) and Mr. Andrews (Ex. 1014) to support its positions.

Upon review of Liberty's petition and supporting evidence, as well as Progressive's response and supporting evidence, we determine that Liberty has demonstrated, by a preponderance of the evidence, that claims 4, 5, 16, and 17 are unpatentable over the combination of Bouchard, Pettersen, and Florida Guide.

1. Florida Guide

The Florida Guide is an automobile insurance shoppers' guide that is designed to help insurance policyholders control the cost associated with automobile insurance. Ex. 1008, 2.⁹ According to the Florida Guide, all drivers in the state of Florida must carry a minimum amount of property damage liability coverage in addition to the required personal injury protection coverage. *Id.* at 3. The cost of auto insurance for the

⁹ All references to the page numbers in Florida Guide refer to the original page numbers in the bottom, right corner.

policyholder may vary, based on factors such as the type of coverage the policyholder selects, the liability limits and deductibles, and the resident location of the policyholder's car. *Id.* at 11, 13. For example, if the policyholder selects a high liability limit and a low deductible, the auto insurance premium is likely to be higher. *Id.* at 11. Different premiums are charged in different areas, because of variation in frequency of accidents, medical expenses, and repair cost. *Id.* at 13.

2. *Bouchard*

Bouchard discloses a system for evaluating a driver's performance under actual, real-time conditions and using such evaluations to determine the driver's ability to operate a vehicle safely. Ex. 1004, Abs. Specifically, Bouchard's system monitors the driver's performance characteristics, such as average driving speed, braking and acceleration habits, and typical distance from the vehicle immediately in front. *Id.* at 28:47-52. The driver's performance is monitored and compared constantly to the driver's past performance and the normal driving standards. *Id.* at Abs.

Bouchard's system has an event recording apparatus ("ERA") that records selectable vehicle performance, operational status, and/or environment information. Ex. 1004, 5:53-57. Bouchard's ERA is configured to store a wide variety of vehicle information gathered by sensors dispersed throughout a vehicle. *Id.* at 5:66-6:1. The recorded information is used to determine a baseline performance standard based on the driver's past performance against which a driver's present performance can be measured.

Id. at 5:60-64. Each driver has a personalized ERA, which maintains: (1) information that identifies the driver; and (2) a record of the driver's driving history and performance. *Id.* at 6:4-8. A system processing unit generates a profile of the driver based upon the information that is stored in the ERA. *Id.* at 6:11-15.

3. *Pettersen*

Pettersen discloses an electronic monitoring and reporting system for recording the driving pattern of a motor vehicle. Ex. 1005 at 1-7.¹⁰ Pettersen's system monitors the speed of the vehicle, the distance driven, and the acceleration of the vehicle, to generate data describing the driving pattern of the motor vehicle. *Id.* at 1-2. According to Pettersen, it would be advantageous to insurance companies to use such an electronic monitoring system for recording the driving pattern of the policyholder and to set a bonus arrangement that gives a higher bonus to those policyholders having a "careful" driving pattern (*e.g.*, low speeds and low accelerations). *Id.*

4. *Discussion*

Based on our review of Liberty's petition and supporting evidence, we determine that Liberty has provided sufficient evidence to show that the combination of Bouchard, Pettersen, and Florida Guide renders obvious each claim limitation of claims 4, 5, 16, and 17.

¹⁰ The page numbers used herein to reference Pettersen (Ex. 1005) refer to the original page numbers of the reference.

a. Generating initial operator profile

Claim 4 recites “generating an initial operator profile.” In its petition, Liberty asserts that the combination of Bouchard, Pettersen, and Florida Guide discloses that claim limitation. Pet. 42-44 (citing Ex. 1004, 5:59-63 (“[T]he information that is recorded is also used *to determine a baseline performance standard* based on the driver’s past performance against which a driver’s present performance can be measured.”))).

Progressive argues that the combination of the cited references fails to disclose generating an initial operator profile. PO Resp. 37-38. In particular, Progressive argues that “Bouchard only involves creating baseline data about a driver to compare against that same driver’s later driving performance,” but it “does not involve creating a profile that distinguishes a driver from other drivers.” *Id.*

In its reply, Liberty responds that Progressive applies an improper construction of the claim term “an initial operator profile.” Reply 5. According to Liberty, even under Progressive’s improper construction, Bouchard, in combination with Pettersen and Florida Guide, discloses generating an initial operator profile. Reply 5-6 (citing Ex. 1004, 5:59-63; Abs.; 5:13-29; 5:66-6:8; Ex. 1014 ¶¶ 26, 27).

We agree with Liberty that Progressive’s argument is based on an overly narrow claim construction—“an initial collection of actual driving data associated with a driver that distinguishes that driver from other drivers and is related to insurance”—which, as discussed above, we decline to adopt as it would import improperly an extraneous limitation into the claim.

In light of the specification, we construe the claim term “initial operator profile” broadly, but reasonably, as “an initial collection of information associated with an operator that is related to motor vehicle characteristics or driving characteristics.”

In any event, under either construction, we determine that Liberty has demonstrated that the combination of cited prior art references discloses “generating an initial operator profile,” as required by claim 4. Bouchard’s driver-specific profile distinguishes each driver using the driver’s own stored past performance, as well as standard values, to evaluate the driver’s ability to safely operate a vehicle. Ex. 1004, 5:59-63; Abs.; 5:13-29; 5:66-6:8. Specifically, Bouchard describes that “the information that is recorded [by ERA for accident analysis and driver fitness evaluation] is also used to determine a *baseline performance standard* based on *the driver’s past performance* against which a driver’s present performance can be measured.” Ex. 1004, 5:59-63 (emphasis added). Bouchard also describes that “each driver maintains a removable ERA that is *personalized to that particular driver*,” and each “ERA has information that identifies the driver, and a record of that driver’s driving history and performance.” *Id.* at 6:5-8.

Therefore, we determine that the combination of Bouchard, Pettersen, and Florida Guide suggests “generating an initial operator profile,” as recited by claim 4.

b. Generating insured profile

Claim 4 recites “generating an *insured profile* for the vehicle operator prior to any monitoring of any of the vehicle operator’s driving

characteristics wherein the *insured profile* comprises coverage information, including limits and deductibles, for determining a base cost of vehicle insurance for the vehicle operator.” Claims 5, 16, and 17 each require a similar limitation for determining an *initial insured profile*.

In its petition, Liberty asserts that Florida Guide, in combination with Bouchard and Pettersen, discloses generating or determining an “insured profile,” as required by claims 4, 5, 16, and 17. Pet. 43. Liberty notes that Florida Guide teaches that “the cost to a driver for auto insurance will depend on an initial collection (profile) of information about the insured driver, including the driver’s selected coverage limits and deductibles, together with other profile information about the driver.” Pet. 43-44 (citing Ex. 1008, 3, 6, 11, 12). Liberty also provides rationales to combine the cited references, including the following:

[A person of ordinary skill in the art] would have found it obvious to implement Bouchard’s system of monitoring vehicle data in view of Pettersen’s teachings of using monitored driving characteristics to determine insured risk and premiums with Florida Guide’s teachings that insurers are required, in issuing policies, to generate an insured profile comprising coverage information, including limits and deductibles, for determining a base cost of vehicle insurance, because insurance companies are required, in issuing policies, to do so.

Pet. 33.

Progressive argues that the combination of cited prior art references does not render generating “an insured profile” obvious. PO Resp. 37. Specifically, Progressive asserts that “there is no indication in Pettersen that [an insured profile] would have been needed, since Pettersen may have been

using a single premium for all insureds (as in common rental car insurance).” *Id.*

Progressive’s argument narrowly focuses on Pettersen’s discussion of car rental insurance, and fails to consider Pettersen’s disclosure, as a whole, from the perspective of one of ordinary skill in the art. Although Pettersen does disclose an embodiment pertaining to insuring rental cars, Pettersen also discloses leasing and ownership of cars. Ex. 1005, 1. Notably, Pettersen expressly describes “[r]ecording of the driving pattern of a motor vehicle may be of interest for car owners as well as car insurance companies.” Ex. 1005, 1. A prior art reference must be considered for everything it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect. *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907 (Fed. Cir. 1985).

Furthermore, upon reviewing the parties’ arguments and supporting evidence, we hold that Liberty’s rationale for modifying Bouchard’s system in light of Pettersen and Florida Guide constitutes an articulated reason with a rational underpinning to justify the legal conclusion of obviousness. Pet. 33, 43-44, 46-47, 50.

For the foregoing reasons, we determine that the combination of cited prior art references suggests generating an insured profile, as required by claims 4, 5, 16, and 17.

c. Determining a total cost of insurance for the selected period

Liberty relies upon Pettersen, in combination with Bouchard and Florida Guide, to teach determining a total cost of insurance for the *selected*

period based on the monitored driving characteristics, as required in claims 4, 5, 16, and 17. Pet. 43; *see also* Pet. 36-37 (which addresses a similar limitation recited in claims 1 and 3). Specifically, Liberty submits that a person of ordinary skill in the art would have understood that, by disclosing “a more fair bonus arrangement,” Pettersen discloses rewarding a driver retrospectively for past behavior. *Id.* In support of Liberty’s position, Ms. O’Neil testifies:

[A] person of ordinary skill in the art would have understood Pettersen’s disclosure of a “more fair bonus arrangement” to describe rewarding a policyholder *for past driving performance*. As part of this arrangement, it would have been understood that the policyholder’s insurance policy premium varies *retrospectively based on the policyholder’s driving statistics* (from the vehicle telematics data).

Ex. 1011 ¶ 24 (emphases added).

Progressive argues that Pettersen does not disclose “monitoring driving characteristics during a selected period, and deciding a total cost of insurance for *that selected period* based on the monitored driving characteristics.” PO Resp. 36 (emphasis added). In particular, Progressive alleges that this limitation is not met by Pettersen, and that only by relying upon impermissible hindsight can Liberty conclude that Pettersen’s bonus necessarily would be applied retrospectively. *Id.* Progressive further contends that Pettersen’s bonus could be applied to a *renewal period* following the monitoring period. *Id.* at 33-34.

We are not persuaded by Progressive’s arguments. Essentially, the issue is whether Pettersen’s “bonus” is: (1) a discount that is applied

retrospectively to the premium for the *monitored* period, as urged by Liberty; or (2) a discount that is applied prospectively to the premium for the *renewal* period following the monitored period, as argued by Progressive. We note that, in the situation where the insurance policy is not renewed by the policyholder or insurance company, there would be *no renewal period*. Naturally, Pettersen's "bonus" could not have applied prospectively to a renewal period that may not exist, as suggested by Progressive.

In addition, Pettersen describes that the "car insurance companies may fit the motor vehicles of their [policyholders] with the apparatus and read the same at equal intervals," and that on "the basis of these readings, the company may set a more fair bonus arrangement, i.e. that [policyholders] having a 'careful' driving pattern – low speeds and low accelerations – may be allotted a higher bonus." Ex. 1005, 1. Pettersen refers to determining a "bonus." A "bonus," itself, suggests the existence of a base amount with respect to which the "bonus" would be applied. The only premium in existence in the monitored period is the premium for the monitored period. The premium for the renewal period has not been determined yet. Therefore, we find that the "bonus" amount is applied retroactively to the premium in effect during the monitored period.

Based on Pettersen's explicit disclosure, and as supported by Ms. O'Neal's testimony (Ex. 1011 ¶ 24), one with ordinary skill would have recognized that Pettersen teaches monitoring the vehicle operator's driving characteristics *during a selected period*, and Pettersen's bonus is determined based on the monitored driving behavior during *that selected period*. It is

clear that the bonus is a reward for the “careful” driving pattern that occurred during the actual *monitored* period.

Therefore, we determine that Pettersen, in combination with Bouchard and Florida Guide, suggests a total cost of insurance for a selected period based on the monitored driving characteristics, as required by claims 4, 5, 16, and 17. For the foregoing reasons, we conclude that Liberty has demonstrated, by a preponderance of evidence, that claims 4, 5, 16, and 17 are unpatentable over the combination of Bouchard, Pettersen, and Florida Guide.

E. Claims 1, 3, 6-15, and 18

Liberty alleges that claims 1, 3, 6-8, 10, 11, 13, 14, and 18 are unpatentable under 35 U.S.C. § 103(a) over the combination of Bouchard, Pettersen, and Herrod. Pet. 31-41, 50-71, and 73-79. Liberty also cites Camhi to satisfy the additional limitation in dependent claim 9 (Pet. 62-63), and cites Dorweiler to satisfy the additional limitations in dependent claims 12 and 15 (Pet. 65-67, 69-70). In support of those asserted grounds of unpatentability, Liberty provides detailed explanations as to how each claim limitation is met by the combination of the cited prior art references and rationales for combining the references. Liberty also relies upon the declarations of Ms. O’Neil (Ex. 1011) and Mr. Andrews (Ex. 1014) to support its positions.

Upon review of Liberty’s petition and supporting evidence, as well as Progressive’s response and supporting evidence, we determine that Liberty

has demonstrated, by a preponderance of the evidence, that claims 1, 3, 6-15, and 18 are unpatentable over the cited prior art references.

1. Corresponding log of vehicle speed and location

Claims 1, 3, 11, and 14 each require “a time and location of vehicle operation and a corresponding log of vehicle speed for the time and location.” In its petition, Liberty asserts that Bouchard, in combination with Pettersen and Herrod, discloses monitoring time, location, and speed of vehicle operation, and logging these data elements. Pet. 37-38 (citing Ex. 1004, fig. 18; 30:19-22 (“certain time factors are classified . . . time factors include time of day”)); Ex. 1004, fig. 18; 30:8-11; 11:1-2; 9:39-47 (“Additional information can be obtained by providing other sensors, such as . . . geographic positioning information.”); Ex. 1004, fig. 18; 30:29-35 (“Certain profiles are then generated (STEP 1803). These profiles include characterizations of the history of the throttle, speed . . . , and/or turn signal use”); Ex. 1004, fig. 18; 31:36-38 (“In STEP 1807, the recent history of the driver is updated.”)).

Progressive argues that the combination of cited prior art references does not disclose or suggest “a time and *location* of vehicle operation and a corresponding log of vehicle speed for the time and *location*,” as required by claims 1, 3, 11, and 14. PO Resp. 23-25, 35. In particular, Progressive argues that the “environment classification” step illustrated in Figure 18 of Bouchard is not a location determination step, as that “step merely infers

‘environment’ from driving speed,” but does not record the *actual location*.
Id. at 24.

We are not persuaded by Progressive’s argument that the combination of cited prior art references does not disclose recording the actual location of the vehicle. Progressive’s argument narrowly focuses on Bouchard’s “environment classification” step shown in Figure 18, and fails to consider Bouchard’s disclosure, as a whole, from the perspective of one with ordinary skill in the art. *See Paulsen*, 30 F.3d at 1480.

Bouchard uses an ERA that records selectable vehicle performance, operational status, and environment information, to determine the vehicle operational conditions. Ex. 1004, 5:53-57; 10:51-53. Bouchard’s ERA is configured to store a wide variety of vehicle operational information—including vehicle speed and *geographic positioning information*—gathered by sensors dispersed throughout a vehicle. *Id.* at 5:66-6:1; 9:21-50; 11:1-2. According to Bouchard, by recording this data, its device for motor vehicles can function as an event recording “black box” to reconstruct an accident more reliably and less expensively, using real historical data. *Id.* at 4:39-41; 9:21-50; 11:22-25. One of ordinary skill in the art would have recognized that the *actual* location of the vehicle is being recorded in order to allow Bouchard’s system to reconstruct an accident reliably, because Bouchard specifically states that its ERA is configured to store a variety of information, including geographic position information (Ex. 1004, 5:66-6:1; 9:21-50; 11:1-2).

Based on those disclosures of Bouchard, we determine that Liberty has demonstrated that one of ordinary skill in the art would have recognized that Bouchard's system records "a time and location of vehicle operation and a corresponding log of vehicle speed for the time and location," as recited in claims 1, 3, 11, and 14.

2. *Generating actuarial classes*

Claims 1, 3, 6-15, and 18 each require generating or using actuarial classes. As we articulated above in the claim construction section, we construe the claim term "actuarial class" as "a grouping related to expected loss, which is determined from motor vehicle characteristics or driving characteristics."

Liberty asserts that Herrod, in combination with Bouchard and Pettersen, discloses:

generating classes associated with different levels of risk, which group operators or vehicles having a similar risk characteristic, from actual monitored driving characteristics (*e.g.*, acceleration applied by a driver) during a selected time period as represented by recorded data elements representative of an operating state of the vehicles or an action of the operators.

Pet. 39, 56, 78 (citing Ex. 1007, Abs., 1-2).

Herrod discloses a computer-based monitoring and reporting device that is used in a vehicle to measure driver acceleration patterns and report

associated accident risks. Ex. 1007, 1-2.¹¹ In that regard, Herrod describes that its device can be used for measuring safety-related features of driving, and the monitored data can be useful to insurance companies. *Id.* Herrod further discloses classifying drivers into *groups, each of which is associated with a different level of accident risk, based on actual monitored data*, such as “levels of acceleration,” that represent driver behavior and vehicle operating characteristics. Ex. 1007, Abs., 1-2.

a. Generating groups of risk based on actual monitored driving data

Progressive argues that one of ordinary skill in the art would not have understood the “behavioral groups” of Herrod to be actuarial classes. PO Resp. 25-33. In particular, Progressive argues, and Mr. Miller testifies, that Herrod’s accident statistics obtained from a national survey of drivers using the device “would be unreliable for purposes of establishing an actuarial class,” and a person of ordinary skill in the art would not “have created an actuarial class based on survey data.” *Id.* at 29; Ex. 2011 ¶ 45. Progressive alleges that Herrod’s behavioral groups would not suggest actuarial classes to one of ordinary skill in the art, because “Herrod suggests looking at accident statistics (no loss data) in creating its behavioral groups.” *Id.* at 31.

Liberty disagrees and argues that Herrod discloses using actual driving data. Reply 13-14 (citing Ex. 1007, 1-2 (“Measurements made on

¹¹ The page numbers used herein to refer Herrod (Ex. 1007) are the original page numbers of the reference on the top, center of each page.

many drivers over a long period are used to establish these levels of accident risk.”); Ex. 1022 ¶¶ 25, 38). Liberty specifically establishes that Herrod discloses:

[A computer] read[s] the recorded acceleration patterns and the time history of driver group and advice codes. This information is added to a database, which is used to update the algorithms used for analyzing the acceleration patterns and the accident statistics.

Id. (citing Ex. 1007, 1-2). Liberty maintains that Herrod discloses creating actuarial classes using actual monitored acceleration data. Reply 2-3, 8-9 (citing Ex. 1007, Abs, 1-2; Ex. 1022 ¶¶ 31, 35-36). We agree with Liberty.

We are not persuaded by Progressive’s arguments and supporting evidence, as they incorrectly characterize Herrod as disclosing mere usage of *survey data*, and fail to discuss Herrod’s disclosure, as a whole. A prior art reference must be considered for everything it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect. *EWP Corp.*, 755 F.2d at 907.

Notably, Progressive’s arguments and Mr. Miller’s testimony narrowly focus on Herrod’s disclosure of obtaining additional accident statistics from a national survey of drivers using the device, and ignore Herrod’s disclosure of generating groups of accident risk based on *actual monitored driving data*. In particular, Herrod discloses:

This invention concerns an electronic device for *measuring and recording the levels of acceleration* applied by the drivers of road vehicles. These accelerations include forward acceleration, backward acceleration (braking) and left and right accelerations (cornering). The device contains a computer, which processes

accumulated *acceleration data* to determine to which of several behavioural groups the driver belongs. *Each group is associated with a significantly different level of accident risk. Measurements made on many drivers over a long period are used to establish these levels of accident risk.*

Ex. 1007, 1 (emphases added).

Therefore, we are unpersuaded by Progressive's arguments (PO Resp. 25-33), and Mr. Miller's testimony (Ex. 2010 ¶ 45), that are based on an incomplete reading of Herrod: (1) that it merely discloses the usage of *accident statistics* obtained from a national survey, and (2) that it does not disclose generating groups of accident risk based on *actual monitored acceleration data*.

b. Pertaining to insurance

Progressive alleges that a person of ordinary skill in the art "would not have considered Herrod to be of interest or value to the insurance field or to the determination of insurance premium." PO Resp. 31-32 (citing Ex. 2011 ¶ 41). Progressive also argues that Herrod's device is used for driver training and performance assessment, and to detect "reckless drivers." PO Resp. 27. As support, Mr. Miller testifies that one of ordinary skill in the art, at best, might have understood that Herrod's disclosure concerning a demonstration of competence "meant that the data could have been used by an insurer to determine a driver's eligibility to be offered insurance coverage." Ex. 2011 ¶ 41. Mr. Miller concludes that a person of ordinary skill in the art would have recognized that Herrod's data was not suitable for

that purpose as the data is incomplete and unreliable for the purposes of determining insurance premiums. *Id.*

Progressive’s argument and Mr. Miller’s testimony narrowly focus on only certain aspects of Herrod—“safe drivers [would be able] to demonstrate their competence to insurance companies”—but fail to discuss Herrod’s disclosure, as a whole, in a meaningful way from the perspective of one with ordinary skill in the art. *Id.* For instance, Progressive and Mr. Miller do not explain adequately why Herrod’s groups of accident risks generated based on monitored driving data, and the database of the recorded acceleration data would not be of interest or value to insurance companies. To the contrary, Herrod expressly states that the monitored driving data could be useful to insurers and the “database might also be used by . . . *insurance companies, who wish to monitor the standard of driving of certain vehicles.*” Ex. 1007, Abs., 1-2 (emphasis added). As noted in the background section of the ’970 patent, one with ordinary skill in the art would have possessed the knowledge of determining insurance premiums based on monitored vehicle data. *See, e.g.*, Ex. 1001, 2:66-3:2 (citing U.S. Patent No. 4,667,336, Abs. (disclosing “a system for detecting and recording each time a seat belt is used[, and depending] on the level of seat belt usage[,] the driver earns discounts on car insurance premiums”))).

Therefore, we determine that Mr. Miller’s testimony focusing on, and discussing only a selected portion of, Herrod’s disclosure is not meaningful and does not account for other relevant portions of Herrod’s disclosure. As such, it is entitled to little weight. *See Velandier v. Garner*, 348 F.3d

1359, 1371 (Fed. Cir. 2003) (“In giving more weight to prior publications than to subsequent conclusory statements by experts, the Board acted well within [its] discretion.”).

For the foregoing reasons, we agree with Liberty that a person of ordinary skill in the art would have considered Herrod to be of interest or value to the insurance field.

c. Homogeneity and household data

Progressive submits that one of ordinary skill in the art would have understood that Herrod’s driver-specific data would not be suitable for establishing an actuarial class. PO Resp. 32. According to Progressive, one of ordinary skill in the art would have recognized that, to determine auto insurance premiums accurately, an insurer needs to understand the risk characteristics of all drivers resident in the household. *Id.* at 31-32 (citing Ex. 1007, 3; Ex. 2011 ¶ 42). Progressive also maintains that Herrod fails the homogeneity requirement, because Herrod groups drivers who have acceleration data collected from different driving location settings (e.g., urban and rural settings), creating different degrees of insurance risk. *Id.* (citing Ex. 2011 ¶ 44). In support of Progressive’s position, Mr. Miller testifies that Herrod does not disclose that all of the drivers in the household would be monitored and that Herrod’s data are incomplete and would fail the actuarial standard for homogeneity. Ex. 2011 ¶¶ 42-44.

Liberty responds that applying those homogeneity and household data requirements to *each risk characteristic* is contrary to the usage of the claim term “actuarial class” in the ’970 patent. Reply 14-15 (citing Ex. 1022

¶¶ 25-29, 31, 33, 35-36, 38). Liberty notes that some of the actuarial classes disclosed in the '970 patent are based on data that are not associated with any location or household—“driving time in minutes by each driver of the insured vehicle,” “number of minutes driving at high/low risk times,” and “number of sudden acceleration situations.” *Id.*; Ex. 1001, 4:30-52.

We agree with Liberty. Indeed, as we have explained in our claim construction analysis above, we decline to add the alleged homogeneity and household data requirements to the broadest reasonable interpretation of the claim term “actuarial class.” Progressive’s arguments are not commensurate with the scope of the claims. *See In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (“It is well established that limitations not appearing in the claims cannot be relied upon for patentability.”).

Further, Liberty’s expert, Ms. O’Neil, testifies that there is “no requirement that a *single risk characteristic* completely measures all insurance risk,” because “conventional insurance rating depends on the evaluation and actuarial grouping utilizing many separate risk characteristics, including age, location, mileage, etc.” Ex. 1022 ¶ 35 (citing Ex. 1001, 1:28-2:20) (emphasis added). Ms. O’Neil explains that classifications based on driving experience—drivers with less than three years of driving experience and those with greater than three years driving experience—do not depend on driving location. Ex. 1022 ¶ 36. Ms. O’Neil also explains that “Herrod’s measured risk characteristics do not have to measure *all* risk distinctions in order to form the basis of valid actuarial classes.” *Id.* As to the household issue, Ms. O’Neil testifies that “Herrod

discusses providing a programmable monitoring card to any driver of any equipped vehicle[;] any driver with a suitable card or disk can be monitored whilst driving any equipped vehicle.” Ex. 1022 ¶ 33 (citing Ex. 1007, 2 (internal quotations omitted)).

On this record, we credit the testimony of Ms. O’Neil over that of Mr. Miller. *See Yorkey v. Diab*, 601 F.3d 1279, 1284 (Fed. Cir. 2010) (holding that Board has discretion to give more weight to one item of evidence over another “unless no reasonable trier of fact could have done so”). We find Ms. O’Neil’s explanations to be more consistent with the level of one with ordinary skill in the art as disclosed in the background section of the ’970 patent, as well as with Herrod. In contrast, Mr. Miller does not explain adequately why homogeneity and household data are required. We observe that not every actuarial class known at the time of invention depends on driving location or household data, such as those disclosed in the background of the ’970 patent (Ex. 1001, 1:28-52).

For the foregoing reasons, we agree with Liberty that Herrod’s data would be suitable for establishing an actuarial class.

d. Expected loss data

Progressive argues that “in order to be an actuarial class, a group of risks should predict insurance losses or costs,” and that Herrod’s behavioral groups would not be predictive of insurance claims losses (or premiums). PO Resp. 9-10 (citing Ex. 2011 ¶¶ 16-17), 27-31 (citing Ex. 2011 ¶ 41). Progressive submits that Herrod’s behavioral groups would not have differentiated *expected loss costs*. *Id.* at 28. Progressive also alleges that

Herrod's *accident statistics* "may help to indicate how safe a driver is, but they are not part of the expected loss determination." *Id.* at 30-31 (citing Ex. 2011 ¶ 45).

However, Progressive's argument does not account for certain teachings of Herrod, including its device can be used for measuring safety-related features of driving, and *the monitored data can be useful to insurance companies*. Ex. 1007, 1-2. Further, as explained by Liberty, "risk characteristics need not be *direct or complete* predictors of future losses to form the basis of an actuarial class," as confirmed by Actuarial Standards of Practice No. 12 (Ex. 2020, ASOP No. 12 ¶ 5.2) and the examples provided by the '970 patent (Ex. 1001, 1:27-2:47). Reply 12-13 (emphasis added) (citing Ex. 1022 ¶¶ 7-13, 25, 27-29). Liberty submits that a driver's age or marital status, or a vehicle's value or age, does not predict losses or costs *directly*, nor do these risk characteristics result in actual insurance claims. *Id.* (citing Ex. 1022 ¶¶ 11-12, Ex. 1001, 1:27-2:47, Ex. 2020, ASOP No. 12 ¶ 5.2, Ex. 2012, 15). In support of Liberty's position, Ms. O'Neil testifies:

Herrod teaches monitoring and gathering acceleration data and accident statistics to group drivers in "behavioural groups" reflecting different levels of accident risk. A [person of ordinary skill in the art] would know that, in order to create such behavioural groups relevant to insurance rating—which a [person of ordinary skill in the art] would interpret as actuarial classes—would involve analyzing the data collected in Herrod to determine any associated expected loss costs with such data.

Ex. 1022 ¶ 25.

Ms. O’Neil explains that “[i]t is *the job of an actuary* to determine how risk characteristics, such as number of accidents or sudden braking events, correlate to predicted future insurance losses so that an insurer can charge an individual the proper premium,” and “[t]his can be done—as explained, for example, in Standard of Practice No. 12—using ‘actual experience’ (actual frequency and severity claims data) or ‘*any reliable source*, including statistical or other mathematical analysis of available data.” Ex. 1022 ¶ 12 (citing Ex. 2020, ASOP No. 12, pp. 3-4). Ms. O’Neil also testifies that a person of ordinary skill in the art would have the knowledge to calculate expected loss costs associated with monitored driving data. Ex. 1022 ¶¶ 27-29.

We credit Ms. O’Neil’s testimony (Ex. 1022 ¶¶ 12, 25, 27-29), because her explanations are consistent with Herrod, the disclosure of the ’970 patent, and other evidence on record with respect to the level of ordinary skill in the art. In a proper obviousness analysis, we note that Herrod’s disclosure must be “considered together with the knowledge of one of ordinary skill in the pertinent art.” *Paulsen*, 30 F.3d at 1480. Such analysis must include reading the prior art in context, taking into account “demands known to the design community,” “the background knowledge possessed by a person having ordinary skill in the art,” and “the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR*, 550 U.S. at 418.

As noted above, generating actuarial classes of insurance, which group operators or vehicles having a similar risk characteristic, was well known in the art. The background section of the '970 patent describes:

Conventional methods for determining costs of motor vehicle insurance involve gathering relevant historical data from a personal interview with the applicant for the insurance and by referencing the applicant's public motor vehicle driving record that is maintained by a governmental agency, such as a Bureau of Motor Vehicles. *Such data results in a classification of the applicant to a broad actuarial class for which insurance rates are assigned based upon the empirical experience of the insurer.* Many factors are relevant to such classification in a particular actuarial class, such as age, sex, marital status, location of residence and driving record.

The current system of insurance creates groupings of vehicles and drivers (actuarial classes) based on the following types of classifications.

Vehicle: Age; manufacturer, model; and value.

Driver: Age; sex; marital status; driving record (based on government reports), violations (citations); at fault accidents; and place of residence.

Coverage: Types of losses covered, liability, uninsured motorist, comprehensive, and collision; liability limits; and deductibles.

Ex. 1001, 1:17-52 (emphases added).

Actuarial Standard of Practice No. 12 expressly states that “[r]isk classification has been a fundamental part of actuarial practice since the beginning of the profession.” Ex. 2020 ¶ 5, ASOP No. 12 § 3. Risk classification is defined as the “process of grouping risks with similar risk characteristics so that differences in costs may be recognized.” Ex. 2020, ASOP No. 12 ¶ 2.8. The design of risk classification systems requires “the

actuary to exercise professional judgment as well as to use statistical tools.” Ex. 2020, ASOP No. 12 § 5. For example, the “actuary can rely on actual or reasonably anticipated experience,” and relevant “information from any reliable source, including statistical or other mathematical analysis of available data, may be used.” *Id.* § 5.1. Furthermore, in the absence of actual experience, “an actuary may rely on clear actuarial evidence that differences in costs are related to a particular risk characteristic.” *Id.* Therefore, one with ordinary skill in the art would have known to analyze the monitored vehicle data collected by Herrod’s device to determine any associated expected loss costs with such data, in order to classifying drivers into groups relevant to insurance rating.

For the foregoing reasons, we determine that, in light of Herrod’s disclosure, it would have been obvious to one with ordinary skill in the art to generate actuarial classes of insurance by grouping operators having a similar risk characteristic using actual monitored driving data.

3. Selected period

Claims 1 and 3 require determining a cost of insurance for the vehicle during the *monitored time period*. As discussed above with respect to claims 4, 5, 16, and 17, Liberty relies upon Pettersen, in combination with Bouchard, to meet this claim limitation. Pet. 36-37, 43. We already have addressed Progressive’s argument that Pettersen does not apply the bonus retrospectively to the monitored period, and for those same reasons, we determine that this argument is unavailing.

4. *Safety standard*

Claims 10, 13, and 18 each require using safety standard values as the preset values. Liberty notes that the monitored conditions in Bouchard are used to determine whether the driver's performance conforms to normal driving standards and the driver's past performance, and Bouchard's warning unit emits sounds when the hazard level exceeds a threshold level. Pet. 63-64, 67-68, 75-76 (citing Ex. 1004, 5:20-25; 24:33-37).

Progressive counters that Bouchard only discloses "using a driver's own driving patterns as a baseline for evaluating driving performance" and not "safety or other actuarial standard values." PO Resp. 35-36. We do not agree with Progressive. Progressive's argument narrowly focuses on Bouchard's disclosure of individual driver's past performance, and fails to consider Bouchard's disclosure, as a whole, from the perspective of one with ordinary skill in the art. A prior art reference must be considered for everything it teaches by way of technology and is not limited to the particular invention it is describing and attempting to protect. *EWP Corp.*, 755 F.2d at 907. For instance, Progressive's argument ignores Bouchard's determination of whether the driver's performance conforms to normal driving standards, as well as Bouchard's disclosure of a warning system (Ex. 1004, Abs.; 5:20-25; 24:33-37).

Progressive further argues that Bouchard's warning system does not involve the generation of an output data value that is used to compute an insurance rating, as required by claims 10, 13, and 18. PO Resp. 35-36. Progressive's argument is unpersuasive. Nonobviousness cannot be

established by attacking references individually when, as here, the ground of unpatentability is based upon the teachings of a combination of prior art references. *In re Keller*, 642 F.2d 413, 426 (CCPA 1981). Instead, the test for obviousness is whether the combination of references, taken as a whole, would have suggested the patentees' invention to a person having ordinary skill in the art. *In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986).

Liberty relies upon Pettersen, in combination with Bouchard, to disclose “generating an adjusted insurance cost as the output data value.” Pet. 64, 68 (citing Ex. 1005, 1 (“On the basis of these [driving pattern] readings, the [car insurance] company may e.g., set a more fair bonus arrangement, i.e. that [policyholders] having a ‘careful’ driving pattern – low speeds and low accelerations – may be allotted a higher bonus.”); Ex. 1011 ¶ 19). Liberty further provides a rationale for combining the references—a person with ordinary skill in the art would “have recognized that Bouchard’s sophisticated driver safety monitoring and analysis techniques could advantageously be implemented using Pettersen’s teachings of determining insurance costs using a similar system.” Pet. 31. Upon reviewing the parties’ arguments and supporting evidence, we hold that Liberty’s rationale for modifying Bouchard with the teachings of Pettersen constitutes an articulated reason with a rational underpinning to justify the legal conclusion of obviousness. *See KSR*, 550 U.S. at 416 (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”).

Accordingly, we determine that the combination of Bouchard, Pettersen, and Herrod renders the subject matter recited in claims 1, 10, and 18 obvious to a person with ordinary skill in the art.

5. *Conclusion*

For the foregoing reasons, we conclude that Liberty has demonstrated, by a preponderance of the evidence, that claims 1, 3, 6-15, and 18 are unpatentable over the combination of the cited prior art references.

F. Progressive's Motion to Exclude

Progressive seeks to exclude certain evidence submitted in support of Liberty's reply. Paper 46 ("Mot."). Liberty opposes Progressive's motion to exclude. Paper 51 ("Opp."). As the movant, Progressive has the burden of proof to establish that it is entitled to the requested relief. *See* 37 C.F.R. § 42.20(c). For the reasons stated below, Progressive's motion is *denied*.

A motion to exclude must explain why the evidence is not admissible (e.g., relevance or hearsay), but may not be used to challenge the sufficiency of the evidence to prove a particular fact. Office Patent Trial Practice Guide, 77 Fed. Reg. 48765, 48767 (Aug. 14, 2012). A motion to exclude evidence also must:

- (a) Identify where in the record the objection originally was made;
- (b) Identify where in the record the evidence sought to be excluded was relied upon by an opponent;
- (c) Address objections to exhibits in numerical order; and
- (d) Explain each objection.

Id. However, Progressive's motion to exclude does not identify where in the

record the objection originally was made, and does not address objections to exhibits in numerical order.

While a motion to exclude may raise issues related to admissibility of evidence, it is not an opportunity to file a sur-reply, and also is not a mechanism to argue that a reply contains new arguments or relies on evidence necessary to make out a prima facie case. Here, Progressive's motion to exclude contains such improper arguments, and is in the nature of a sur-reply. Mot. 1-9. Moreover, as discussed below, Progressive's arguments also are without merit.

1. Rebuttal evidence concerning Herrod

Progressive seeks to exclude Ms. O'Neil's testimony concerning Herrod's disclosure. Mot. 4 (citing Ex. 1022 ¶¶ 25, 27-29, 31, 33). According to Progressive, Ms. O'Neil's testimony includes new arguments and constitutes new evidence that should have been submitted with Liberty's petition. *Id.* at 4-7. In particular, Progressive argues that Ms. O'Neil's testimony cites to new portions of Herrod, and Ms. O'Neil's testimony as to the understanding of Herrod from the perspective of a person of ordinary skill in the art, constitutes evidence that should have been submitted with Liberty's petition. *Id.* at 5-7.

Liberty opposes and argues that the Board instituted the instant trial based on Liberty's arguments and evidence submitted with its petition, and therefore, its rebuttal evidence should not be excluded as "new evidence" that should have been submitted with the petition to make out a prima facie

case. Opp. 3-4 (citing Decision on Institution, Paper 10 at 2). Liberty also maintains that its rebuttal evidence was submitted properly to respond to the issues raised in Progressive's response, as it continues to urge unpatentability on the same grounds instituted by the Board. *Id.* at 5-6.

Having considered the parties' arguments and supporting evidence, we are not persuaded by Progressive's arguments. Rather, we agree with Liberty that Ms. O'Neil's testimony (Ex. 1022 ¶¶ 25, 27-29, 31, 33) properly responded to issues raised by Progressive in the patent owner response (PO Resp. 25-33, Ex. 2011 ¶¶ 41-45).

Notably, each section of Ms. O'Neil's testimony (e.g., Ex. 1022 ¶¶ 24, 30, 32) first directs our attention to the testimony of Progressive's expert, Mr. Miller (e.g., Ex. 2011 ¶¶ 41, 42), and then presents her rebuttal testimony as to Mr. Miller's assertions (Ex. 1022 ¶¶ 25-29, 31, 33). For instance, to rebut Progressive's argument and Mr. Miller's corresponding testimony that a person of ordinary skill in the art "would have had no reason to think that the disclosure of Herrod had any relevance to . . . the determination of auto insurance premiums" (PO Resp. 27, Ex. 2011 ¶ 41), Ms. O'Neil testifies that such a contention is based on an unreasonably narrow reading of Herrod's disclosure. Ex. 1022 ¶ 25. Ms. O'Neil explains that Herrod's disclosure, on its face, explicitly and repeatedly describes using its system for insurance purposes. *Id.* (citing Ex. 1007, 1, 2).

For the reasons stated above, Progressive has not demonstrated that Ms. O'Neil's testimony exceeds the proper scope of reply evidence.

2. *Reliability of the evidence*

Progressive seeks to exclude Ms. O’Neil’s testimony concerning the testimony of Progressive expert, Mr. Miller, as unreliable, pursuant to Federal Rule of Evidence 702.¹² Mot. 8-9 (citing Ex. 1022 ¶¶ 8, 13, 27, 32, 38). Progressive argues that Ms. O’Neil’s declaration “mischaracterizes” Mr. Miller’s declaration and Progressive’s arguments as requiring *actual* claims loss data to generate actuarial classes. *Id.* at 8. In support of its arguments, Progressive notes that Mr. Miller’s declaration does not use the phrase “*actual* claims data,” and that the Statement of Principles (Ex. 2012) cited by Mr. Miller (Ex. 2011 ¶ 16) makes it clear that actuarial classification may be based on data other than *actual* claims loss data (Ex. 2012, p. 4).

We are not persuaded by Progressive’s arguments. Rather, we determine that Ms. O’Neil’s testimony (Ex. 1022 ¶¶ 8, 13, 27, 32, 38) is reasonable rebuttal evidence in the light of Progressive’s arguments submitted in its patent owner response and Mr. Miller’s declaration. We observe that Progressive’s patent owner response and Mr. Miller’s declaration are ambiguous as to whether the claim term “actuarial classes” requires use of both *actual* claims loss data and *expected* claims loss data. For instance, Progressive states:

When determining or evaluating actuarial classes, *claims loss data is used*, not accident statistics. (Ex. 2011, Miller Decl. at

¹² The Federal Rules of Evidence generally apply to a review. 37 C.F.R. § 42.62(a).

¶ 45; *see also* Ex. 2013, O’Neil depo. at 91:7-11 (“An actuarial class, as I mentioned it here, is grouping – sharing similar risk characteristics and presumably with differentiated expected loss costs.”).) While *claims loss data indicates both the frequency and severity of losses*, accident data would reveal only the frequency of accidents. Moreover, an insured may have accidents that do not result in claims. Accident statistics may help to indicate how safe a driver is, but they are not part of the expected loss determination. (Ex. 2011, Miller Decl. at ¶ 45.) Yet Herrod suggests looking at accident statistics (not *loss* data) in creating its behavioral groups, further confirming that its behavioral groups would not suggest actuarial classes to a POSITA.

PO Resp. 30-31 (emphases added).

Mr. Miller testifies that:

By the same token, differences in expected costs between classes do not preclude the *actual claim* experience of risks in one class from being the same as the *actual claim* experience of risks in another class. This overlap phenomenon is both an anticipated and, indeed, statistically inevitable ramification of any sound risk classification system.

Ex. 2011 ¶ 44 (emphases added).

Rather, Herrod discloses the use of “accident statistics . . . obtained from a national survey of drivers using the device” for this purpose. (Ex. 1007 at 000002.) *In determining actuarial classes and auto insurance premiums, it is claims data that are used*, not accident statistics. It is my opinion that data “obtained from a national survey of drivers using the device” would be unreliable for purposes of establishing an actuarial class, such that no POSITA would have created an actuarial class that depended on survey data.

Ex. 2011 ¶ 45 (emphasis added).

We decline to exclude the testimony of Liberty's expert, Ms. O'Neil, because the ambiguity was created first by Progressive's arguments and expert testimony. It was reasonable for Ms. O'Neil to rebut Progressive's argument and Mr. Miller's testimony by providing opinions regarding use of both *actual* claims loss data and *expected* claims loss data in the context of actuarial classes. Moreover, the Board is capable of taking into account the baselessness of a witness's testimony, if any, when weighing all of the testimony of the witness.

For the foregoing reasons, we are not persuaded by Progressive's argument that Ms. O'Neil's testimony (Ex. 1022 ¶¶ 8, 13, 27, 32, 38) should be excluded.

III. CONCLUSION

Liberty has met its burden of proof, by a preponderance of the evidence, in showing that claims 1 and 3-18 of the '970 patent are unpatentable based on the following grounds:

- A. Claims 1, 3, 6-8, 10, 11, 13, 14, and 18 are unpatentable under 35U.S.C. § 103(a) over Bouchard, Pettersen, and Herrod;
- B. Claims 4, 5, 16, and 17 are unpatentable under 35 U.S.C. § 103(a) over Bouchard, Pettersen, and Florida Guide;
- C. Claim 9 is unpatentable under 35 U.S.C. § 103(a) over Bouchard, Pettersen, Herrod, and Camhi; and
- D. Claims 12 and 15 are unpatentable under 35 U.S.C. § 103(a) over Bouchard, Pettersen, Herrod, and Dorweiler.

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IV. ORDER

In consideration of the foregoing, it is
ORDERED that claims 1 and 3-18 of the '970 patent are
CANCELLED; and
FURTHER ORDERED that Progressive's Motion to Exclude
Evidence is *denied*.

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