

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ECHELON FITNESS MULTIMEDIA, LLC
Petitioner,

v.

PELOTON INTERACTIVE, INC.,
Patent Owner.

IPR2020-01187
Patent 10,022,590 B2

Before SCOTT A. DANIELS, RICHARD H. MARSCHALL, and
ALYSSA A. FINAMORE, *Administrative Patent Judges*.

FINAMORE, *Administrative Patent Judge*.

JUDGEMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

ORDER
Dismissing Petitioner's Motion to Exclude Evidence
37 C.F.R. § 42.64(c)

I. INTRODUCTION

Echelon Fitness Multimedia, LLC (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting an *inter partes* review of claims 1–20 of U.S. Patent No. 10,022,590 B2 (“the ’590 patent”) (Ex. 1001). Pet. 1. Peloton Interactive, Inc. (“Patent Owner”) filed a Preliminary Response (Paper 8, “Prelim. Resp.”), as well as a Disclaimer (Ex. 2001). According to the Disclaimer, Patent Owner disclaimed claims 1–13, 19, and 20 of the ’590 patent. Ex. 2001, 1.

On January 26, 2021, we issued a Decision on institution (Paper 13, “Inst. Dec.”). In the Decision, we granted institution of an *inter partes* review of claims 14–18, which are the claims that remain in this proceeding in view of Patent Owner’s Disclaimer. Inst. Dec. 50.

During trial, Patent Owner filed a Response (Paper 28, “PO Resp.”). Petitioner filed a Reply (Paper 35, “Reply”), and Patent Owner filed a Sur-reply (Paper 43, “Sur-reply”).

Petitioner filed a Motion to Exclude Evidence (Paper 44, “Mot.”). Patent Owner filed an Opposition (Paper 46).

Oral argument took place October 14, 2021. We entered the transcript (Paper 50) into the record.

This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we conclude Petitioner has proven by a preponderance of the evidence that claims 14–18 are unpatentable.

II. BACKGROUND

A. *Real Parties in Interest*

Petitioner identifies the real parties in interest as: itself; North Castle Partners, LLC; Echelon Fitness, LLC; Viatek Consumer Products Group

Inc.; Echelon Studio LLC; Echelon Holdings, LLC; NCP-Echelon, LLC; Special Situations Investing Group II, LLC; StoneBridge 2020, L.P.; Fitness 2020 Offshore, Inc.; GF PYCR; Primo Secondo LLC; The Albright Family Rev. Trust; and Echelon Management 2, LLC. Pet. 1; Paper 6, 1–2; Paper 10, 1–2. Patent Owner identifies itself as the real party in interest. Paper 4, 2.

B. Related Matters

Petitioner and Patent Owner identify the following related matters involving the '590 patent:

Peloton Interactive, Inc. v. Echelon Fitness, LLC,
No. 1:19-cv-01903-RGA (D. Del. filed Oct. 8, 2019); and

Peloton Interactive Inc. v. Flywheel Sports, Inc.,
No. 2:19-cv-00317-JRG-RSP (E.D. Tex. dismissed
Feb. 6, 2020).

Pet. 1–2; Paper 4, 2.

The parties identify the following patents and patent applications as related matters: U.S. Patent No. 9,174,085 B2; U.S. Patent No. 9,233,276 B1; U.S. Patent No. 9,861,855 B2; U.S. Patent No. 10,322,315 B2; and U.S. Patent No. 10,486,026 B2. Pet. 2; Paper 4, 2. Patent Owner further identifies the following patents and patent applications as related matters: U.S. Patent No. 10,639,521 B2; U.S. Design Patent Application No. 29/660,009; U.S. Patent Application No. 16/866,499; and U.S. Patent Application No. 16/902,195. Paper 4, 3.

Petitioner identifies as related matters the following proceedings involving the related patents:

Peloton Interactive Inc. v. Flywheel Sports, Inc.,
No. 2:18-cv-00390-RWS-RSP (E.D. Tex. dismissed

Feb. 6, 2020) (challenging U.S. Patent Nos. 9,174,085 B2, 9,233,276 B1, 9,861,855 B2, and 10,322,315 B2);

Flywheel Sports, Inc. v. Peloton Interactive, Inc.,
IPR2019-00294 (PTAB dismissed Feb. 3, 2020) (challenging
U.S. Patent No. 9,174,085 B2);

Flywheel Sports, Inc. v. Peloton Interactive, Inc.,
IPR2019-00295 (PTAB dismissed Feb. 3, 2020) (challenging
U.S. Patent No. 9,233,276 B1);

Flywheel Sports, Inc. v. Peloton Interactive, Inc.,
IPR2019-00564 (PTAB dismissed Feb. 3, 2020) (challenging
U.S. Patent No. 9,861,855 B2); and

Flywheel Sports, Inc. v. Peloton Interactive, Inc.,
IPR2019-01411 (PTAB dismissed Feb. 3, 2020) (challenging
U.S. Patent No. 10,322,590 B2).

Pet. 2–3. The following proceedings also involve the related patents:

Echelon Fitness Multimedia, LLC v. Peloton Interactive, Inc.,
IPR2020-01186 (PTAB filed July 2, 2020) (challenging U.S.
Patent No. 10,322,315 B2);

Echelon Fitness Multimedia, LLC v. Peloton Interactive, Inc.,
IPR2020-01541 (PTAB filed Sept. 1, 2020) (challenging U.S.
Patent No. 10,486,026 B2);

Echelon Fitness Multimedia, LLC v. Peloton Interactive, Inc.,
IPR2021-00848 (PTAB filed May 3, 2021) (challenging U.S.
Patent No. 10,639,521 B2); and

iFIT, INC. v. Peloton Interactive, Inc., IPR2022-00323 (PTAB
filed Dec. 17, 2021) (challenging U.S. Patent No. 10,639,521
B2).

C. The '590 Patent

According to the '590 patent, “the invention relates to a system and method for providing streaming and on-demand exercise classes.” Ex. 1001, 1:23–25. The invention “comprises networked exercise systems and methods whereby one or more stationary exercise bicycles . . . are equipped with an associated local system that allows the user to fully participate in live instructor-led or recorded cycling classes from any location that can access a suitable communications network.” *Id.* at 4:1–7. Figure 1, reproduced below, shows a local exercise system.

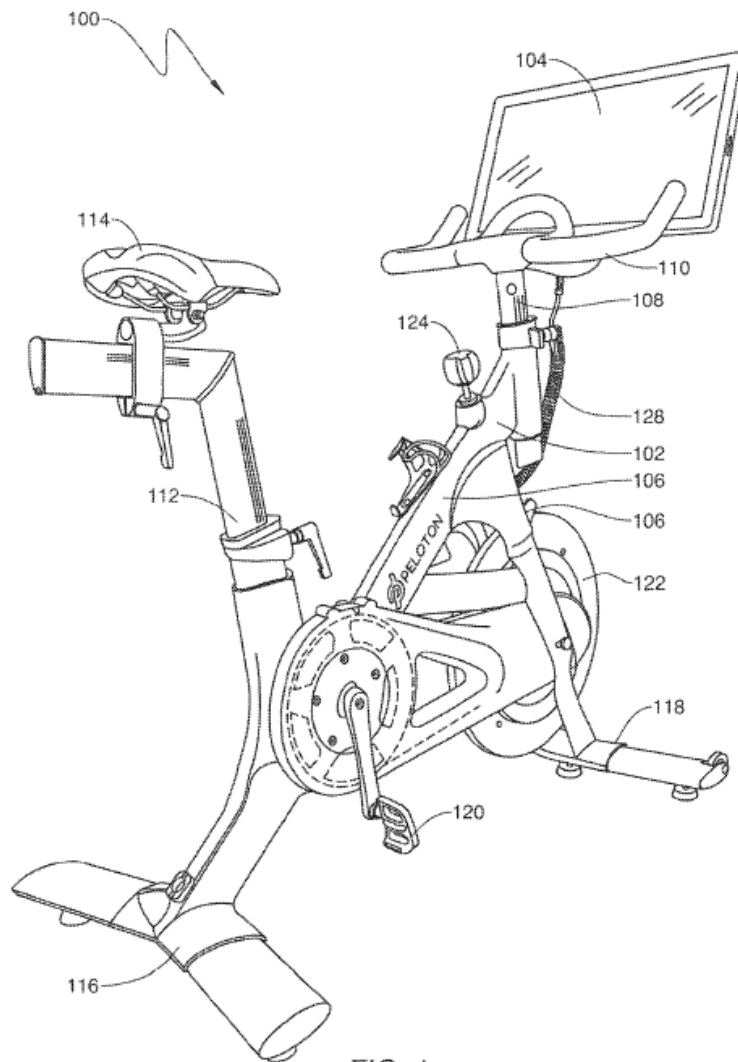


FIG. 1

Figure 1 shows local system 100 comprising stationary bike 102 with integrated or connected digital hardware including at least one display screen 104. *Id.* at 4:54–57; *see also id.* at 3:6–7 (describing Figure 1 as a rear perspective view of a stationary bike). Bike 102 may also be equipped with various sensors to measure data relating to user performance metrics, such as speed, resistance, power, cadence, heart rate, and hydration level. *Id.* at 9:59–63.

User interface 200 may be presented on display screen 104 to allow the user to manage the experience, including selecting information to be displayed and arranging how much information is displayed on the system. *Id.* at 6:59–63. User interface 200 may provide a home screen that provides basic information about the system and available options. *Id.* at 7:6–8.

Figure 5, reproduced below, shows the home screen.

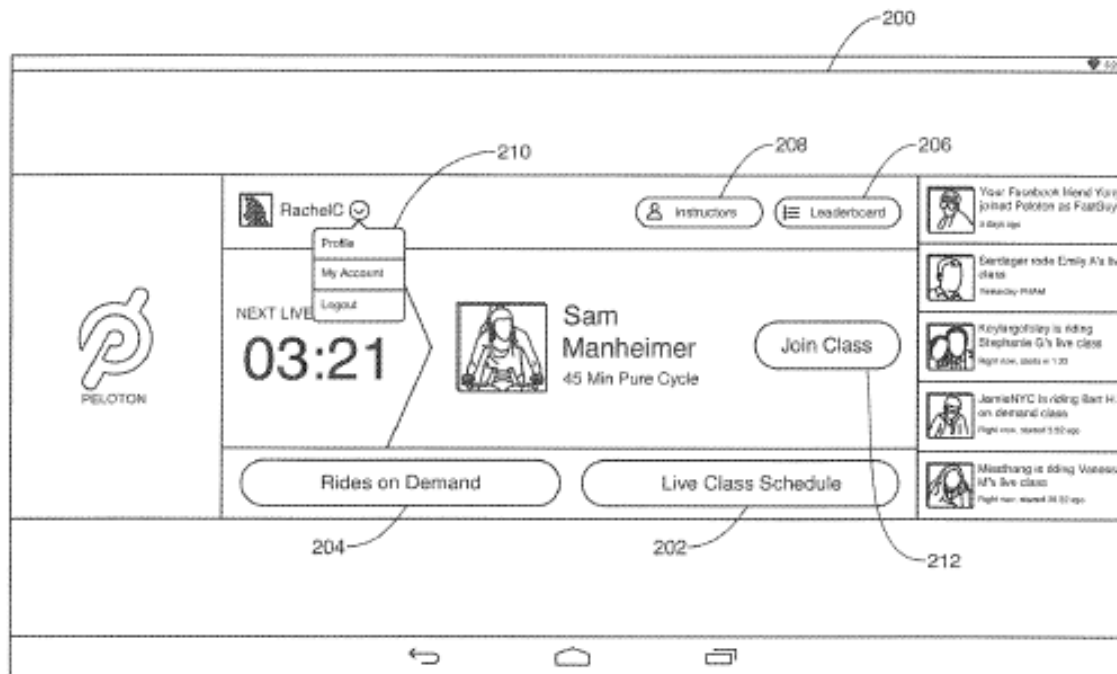


FIG. 5

Figure 5 is an illustration of a user interface home screen. *Id.* at 3:16–17. Via the home screen, a user can select among live classes 202 and archived classes 204. *Id.* at 7:23–26, 36–39, Fig. 5.

When a class is being played on display screen 104 through user interface 200, the primary video feed may be shown as the background video full-screen or in a sub-window on the screen. *Id.* at 7:46–50. Figure 8, reproduced below, shows the user interface screen displaying a cycling class.

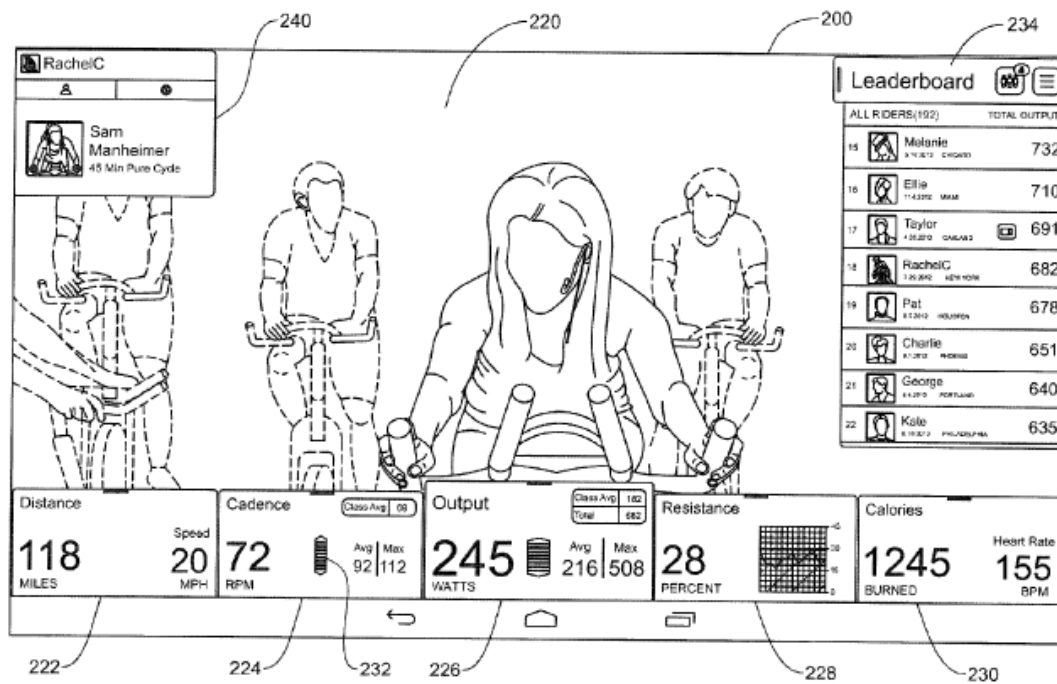


FIG. 8

Figure 8 is an illustration of a user interface screen displaying a live or on-demand cycling class underway. *Id.* at 3:25–27. Primary window 220 shows the live or archived class that the user selected. *Id.* at 7:66–67. Performance metric windows 222, 224, 226, 228, 230 show specific performance metrics for the user's current ride, past rides, or other performance information, including distance, pedal cadence, power output,

resistance, calories burned, and heart rate. *Id.* at 7:67–8:4, Fig. 8. Leaderboard 234 shows the user’s performance in comparison to others taking the same class. *Id.* at 8:27–29, Fig. 8. Secondary window 240 may display a range of information and content, such as the name of the user and the name of the current class. *Id.* at 9:43–45.

As explained in the ’590 patent, “the system can provide for simultaneous participation by multiple users in a recorded class, synchronized by the system and allowing access to all of the same communication and data sharing features that are available for a live class.” *Id.* at 13:15–19. As a result, “the riders simultaneously participating in the same archived class can compete against each other, as well as against past performances or ‘ghost’ riders for the same class.” *Id.* at 13:19–23. “[T]o provide accurate data regarding class performance for the leaderboard, including archived performance data, each class may have a specific ‘go’ or start signal that serves as the starting time point for the data comparison.” *Id.* at 13:42–46, Fig. 17. “Archived performance data may be calibrated to the same ‘go’ signal as live participant data, allowing for comparative data to be presented through a leaderboard or other display through the end of the class.” *Id.* at 13:46–50.

D. Challenged Claims

Petitioner challenges claims 1–20 of the ’590 patent. Pet. 1. Subsequent to the Petition, Patent Owner filed a Disclaimer in which Patent Owner disclaimed claims 1–13, 19, and 20. Ex. 2001, 1; *see also* Prelim. Resp. 6 (“Patent Owner Peloton has statutorily disclaimed claims 1–13, 19 and 20 of the ’590 Patent, pursuant to 37 C.F.R. § 1.321(a).”). Consequently, only claims 14–18 remain in this proceeding. *See* 37 C.F.R.

§ 42.107(e) (“No *inter partes* review will be instituted based on disclaimed claims.”); *Gunn v. Kopf*, 96 F.3d 1419, 1422 (Fed. Cir. 1996) (“A statutory disclaimer under 35 U.S.C. § 253 has the effect of canceling the claims from the patent and the patent is viewed as though the disclaimed claims had never existed in the patent.”).

Claims 14–18 depend from independent claim 1. Ex. 1001, 16:35–17:15. Independent claim 1 and claim 14, reproduced below, are illustrative of the claimed subject matter.

1. A system comprising:
 - a user interface operable to display live and archived cycling class content to a first user at a first location, the user interface comprising a display screen and a user input device operable to receive input from the first user;
 - a plurality of sensors operable to detect activity by the first user and generate first user performance parameters; and
 - a first local processing system communicably coupled to the user interface and the plurality of sensors, the first local processing system operable to perform operations comprising:
 - display, on the display screen, information identifying a plurality of cycling classes comprising available live and archived cycling classes accessible by the first local processing system through a digital communication network;
 - receive, from the user interface, an indication from the first user of a selected cycling class from one of the available live and archived cycling classes;
 - output to the display screen cycling class content associated with the selected cycling class, the cycling class content comprising digital video content and audio content;

track the first user performance parameters received from the plurality of sensors at a particular point in the selected cycling class;
display on the display screen at least one of the first user performance parameters; and display on the display screen at least one of a plurality of second user performance parameters received via the digital communication network from a second local processing system at a second location wherein at least one of first user performance parameters at the particular point in the selected cycling class and at least one of the second user performance parameters at the same point in the selected cycling class are presented for comparison on the display screen at the first location.

14. The system of claim 1, wherein the first local processing system is further operable to perform operations comprising requesting the digital video content, audio content and class participant content associated with the selected cycling class from a server through the digital communications network.

Id. at 15:35–16:7, 16:55–60.

E. Asserted Grounds and Evidence

For the claims remaining in the '590 patent in view of Patent Owner's Disclaimer, i.e., claims 14–18, Petitioner asserts the following grounds of unpatentability listed in the table below.¹

¹ Petitioner originally challenged claims 1–4 and 7–20 under 35 U.S.C. § 103 over Watterson and Hurwitz; claims 1–4, 7–12, and 14–19 under 35 U.S.C. § 103 over Hurwitz, Garcia, and Martens; and claims 5–6, 13, and 20 under 35 U.S.C. § 103 over Watterson, Hurwitz, and Loveland or over Hurwitz, Garcia, Martens, and Loveland. Pet. 5–6.

Claims Challenged	35 U.S.C. § ²	References
14–18	103	Watterson, ³ Hurwitz ⁴
14–18	103	Hurwitz, Garcia, ⁵ Martens ⁶

Pet. 5–6. In support of these asserted grounds of unpatentability, Petitioner submits Declarations of Kevin Jeffay, Ph.D. (Exs. 1003, 1056). Patent Owner deposed and cross-examined Dr. Jeffay and submits transcripts of Dr. Jeffay’s depositions (Exs. 2006, 2026).

Patent Owner relies on a Declaration of Henry H. Houh (Ex. 2002). Petitioner deposed and cross-examined Dr. Houh and submits a transcript of Dr. Houh’s deposition (Ex. 1063). Patent Owner also relies on a Declaration of Jim Rutberg (Ex. 2004). Petitioner deposed and cross-examined

² The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended certain sections of this statute, including § 103, and the effective date of the relevant amendment is March 16, 2013. The ’590 patent issued from an application filed on January 8, 2018, and claims priority to several applications, the earliest of which was filed on July 31, 2012. Ex. 1001, codes (22), (63), (60). The filing date of the ’590 patent is after the effective date of the AIA amendment to the statute, but the ’590 patent claims priority to an application filed before the effective date. The applicable version of the statute, however, does not affect this Decision. *See, e.g.*, Pet. 10 (“Each reference relied upon in this Petition is an issued U.S. patent or published U.S. patent application that predates the earliest possible effective filing date of the ’590 patent, and thus each qualifies as prior art regardless of whether pre-AIA or AIA statutory provisions apply.” (citing Ex. 1003 ¶ 24)).

³ Watterson et al., US 7,628,730 B1, issued Dec. 8, 2009 (“Watterson”) (Ex. 1007).

⁴ Hurwitz et al., US 7,874,957 B2, issued Jan. 25, 2011 (“Hurwitz”) (Ex. 1004).

⁵ Baccarella-Garcia, US 2011/0224999 A1, published Sept. 15, 2011 (“Garcia”) (Ex. 1005).

⁶ Martens, US 7,736,272 B2, issued June 15, 2010 (“Martens”) (Ex. 1006).

Mr. Rutberg and submits a transcript of Mr. Rutberg's deposition (Ex. 1057).

III. ANALYSIS OF ASSERTED GROUNDS OF UNPATENTABILITY

A. *Principles of Law*

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that the claimed subject matter as a whole would have been obvious at the pertinent time to a person having ordinary skill in the art to which the claimed subject matter pertains. The question of obviousness under 35 U.S.C. § 103 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) objective evidence of nonobviousness, i.e., secondary considerations.⁷ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

An obviousness analysis must include a reason, based upon rational underpinnings, why a person of ordinary skill would have been motivated to modify the prior art to achieve the claimed invention. *In re Magnum Oil Tools Int'l, Ltd.*, 829 F.3d 1364, 1380 (Fed. Cir. 2016) (“To satisfy its burden of proving obviousness, a petitioner . . . must . . . articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” (citing *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007))). The requirement of a reason to combine is a safeguard against hindsight bias, which is characterized by the “temptation to read into the

⁷ In this proceeding, neither party has presented evidence or argument directed to secondary considerations.

prior art the teachings of the invention in issue.” *KSR*, 550 U.S. at 421 (quoting *Graham*, 383 U.S. at 36).

B. Level of Ordinary Skill in the Art

The level of ordinary skill in the art is “a prism or lens” through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). The POSITA is “a hypothetical person who is presumed to know the relevant prior art.” *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (citing *Custom Accessories, Inc. v. Jeffrey–Allen Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). In determining the level of ordinary skill in the art, we may consider certain factors, including the “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.” *Id.* (quoting *Custom Accessories*, 807 F.2d at 962). “In a given case, every factor may not be present, and one or more factors may predominate.” *Id.* (citing *Custom Accessories*, 807 F.2d at 962–63).

Petitioner contends a person of ordinary skill in the art (“POSITA”) would have “a Bachelor’s degree in electrical engineering, computer science, computer engineering, or comparable academic experience and at least two years of practical experience in the design of network-based applications and/or equipment interface systems for providing multi-media content such as on-line exercise classes.” Pet. 8 (citing Ex. 1003 ¶ 38). Patent Owner argues “[t]he correct level of skill would . . . require at least a Bachelor’s degree and/or least two years’ experience in the exercise field in addition to the technical requirements listed by Dr. Jeffay.” PO Resp. 6 n.2 (citing Ex. 2002 ¶¶ 40–52; Ex. 2004 ¶¶ 32–44).

Patent Owner criticizes Petitioner's proposed POSITA for lacking any training or professional experience in the exercise field, which, according to Patent Owner, is the relevant art. *Id.* at 3–7; Sur-reply 1–2, 4–5. Patent Owner asserts “[w]ithout an understanding of the equipment and practices in the exercise field that comes with relevant education and/or professional experience, [Petitioner's POSITA] had no creditable basis to conclude what motivates people to exercise.” PO Resp. 6–7; *see also* Sur-reply 1–2 (arguing Petitioner's POSITA has no basis for determining whether or how to enhance the benefits of group exercise and promote a healthy sense of competition). Patent Owner additionally argues Dr. Jeffay lacks professional experience or education in the exercise field such that his testimony on matters relating to exercise is due no weight. PO Resp. 7 (citing Ex. 1003, 125–153); Sur-reply 2–4. In reply, Petitioner maintains a POSITA does not need trainer qualifications, i.e., an exercise field degree and/or two years' exercise field experience. Reply 1–7. Petitioner asserts “the art relates to Internet-connected computerized exercise equipment design, and an artisan would not need trainer qualifications to understand that competition and working out in a group motivates people to exercise.” *Id.* at 2. According to Petitioner, “[i]t was well-known that group settings and competition motivated people to exercise,” and “[t]he problems and solutions are focused on how to realize these known motivations in various internet-connected computer systems.” *Id.* at 6 (citing Ex. 1056 ¶ 2).

The parties' arguments raise not only the issue of the level of ordinary skill in the art, but also Dr. Jeffay's credibility as a POSITA. Beginning

with the latter, our Trial Practice Guide⁸ explains that there is no requirement of a perfect match between a declarant's experience and the relevant field. TPG 34 (citing *SEB S.A. v. Montgomery Ward & Co.*, 594 F.3d 1360, 1373 (Fed. Cir. 2010)). We generally permit testimony where a declarant's scientific, technical, or other specialized knowledge will help the Board understand the evidence or to determine a fact in issue. *Id.* (citing Fed. R. Evid. 702(a)). Given his doctorate degree in computer science and 25 years' of experience in the design and implementation of network-based applications, including network-based applications for providing multi-media content for real-time synchronous interaction (Ex. 1003 ¶ 41), we find Dr. Jeffay's testimony helpful in deciding factual issues in this proceeding. Moreover, when assigning weight to a declarant's testimony, we consider the underlying facts or data upon which the testimony is based. TPG 40–41. In our analysis of the asserted grounds of unpatentability, we weigh Dr. Jeffay's testimony accordingly.

Turning to the level of ordinary skill in the art, the parties' proposed levels of ordinary skill in the art differ in that Patent Owner's proposed level of ordinary skill in the art adds the requirement for a bachelor's degree and/or least two years' experience in the exercise field. Patent Owner's basis for the additional requirement is that an understanding of the equipment and practices in the exercise field is necessary to know what motivates people to exercise. We, however, agree with Petitioner that the

⁸ USPTO, *Patent Trial and Appeal Board Consolidated Trial Practice Guide November 2019*, <https://www.uspto.gov/TrialPracticeGuideConsolidated> ("TPG"); *see also* Office Patent Trial Practice Guide, November 2019 Edition, 84 Fed. Reg. 64,280 (Nov. 21, 2019) (notifying the public of the availability of the Consolidated Trial Practice Guide).

problems and solutions in the art are not directed to figuring out what motivates people to exercise, but rather to developing and implementing network-connected computer systems to foster group activity and competition, which are known motivations for exercise.

According to the '590 patent:

Humans are competitive by nature, striving to improve their performance both as compared to their own prior efforts and as compared to others. Humans are also drawn to games and other diversions, such that even tasks that a person may find difficult or annoying can become appealing if different gaming elements are introduced.

Ex. 1001, 1:28–33. The '590 patent describes a problem as “[e]xisting home and gym-based exercise systems and methods frequently lack key features that allow participants to compete with each other and that gamify exercise activities.” *Id.* at 1:33–36. The '590 patent further describes that a solution is “a stationary bike that incorporates multimedia inputs and outputs for live streaming or archived instructional content, socially-networked audio and video chat, networked performance metrics and competition capabilities, along with a range of gamification features.” *Id.* at 1:57–62.

Like the '590 patent, the asserted references disclose using network-connected computer systems to solve the problem of exercise equipment not effectively providing competition. Watterson, for instance, discloses that “group settings promote a healthy sense of competition among group members,” and that “[i]t would . . . be a definite advancement in the art of home exercise equipment to provide the desirable benefits of group exercise in a home setting.” Ex. 1007, 1:65–66, 2:17–20. To solve the problem of home exercise equipment lacking the benefits of group exercise, Watterson discloses providing an exercise device “that is capable of

enabling a user to communicate with a distantly located trainer” and “that communicates with a communication system that enables real-time communication with a trainer or alternatively access to one or more stored exercise programs.” *Id.* at 2:55–60. Similarly, Hurwitz discloses:

[E]ven if a person is merely exercising for general health or fun, a competitive environment can add a much needed edge and can motivate people to higher levels of performance. Competition, however, requires at least one additional person, with the same or similar type equipment (e.g. to race bicycles, all competitors need to have access to bicycles). This can present another barricade to those wishing to competitively race or exercise, as now an entire additional set of equipment is needed.

Ex. 1004, 1:30–38. Hurwitz further discloses a solution is an exercise device, such as a bicycle, equipped with measurement device having a wireless connection to a computer that permits processing of data relating to a user’s progress and displaying the data on an electronic display to enable users to engage in virtual races and other group activities. *Id.* at 2:22–28.

After considering the factors for determining the level of ordinary skill in the art, particularly the type of problems encountered in the art and prior art solutions to those problems, we find the factors support Petitioner’s level of ordinary skill in the art and do not warrant an additional requirement for a bachelor’s degree and/or least two years’ experience in the exercise field. Moreover, given the background and nature of the teachings in the prior art, we are not persuaded that a person of ordinary skill in the art would need a specific bachelor’s degree or significant time working in the exercise field to understand the nature and importance of connectivity and

competition in group settings. We, therefore, adopt Petitioner’s level of ordinary skill in the art.

C. *Claim Construction*

We interpret a claim “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2019). Under this standard, we construe the claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.* Furthermore, we expressly construe the claims to the extent necessary to determine whether Petitioner has proven that the challenged claims are unpatentable. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (“[W]e need only construe terms ‘that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999))).

Patent Owner argues the claims should be construed to require a system operable to display both live and archived classes. PO Resp. 7–8. Patent Owner also argues the recited phrase “live and archived exercise classes” should be construed to require a human instructor. *Id.* at 8–12. Additionally, the parties propose express constructions for the claim term “leaderboard.” *Id.* at 12–14; Reply 7–8; Sur-reply 6–8. Specifically, Petitioner construes “leaderboard” as “a display of those leading in a contest” (Reply 7), whereas Patent Owner construes “leaderboard” as “a numerically ordered list ranking users by their performance” (PO Resp. 12) and further argues “the district court effectively agreed with [Patent Owner] (construing leaderboard as ‘a scoreboard containing a list in ranked order of

some or all of the users’)” (Sur-reply 6). Nonetheless, for the reasons set forth in our analysis of the asserted grounds of unpatentability, we determine that no claim term requires an express construction for us to ascertain whether Petitioner has shown the challenged claims to be unpatentable because Petitioner has met its burden even if we apply Patent Owner’s proposed constructions.

D. Obviousness Based on Watterson and Hurwitz

In its Petition, Petitioner challenges claims 1–4 and 7–20 under 35 U.S.C. § 103, contending the claimed subject matter would have been obvious over Watterson and Hurwitz. Pet. 15–42. In view of Patent Owner’s Disclaimer (Ex. 2001), however, only claims 14–18 remain. The parties dispute whether these remaining claims are unpatentable over Watterson and Hurwitz. PO Resp. 14–42; Reply 9–19; Sur-reply 9–22.

We begin our analysis of this asserted ground of unpatentability with an overview of each of Watterson and Hurwitz. We next discuss the parties’ arguments for independent claim 1, from which claims 14–18 depend. We then turn to the parties’ arguments for claims 14–18.

1. Watterson

Watterson “relates to exercise equipment and, more specifically, to systems and methods for providing improved exercise devices in combination with other users and/or a live or stored trainer via a communications network.” Ex. 1007, 1:43–46. Exercises devices may be “any type of device that takes the form of an exercise machine, including, but not limited to, treadmills, exercise cycles, . . . and elliptical or striding exercise devices.” *Id.* at 6:24–29. Figure 1, reproduced below, shows exercise devices connected via a communications network.

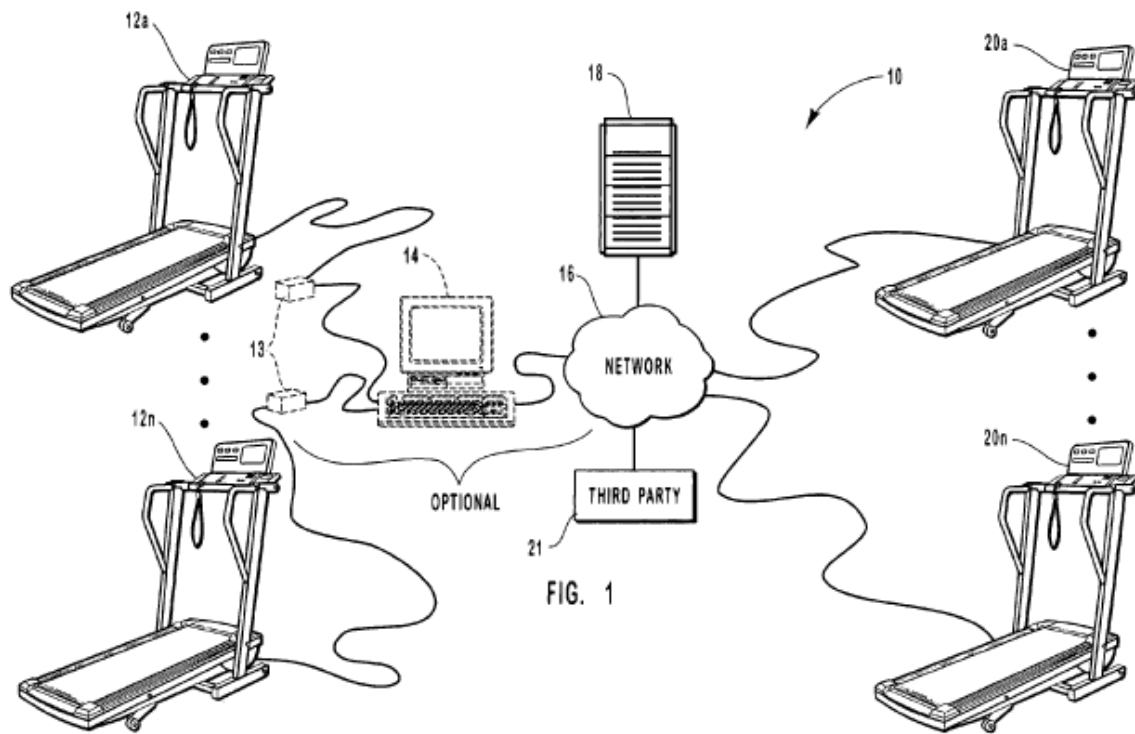


Figure 1 is an exercise system. *Id.* at 5:7–8; *see also* Figs. 10–11 (depicting the exercise system of Figure 1 as functional block diagrams). Exercise system 10 comprises one or more exercise devices, such as treadmill 12a–12n, in communication with one or more trainers at treadmill 20a–20n via translator device 13 and computer 14 that communicate with network 16. *Id.* at 6:30–42. Network 16 facilitates communication of treadmill 12 with a live trainer on treadmill 20 and/or communication system 18, which is, for example, a website. *Id.* at 6:45–47. Communication system 18 assists communication between a user on treadmill 12 and either a live trainer on treadmill 20 or some third party 21. *Id.* at 6:47–50. Optionally, communication system 18 acts as a stored trainer or connects to a stored trainer. *Id.* at 6:50–52.

System 10 enables exercise programming to be transmitted from a trainer at treadmill 20, or alternatively from communication system 18, to a

user at treadmill 12. *Id.* at 7:19–22. The programming may include motivational content, which may be an audio/video presentation of a personal trainer and others engaged in a series of exercises or a live-on-live, real-time exercise program presented by a trainer. *Id.* at 7:25–26, 37–46.

Treadmill 12 includes control panel 22 (*id.* at 8:24–26), which is shown in Figure 6, reproduced below.

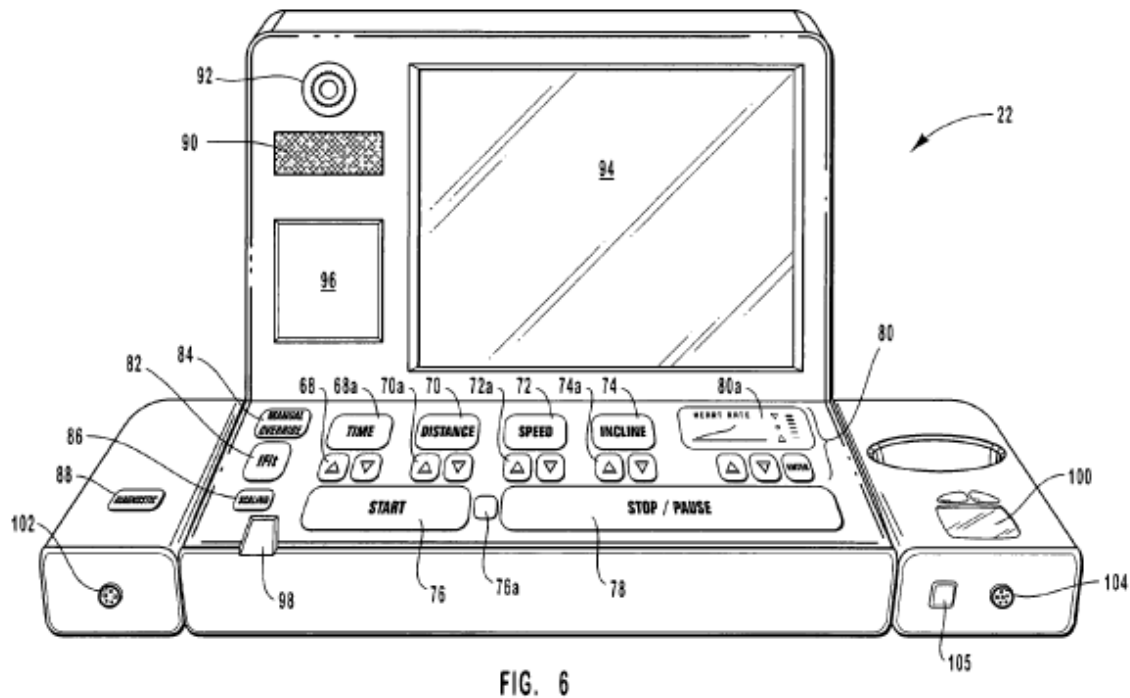


Figure 6 is a perspective illustration of a control panel. *Id.* at 5:23–24. As shown in Figure 6, control panel 22 includes iFit.com button 82, which acts as both a selector and an indicator of connectivity of treadmill 12 to communication system 18 and treadmill 20. *Id.* at 9:50–54. Control panel 22 also includes input devices, such as integrally-formed mouse 100 and a touch-sensitive video display to allow a user to operate treadmill 12, access communication system 18, and obtain information via network 16. *Id.* at 12:33–49. Control panel 22 further includes one or more output

devices, such as video output device 94 that presents the user of treadmill 12 with information and data transmitted from communication system 18, including data that is a live transmission from treadmill 20 or stored programming accessible via communication system 18. *Id.* at 12:56–58, 12:66–13:4. Additionally, control panel 22 includes one or more operating parameter displays that provide a visual display of exercise device operating parameters, such as speed, incline, distance traveled, elevation climbed, and wheel resistance. *Id.* at 13:50–56. The operating parameter display may be incorporated within video output device 94. *Id.* at 13:58–60.

Treadmill 12 may include one or more sensors, such as belt speed sensor 230 and incline sensor 232. *Id.* at 24:56–57. Each sensor 230, 232 gathers a particular operating parameter of treadmill 12 such that control panel 22 may present outputs indicative of the present operating state of treadmill 12 at any given point in time. *Id.* at 24:58–62. Treadmill 12 may include other sensors that gather various other operating parameters, such as maximum pulse and heart rate, average pulse and heart rate, target heart rate, length of workout session, and the like. *Id.* at 24:62–66. Additionally, sensors 230, 232, optionally in combination with one or more of the other sensors, may deliver a feedback signal to processor 214 that informs communication system 18 and/or the trainer. *Id.* at 24:66–27:4.

A user at treadmill 12 connects to communication system 18 by pressing iFit button 82 on control panel 22. *Id.* at 10:23–25; 25:23–28. Connection to communication system 18 enables a user to receive exercise programming from communication system 18 and to access a stored trainer or a personal trainer. *Id.* at 10:25–37; 25:31–38. Moreover, connection to network 16 and/or communication system 18 enables one or more users to

interact with each other in a live or time-time adjusted competition. *Id.* at 10:53–65. For example, the iFit.com website includes competition module 314 that enables one or more users to engage in competitive programming with other users, particularly races. *Id.* at 39:35–52, Figs. 12, 17A–D. In a personalized race, two or more users schedule a live-on-live session where they may race against each other while viewing graphical representations of the distance, time, and speed of the other competitors. *Id.* at 40:56–61. Alternatively, two or more users may schedule a race where the start time is adjusted based upon the particular location of the user. *Id.* at 40:61–63, Fig. 17D. In a time-adjusted race, synchronization prepares the communication links between each user and generates the displays and data flow therebetween. *Id.* at 41:11–15. Such a display may include a racing track that shows the relative position of each user compared to the other users. *Id.* at 41:15–18.

2. Hurwitz

Hurwitz “relates to methods and apparatus for measuring exercise performance on equipment that includes a rotating surface.” Ex. 1004, 1:14–17. A sensor device senses at least the frictional force of a brake pad onto a wheel, and may also sense the frequency of rotation of the wheel, leaning, and heart rate. *Id.* at 2:64–3:3. The sensed parameters may be coupled to a visual feedback environment that informs the exerciser of the exerciser’s current performance, and possible performance parameters include relative location on a virtual course, time, power, cadence, heart rate, distance, velocity, and work. *Id.* at 3:3–8.

In one example, a group of people can be tracked, and they may be in the same room or in locations spread all over the world and connected over

the Internet. *Id.* at 3:9–10, 17–19. Figure 2, reproduced below, shows a group environment.

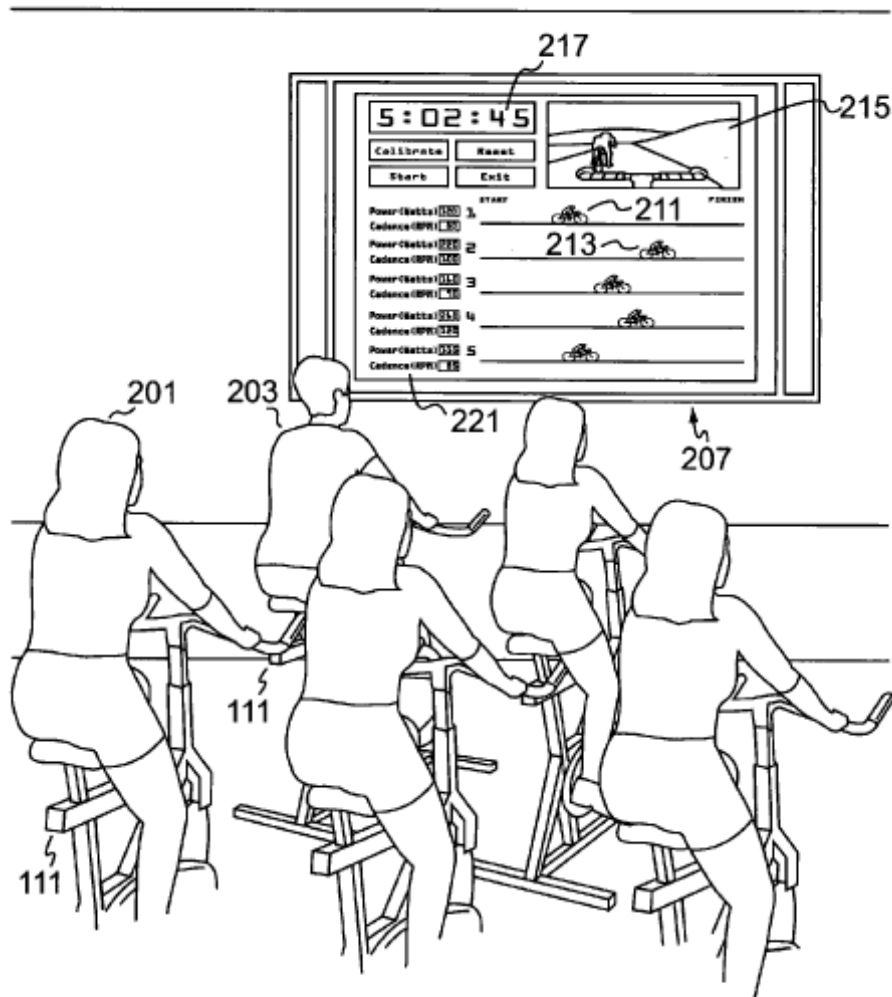


FIG. 2

Figure 2 shows exercise equipment used in a group environment. *Id.* at 3:30–31. A plurality of participants 201, 203 exercise together on exercise bicycles 111 provided with sensor devices. *Id.* at 4:4–6. Based on feedback from the sensor devices, display 207 shows the participants a variety of information about the exercise session, including each participant's relative position. *Id.* at 4:7–17. Some or all of this information

may be shown on an individual basis, such as on a private display for each participant. *Id.* at 4:18–23.

For an exercise session or competition, a processing device first creates a display. *Id.* at 7:52–53. The processing device then pings each integrated sensor device of a bicycle to establish a connection with the sensor. *Id.* at 7:53–56. Once the processing devices establishes a connection with each sensor, a controlling user starts the exercise. *Id.* at 7:60. As a participant exercises, the processing device collects data from the bicycle, processes the data, and displays the processed data. *Id.* at 7:60–62. At any time, the controlling user may exit or reset the exercise session. *Id.* at 7:62–63.

3. *Independent Claim 1*

For independent claim 1, Petitioner proposes a combination of teachings from Watterson and Hurwitz that essentially modifies Watterson’s disclosure in three ways. Pet. 16–21. Petitioner also presents reasons why a POSITA would have made each modification associated with its proposed combination. *Id.*

First, Petitioner asserts it would have been obvious to use Hurwitz’s exercise cycle, which includes sensors for measuring various cycling parameters, with Watterson’s exercise system. *Id.* at 16–18. In regard to this proposed modification, Petitioner argues “Watterson’s exercise devices include sensors to capture and display a user’s performance data.” *Id.* at 16 (citing Ex. 1007, 7:63–8:4, 13:47–60, 24:56–25:7, Fig. 9). Petitioner also argues Watterson’s system may be used with various types of exercise devices, including exercise cycles. *Id.* at 16–17 (citing Ex. 1007, 6:24–29). Petitioner acknowledges “Watterson does not disclose some basic details for

implementing its system with exercise cycles, including how to employ sensors for measuring cycling-specific parameters (e.g., power output and cadence)” (*id.*), and asserts “Hurwitz provides cycling-specific implementation details, including how to employ sensors for power output and cadence in combination with an exercise cycle and use data from these sensors to track and share users’ performance data with other users via the Internet” (*id.* (citing Ex. 1004, 2:6–37, 2:64–3:19, 4:3–17, Figs. 3–12)). Per Petitioner, “[a] POSITA would be motivated to employ the Hurwitz exercise cycle when implementing Watterson’s system for exercise cycles because Hurwitz’s cycles and sensors provide a simple way to measure and share data reflecting a cyclist’s performance in real time.” *Id.* (citing Ex. 1003 ¶ 71).

Second, Petitioner asserts it would have been obvious to use Hurwitz’s leaderboard display with Watterson’s competition module. *Id.* at 18–20. Regarding this proposed modification, Petitioner argues Watterson’s competition module 314 provides a graphical display of comparative performance parameters for real-time or archived group racing events. *Id.* at 18 (citing Ex. 1007, 40:56–41:20). Petitioner also argues that “Watterson merely says that its comparative display would be provided in a graphical representation, without providing specific implementation details for the look and feel of the display” (*id.*), and that Hurwitz’s Figure 15 shows a leaderboard display (*id.* at 18–19). According to Petitioner, “a POSITA would be motivated and find it obvious to use Hurwitz’s leaderboard display (as shown, e.g., in FIG. 15) when implementing Watterson’s Competition Module (314), so that Watterson’s comparative

display features are provided in a way that educates, motivates, entertains and encourages users during exercise.” *Id.* at 19 (citing Ex. 1003 ¶ 74).

Third, Petitioner asserts it would have been obvious to use a comparative display with Watterson’s live and archived classes. *Id.* at 20–21. For this proposed modification, Petitioner argues Watterson discloses the comparative display of performance parameters for live and archived racing events, but not for live and archived classes. *Id.* at 20 (citing Ex. 1003 ¶ 76). Petitioner also argues “a POSITA would have been motivated to provide the same comparative display capability for Watterson’s ‘group [cycling] settings’ – races and classes – because doing so further “promote[s] a healthy sense of competition among group members.” *Id.* (alterations in original) (citing Ex. 1003 ¶ 78). Moreover, Petitioner argues Hurwitz teaches a leaderboard display showing relative performance parameters for various class participants. *Id.* at 21 (citing Ex. 1004, 1:52–62, 8:16–60, Figs. 2, 15). Petitioner further argues “a POSITA would be motivated and find it obvious in view of Hurwitz to use a comparative display to foster competition for live and archived classes.” *Id.* (citing Ex. 1003 ¶ 78).

In its proposed combination of the teachings of Watterson and Hurwitz, Petitioner identifies each limitation of independent claim 1. *Id.* at 22–32. For the preamble and the “user interface” limitation, Petitioner asserts Watterson discloses these limitations. *Id.* at 22–25. Petitioner argues Watterson’s system 10, 250 includes user module 252 having user interface module 262 that incorporates control panel 22 equipped with user input devices and a display, such as video output device 94. *Id.* at 22–23 (citing Ex. 1007, 12:56–13:46, 15:24–37, 22:37–43, 27:27–33, 28:28–43,

30:39–31:2, Figs. 2, 6). Petitioner also argues Watterson’s control panel 22 is connected to an exercise device, sensors, processing system, and audiovisual outputs, and is networked to other users via the Internet. *Id.* at 23–24 (citing Ex. 22:37–43, 24:41–46, Figs. 9–11). Petitioner further argues Watterson discloses that a user may select live or archived exercises classes, including cycling classes, and that, in response to the user’s selection, control panel 22 provides the selected classes to the user’s display. *Id.* at 24 (citing Ex. 1007, 1:42–2:44, 4:15–26, 50–53, 6:13:42, 45–52, 7:8–18, 37–46, 10:38–52, 12:56–13:27, 27:32–33, 28: 31–43, 29:8–14, 30:1–9, 51–53, 47:63–66, Fig. 6). Petitioner additionally argues users access Watterson’s classes over the Internet. *Id.* at 24–25 (citing Ex. 1007, 3:6–43, 22:37–50, 28:28–29:8, 45:64–46:28, Figs. 9–10).

For the “plurality of sensors” limitation, Petitioner relies on Watterson and Hurwitz. *Id.* at 25. Petitioner argues Hurwitz teaches sensors for measuring power output/force, cadence, and heart rate. *Id.* (citing Ex. 1004, 2:64–3:8, 4:52–5:9, 6:32–7:29, Figs. 4–10). Referring to its reasons for combining the teachings of Watterson and Hurwitz, Petitioner asserts it would have been obvious to use Watterson’s exercise system with Hurwitz’s exercise cycle equipped with cycling-specific sensors to result in this claim limitation. *Id.*

Petitioner relies on Watterson to disclose the “first local processing system” limitation. *Id.* at 25–26. According to Petitioner, Watterson’s control panel 22 is communicably coupled to a system of processors, the user interface, and device sensors. *Id.* (citing Ex. 1007, 7:21–29, Figs. 9–11).

Petitioner also relies on Watterson for disclosing the first “display” limitation and the “receive” limitation. *Id.* at 26–27. Petitioner argues Watterson’s system 10, 250 includes communication system 18 having communications interface 190 and associated computer components. *Id.* at 26 (citing Ex. 1007, 6:30–52, 18:53–22:36, 27:27–33, Figs. 1, 8). Per Petitioner, a user selects a class from the live and archived classes displayed on Watterson’s system, and, in response to receiving the selection, the system delivers the class to the user via a network using a communication module, i.e., a server. *Id.* at 27 (citing Ex. 1003 ¶ 101, Ex. 1007, 25:21–38, 29:8–14, 30:18–22, 33:10–15, 38:20–50, Figs. 9–11).

Petitioner argues Watterson discloses the “output” limitation. *Id.* at 27–28. Specifically, Petitioner argues “Watterson discloses the selected class would be delivered to the requesting user via the communications interface (210) of the control panel (22), including delivering audio to audio output device 96 and digital video to video output device 94.” *Id.* at 28 (citing Ex. 1003 ¶ 105; Ex. 1007, 25:33–38, 26:56–61, Fig. 9).

For the “track” limitation and the second “display” limitation, Petitioner relies on Watterson and Hurwitz. *Id.* at 28–29. Petitioner argues Watterson’s control panel 22 uses sensor data to track and display various performance parameters. *Id.* (citing Ex. 1007, 13:47–60, 24:56–66, 45:59–63, Fig. 6). Petitioner also argues Hurwitz’s sensors track and display cycling parameters, including power output and cadence, at particular points in its cycling classes. *Id.* at 29 (citing Ex. 1003 ¶ 110; Ex. 1004, 3:5–8, 4:11–23, Figs. 2, 15). Referencing its reasons for combining the teachings of Watterson and Hurwitz, Petitioner asserts a POSITA would have used Watterson’s exercise system with Hurwitz’s exercise cycle equipped with

sensors, and would have done so by connecting Hurwitz's sensors with Watterson's control panel 22, which is designed to interface with sensor data for display and transmission to user. *Id.*

For the third “display” limitation, Petitioner relies on Watterson and Hurwitz. *Id.* at 29–32. Petitioner argues Watterson discloses using a network to display the relative performance parameters of remotely-located users in a group exercise session, whether all of the group members are participating live or some previously participated and had their performance stored. *Id.* at 30 (citing Ex. 1003 ¶ 117; Ex. 1007, 40:55–41:20, Figs. 17A–D). According to Petitioner, “Watterson’s time-adjusted races allow users to race at different times, with an earlier-racing participant’s ‘real-time representation of the race’ being stored and rebroadcast to later-racing participants” (*id.* at 31 (citing Ex. 1007, 10:38–65, 41:21–42:6)), and “a POSITA would reasonably expect a later racer to experience the race as though all participants are competing in the race live, with their respective performance data being displayed in real-time and compared at the same point in the race” (*id.* (citing Ex. 1003 ¶ 118)). Petitioner also argues Hurwitz teaches a leaderboard display that shows relative performance parameters for various class participants. *Id.* at 31–32 (Ex. 1004, 1:52–62, 8:19–22, Figs. 2, 15). Referring to its reasons for combining the teachings of Watterson and Hurwitz, Petitioner asserts that it would have been obvious to use Watterson’s comparative display for Watterson’s races and classes because “doing so further ‘promote[s] a healthy sense of competition among group members. *Id.* (alteration in original) (citing Ex. 1003 ¶ 119); *see also id.* (“It was also obvious in view of Hurwitz to offer comparative display

features for [Watterson's] live and archived races and classes.” (citing Ex. 1003 ¶ 120)).

Patent Owner does not dispute Petitioner's identification of the limitations of independent claim 1 in Petitioner's proposed combination of Watterson and Hurwitz. Rather, Patent Owner maintains a POSITA would not have made the proposed combination. PO Resp. 20–36; Sur-reply 11–21.

Patent Owner argues Petitioner's proposed combination of the teachings of Watterson and Hurwitz would be inoperable such that Watterson and Hurwitz teach away from Petitioner's proposed combination. PO Resp. 20–29; Sur-reply 11–15. According to Patent Owner, Petitioner's proposed combination would not result in displaying comparative data during live and archived exercise classes, as the third “display” limitation of independent claim 1 requires, because the combination lacks the necessary data, namely archived user performance parameters. PO Resp. 21. Patent Owner contends that Petitioner relies on Watterson's live and stored exercise classes, which are not associated with any archived user performance parameters (*id.* (citing Ex. 2002 ¶¶ 88–93); *id.* at 26), and that Petitioner has not explained with the requisite particularity how adding a comparative display to live and archived exercise classes, as Petitioner proposes, would obtain archived user performance parameters (*id.* at 23–25). Patent Owner also contends that Watterson's competition module requires knowing all of the participants who will compete in a live or time-adjusted race before the race begins, and that Watterson does not disclose saving the racers' performance parameters after all of the racers have completed the race. *Id.*

at 26–29 (citing Ex. 1007, 40:55–41:48, Figs. 17A, 17D; Ex. 2002 ¶¶ 76–81, 99, 100–102, 107); Sur-reply 12.

Petitioner replies that its proposed combination would be operable. Reply 9–12. Petitioner asserts Watterson discloses archived races in which an earlier racer’s statistical information is stored and rebroadcast so that later racers experience the race as though all racers are competing live. *Id.* at 11 (citing Pet. 31; Ex. 1007, 10:38–65). Petitioner also asserts “providing a comparative display for an archived competition (race or class) includes collecting/storing prior participants’ data.” *Id.*; *see also id.* at 12 (“A POSITA would understand that implementing the comparative display feature in Watterson’s classes would require storing prior participants’ class data and comparing it to later participants’ class data.” (citing Pet. 21; Ex. 1056 ¶¶ 7–9)). Per Petitioner, “a POSITA would have expected to succeed in implementing comparative display features in Watterson’s classes, given Watterson already offered functionality for doing so during races.” *Id.* at 11 (citing Pet. 21).

Patent Owner responds that Petitioner’s arguments in its Reply amount to an entirely new theory of obviousness. Sur-reply 12. According to Patent Owner, “[Petitioner] now proposes further modifying Watterson’s competition module to make whatever modifications are needed.” *Id.* Patent Owner further responds that Petitioner’s new theory of obviousness fails on the merits. *Id.* at 13–15.

At the outset, we disagree with Patent Owner that Petitioner is introducing a new theory of obviousness premised on different modifications to Watterson’s competition module. Rather, Petitioner points to Watterson’s competition module, particularly the time-adjusted races, to explain why a

POSITA would have understood Petitioner’s proposed combination of the teachings Watterson and Hurwitz to be operable to display comparative data during live and archived exercise classes. These arguments are consistent with and extend from the arguments in the Petition and do not amount to an entirely new theory of obviousness. *See* Pet. 20–21.

Turning to the operability of Petitioner’s proposed combination of the teachings of Watterson and Hurwitz, Patent Owner’s inoperability argument is premised on Dr. Houh’s opinion that Watterson lacks the data necessary for a comparative display, namely archived user performance parameters. In particular, Dr. Houh testifies:

[Watterson’s] time-delayed or adjusted races allow the racers to compete at the same local time despite being in different time zones. As a result, there may be several waves of racers: the first one is the “live” race, and the following ones leave when at the race time for their local time. . . .

Watterson’s first wave of competitors are racing only against themselves (optionally with a computer-generated pace setter). *The system stores those racers’ statistics and a “real-time representation of the race,” and then rebroadcasts the race for the next time zone with the second wave of competitors.* Watterson discloses repeating the process around the world, rebroadcasting as much as once for each of the 24 time zones. Watterson does not disclose saving or sharing the stored race information of any of the racers with other users after that.

Ex. 2002 ¶¶ 80–81 (emphasis added) (citing Ex. 1007, 41:20–65). Although Dr. Houh testifies that Watterson does not disclose saving or sharing the stored race information beyond the last wave of racers, Dr. Houh acknowledges that Watterson discloses saving and rebroadcasting racers’ statistics. Put simply, at least during a time-adjusted race, Dr. Houh recognizes Watterson archives user performance parameters.

Dr. Jeffay opines that archiving user performance parameters during live and stored exercise classes is well within the level of ordinary skill in the art. Specifically, Dr. Jeffay testifies:

Exercising little more than common sense, a POSITA would understand that implementing the comparative display functionality in Watterson's classes (instead of races) would require storing and maintaining the data concerning the prior class participants' performance to facilitate the ability of later class participants to see a display that compares their performance with that of prior participants. Implementing this feature in Watterson's classes would have been well within the level of skill of a POSITA.

Ex. 1056 ¶ 8. In view of Dr. Jeffay's experience with providing multi-media content for real-time synchronous interaction (Ex. 1003 ¶ 41), we find this testimony credible.

In view of the foregoing, Petitioner has persuaded us that Watterson discloses archived user performance parameters. Petitioner also has persuaded us that archiving user performance parameters during live and stored exercise classes is well within the level of ordinary skill in the art. Because a POSITA would understand how to archive performance parameters, we disagree with Patent Owner that a POSITA would have considered Petitioner's proposed combination inoperable for displaying comparative data during live and archived exercise classes such that Watterson and Hurwitz teach away from Petitioner's proposed combination. Rather, Petitioner has demonstrated, with particularity, that a POSITA would have reasonably expected Petitioner's proposed combination of the teachings Watterson and Hurwitz to be operable to display comparative data during live and archived exercise classes.

Patent Owner also argues a POSITA would not have added Hurwitz's comparative display to Watterson's live and archived exercises, as Petitioner proposes. PO Resp. 29–36; Sur-reply 15–21. Patent Owner contends Watterson's disclosure of promoting a healthy sense of competition, on which Petitioner relies as a reason for its proposed combination of the teachings of Watterson and Hurwitz, views group exercise as led by an instructor without a comparative display. PO Resp. 30–32; Sur-reply 15. Patent Owner further contends that Petitioner has not credibly explained why a POSITA would have sought to add more competition to Watterson, which names inventors who have hundreds of patents in the exercise field. PO Resp. 30–33; Sur-reply 16–17. Patent Owner also contends that Dr. Jeffay has no basis to opine on what a POSITA would have done to motivate people to exercise because Dr. Jeffay has no education or professional experience in the exercise field. PO Resp. 33–34; Sur-reply 15–16. Additionally, Patent Owner contends that Petitioner has not explained how or why a POSITA would have modified Hurwitz's comparative display to provide archived user performance parameters, and that Hurwitz is silent regarding the benefits of competing in archived exercise classes. PO Resp. 34–35.

Petitioner replies that a POSITA would have had a reason to add Hurwitz's comparative display to Watterson's live and archived exercises. Reply 12–15. Petitioner asserts that competition was well known to motivate people to exercise (*id.* at 12 (citing Pet. 11)), and that a POSITA would have added Hurwitz's comparative display to Watterson's live and archived exercises to foster competition in the live and archived classes (*id.* (citing Pet. 20–21, 31–32)). Petitioner further asserts “the same reason

Hurwitz utilizes a comparative display for live classes, to promote competition, would encourage a POSITA to add the feature for archived classes.” *Id.* at 14 (citing Pet. 32). Petitioner also asserts that Patent Owner’s argument directed to Watterson already providing competition “runs afoul of the ‘expansive and flexible approach’ for analyzing obviousness, under which ‘any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.’” *Id.* at 14–15 (quoting *KSR*, 550 U.S. at 415, 420). Regarding Dr. Jeffay’s testimony, Petitioner asserts “[o]ne need not have [trainer] qualifications to recognize that (1) competition motivates people and (2) you can facilitate competition by comparing people’s performance.” *Id.* at 15.

Patent Owner alleges Petitioner replies with new arguments directed to Hurwitz providing a reason for adding a comparative display to live and archived exercise classes and competition being a well-known motivation for exercise. Sur-reply 16–17. Patent Owner further alleges that Petitioner’s reason based on Hurwitz fails on the merits because Petitioner fails to demonstrate that a POSITA would have added more competition to Watterson, which already appreciates the benefits of competition. *Id.* Patent Owner additionally alleges Petitioner’s argument directed to competition being well known to motivate people to exercise also fails on the merits as a reason for adding a comparative display to live and archived exercise classes. *Id.* at 17–21.

Initially, we disagree with Patent Owner that Petitioner presents a new argument by relying on Hurwitz to provide a reason for adding a comparative display to live and archived exercise classes. In the Petition,

Petitioner argues “Hurwitz provides a leaderboard display showing relative performance parameters for various class participants—e.g., cadence and power output—*which fosters healthy competition* and motivates users to keep up with or outperform other users.” Pet. 31–32 (emphasis added) (citing Ex. 1004, 1:52–62, 8:19–22, Figs. 2, 15). Also in the Petition, Petitioner argues “a POSITA would understand that Hurwitz’s competitive benefits are associated with classes generally, and thus a POSITA would be motivated and find it obvious in view of Hurwitz to use a comparative display *to foster competition* for both live and archived class[es].” *Id.* at 32 (emphasis added) (citing Ex. 1003 ¶ 121).

We also disagree with Patent Owner that Petitioner’s reason for adding a comparative display to live and archived exercise classes is to add more competition to Watterson. As set forth in the quotations to the Petition above, Petitioner’s reason for the modification is to foster competition, and Patent Owner does not directly dispute that Hurwitz’s display provides one way to foster competition. *Id.* at 31–32; *see also* Reply 12 (“[A] POSITA would modify Watterson in view of Hurwitz, including by comparing multiple users’ performance parameters on the display in order *to foster competition*, in live and archived classes.” (emphasis added) (citing Pet. 20–21, 31–32)).

Patent Owner is correct that Watterson attributes a healthy sense of competition to group exercise, and that Watterson’s classes include an instructor but not a comparative display. Ex. 1007, 1:57–2:8. Dr. Jeffay, however, testifies that Hurwitz teaches competition can be improved by providing real-time feedback about users’ performance parameters. Ex. 1003 ¶ 120 (citing Ex. 1004, 1:52–62, Figs. 2–3, 15); *see also id.* ¶ 78

(“[A] POSITA would have been motivated in view of Hurwitz to use Hurwitz’s comparative leaderboard display in the context of Watterson’s live and archived classes (as opposed to just in Watterson’s live and time-adjusted racing feature), in order to foster a healthy sense of competition and enhance the user’s experience.”). Indeed, Hurwitz teaches:

Even in a group, however, cyclists (or people participating in other group sports) may not be provided enough information about their performance and the performance of the others in a group. For example, while everyone may know that everyone in a group exercised for twenty minutes, no one may have a benchmark to compare their performance to that of their peers. Thus, the “competitive” aspect is removed from the group. While some bicycles may provide readouts that allow for post-class comparison of numbers, competition could be increased by providing additional real-time feedback at both the individual and the group level.

Ex. 1004, 1:52–62.

As Hurwitz expressly teaches that competition in a group setting can be improved by providing users with real-time feedback about their performance, Hurwitz supports Dr. Jeffay’s testimony that a POSITA would have added a comparative display to live and archived exercise classes to foster competition in the exercise classes. Put simply, Hurwitz provides a reason for adding a comparative display to live and archived exercise classes, and we find Dr. Jeffay’s testimony credible. We are persuaded a POSITA would have added Hurwitz’s comparative display, which shows user performance parameters during an exercise class, to Watterson’s live and archived exercise classes to foster the competition that comes with the group setting of the exercise classes.

After considering the parties' arguments and evidence, we find Watterson and Hurwitz support Petitioner's arguments identifying the limitations of independent claim 1 in its proposed combination of the teachings of Watterson of Hurwitz. We also find that Petitioner has provided persuasive reasoning, supported by rational underpinnings, as to why a POSITA would have combined the teachings of Watterson and Hurwitz as Petitioner proposes, and that Petitioner has demonstrated a POSITA would have had a reasonable expectation of success in combining the teachings of Watterson and Hurwitz to result in the claimed subject matter. Petitioner has shown, by a preponderance of the evidence, that the subject matter of independent claim 1 would have been obvious in view of Watterson and Hurwitz.

4. *Claim 14*

Petitioner argues "Watterson's communication module 254 is a server connected to exercise devices via the Internet." Pet. 38 (citing Ex. 1007, 29:8–14, Fig. 10). According to Petitioner, "[w]hen a user selects a cycling class, the server receives the request from the user's local processing system and delivers the corresponding video, audio, and participant content." *Id.* (citing Ex. 1007, 18:53–19:3, 25:33–38, 26:56–61, Fig. 9).

Patent Owner asserts Petitioner's arguments for claim 14 do not remedy the defects in its arguments for independent claim 1, and Patent Owner relies on its arguments for independent claim 1 for claim 14. PO Resp. 36; Sur-reply 11–21. We address Patent Owner's arguments for independent claim 1 above in section III.D.3, and, for the reasons set forth in that section, we find Petitioner has shown, by a preponderance of the

evidence, that the subject matter of independent claim 1 would have been obvious in view of Watterson and Hurwitz.

After considering the parties' arguments and evidence, we find Watterson supports Petitioner's arguments identifying the limitations of claim 14 in its proposed combination of the teachings of Watterson of Hurwitz. Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 14 would have been obvious in view of Watterson and Hurwitz.

5. *Claim 15*

Claim 15 recites:

15. The system of claim 14, wherein the first local processing system is further operable to perform operations comprising:

generating a leaderboard from the class participant content and the plurality of first user performance parameters, the leaderboard representing performance parameters at the same point in the selected cycling class; and
displaying the leaderboard on the display screen at the first location.

Ex. 1001, 16:61–17:2.

Petitioner points to the exemplary display shown in Hurwitz's Figure 15 and argues "[a] POSITA would have understood that Hurwitz is disclosing a leaderboard, as its exemplary displays allow users to see a list, ordered by user (1 to 5) and displaying respective performance parameters for each user in the list." Pet. 38–39 (citing Ex. 1003 ¶ 178; Ex. 1004, 8:23–26, 31–36, Fig. 15). In the portion of Dr. Jeffay's Declaration that Petitioner cites, Dr. Jeffay testifies "[i]t would also have been obvious to provide other appropriate variations of Hurwitz's leaderboard including

displays in which participants are ordered by a participant's overall rank with respect to the particular performance parameters disclosed in Hurwitz.” Ex. 1003 ¶ 178.

Patent Owner asserts that the exemplary display shown in Hurwitz's Figure 15 does not teach a leaderboard because the exemplary display does not rank the competitors by their performance. PO Resp. 37. Patent Owner further asserts that Petitioner's conclusory assertion of obviousness is insufficient as a matter of law, and that Petitioner cannot incorporate by reference Dr. Jeffay's testimony, which according to Patent Owner, is conclusory and insufficient to show obviousness. *Id.* at 37–38.

In reply, Petitioner argues Hurwitz's Figure 15 teaches a leaderboard because “it includes a ‘horse race display’ that shows who is in the lead and orders/ranks the competitors right-to-left based on most-to-least distance traveled.” Reply 15–16 (citing Pet. 39; Ex. 1003 ¶ 178; Ex. 1056 ¶ 10). Petitioner additionally argues it would have been obvious to rearrange Hurwitz's parameter display by ordering the participants according to overall rank with respect to a particular performance parameter to result in a numeric ranking. *Id.* at 17–19. Petitioner contends that Hurwitz's exemplary display includes a parameter display portion showing the power and cadence for each participant, and that this parameter display portion makes numeric performance comparisons, albeit not ranked from best-to-worst like the horse race display orders performance. *Id.* at 17. Petitioner further contends that a “POSITA would have understood that sorting the list ‘would result in a more useful . . . comparative display,’ in furtherance of Hurwitz's goal of allowing users to easily track their relative performance” (*id.* at 18 (alteration in original) (citing Ex. 1003 ¶ 178)), and

that “[p]roviding users with the flexibility to rearrange the display in simple ways (e.g., sorting the list by power output) was an obvious variant of Hurwitz’s exemplary display that merely requires rearranging information already displayed” (*id.* at 18–19 (citing *Uber Techs., Inc. v. X One, Inc.*, 957 F.3d 1334, 1340 (Fed. Cir. 2020))).

In response, Patent Owner maintains Petitioner, in its Reply, makes new arguments, namely the argument directed to Hurwitz’s horse race display teaching the recited leaderboard and the argument that sorting the parameter display by power output was an obvious variant of Hurwitz’s exemplary display shown in Figure 15. Sur-reply 9–10. Patent Owner further responds that Petitioner’s argument directed to Hurwitz’s horse race display teaching the recited leaderboard fails on the merits. *Id.* at 9. According to Patent Owner, the participants are not in a list in ranked order by their position in the race, and the participants’ order does not change when their positions in the race change. *Id.* Patent Owner additionally responds that Petitioner’s obviousness argument also fails on the merits. *Id.* at 10–11. Per Patent Owner, a participant’s position in a race is not determined by the participant’s current power output at an instant in time, and ranking participants by their power output would provide a useless display. *Id.* at 10.

At the outset, we disagree with Patent Owner that Petitioner’s arguments in its Reply, namely the arguments directed to Hurwitz’s horse race display teaching the recited leaderboard and the obviousness of sorting the parameter display by power output, are new. In its Petition, Petitioner points to the exemplary display shown in Hurwitz’s Figure 15 and argues the exemplary display teaches a leaderboard. Pet. 38–39 (citing Ex. 1003

¶ 178). In its Reply, Petitioner specifically identifies a portion of the exemplary display, i.e., the horse race display, and explains how this portion of the exemplary display teaches a leaderboard. Reply 15–16. Also in the Petition, Petitioner cites to Dr. Jeffay’s testimony that it would have been obvious to provide other appropriate displays ordered by a participant’s overall rank with respect to a performance parameter. Pet. 39. Whether or not instantaneous power is highly desirable as a ranking parameter for a participant, Petitioner argues in its Reply that sorting the parameter display by power output was simply one obvious variant of Hurwitz’s exemplary display ordering a participant’s overall rank with respect to a performance parameter. Reply 17–19.

We also disagree with Patent Owner that Petitioner improperly incorporates by reference Dr. Jeffay’s testimony regarding the obviousness of providing other versions of Hurwitz’s exemplary display. The Petition includes a citation to a single paragraph of Dr. Jeffay’s Declaration. Pet. 38–39 (citing Ex. 1003 ¶ 178). Petitioner includes Dr. Jeffay’s testimony from the cited paragraph in its Reply. Reply 18 (citing Ex. 1003 ¶ 178). Accordingly, we do not view Petitioner’s reliance on the cited paragraph of Dr. Jeffay’s Declaration as improper incorporation by reference.

Turning to Hurwitz’s display, an exemplary display is shown in Figure 15, reproduced below.

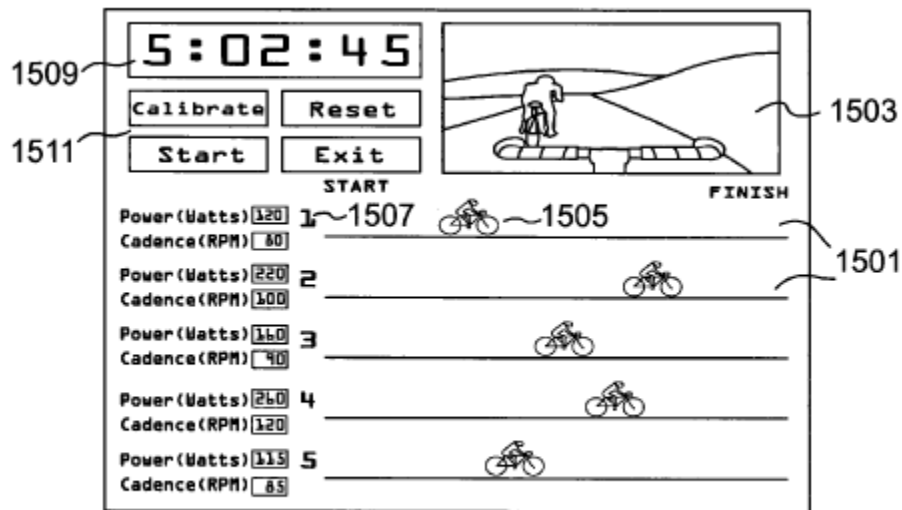


FIG. 15 Illustrative non-limiting example display.

Hurwitz's Figure 15 shows an exemplary illustrative display with a virtual map of various participating cyclists. Ex. 1004, 3:56–57. The upper left portion of the display shows current race time 1509 and various options 1511 for use by a controlling participant, such as “Calibrate,” “Reset,” “Start,” and “Exit.” *Id.* at 8:31–35, Fig. 15. The upper right portion of the display includes a view of virtual world 1503 to show participants the layout of the course ahead. *Id.* at 8:26–27, Fig. 15. The lower right portion of the display includes map of cyclist position 1501 having icons 1505 and numbers 1507 corresponding to the bicycles of the participants in the race. *Id.* at 8:23–25, 28–30, Fig. 15. To the left of each icon 1505 and number 1507, the display shows the power and cadence for the participant associated with icon 1505 and number 1507. *Id.* at Fig. 15.

We agree with Petitioner that Hurwitz's exemplary display shows a list of participants ordered by number. Map 1501 of the exemplary display includes icons 1505 and numbers 1507 associated with each participant in the race. *Id.* at 8:28–30, Fig. 15. As shown in Figure 15, numbers 1507 are

numbers 1–5, and icons 1505 are cyclists positioned at various distances from right to left. As also shown in Figure 15, the participants associated with numbers 1507 and icons 1505 are ordered according to numbers 1507, i.e., 1–5.

We also agree with Petitioner that Hurwitz’s exemplary display shows respective performance parameters for each user in the list. As shown in Figure 15, to the left of each icon 1505 and number 1507, the display shows the power and cadence for the participant associated with icon 1505 and number 1507. The exemplary display also shows the distance traveled. To wit, map 1501 with icons 1505 provides a visual indication of the participants’ positions in a simulated race such that the horizontal position, i.e., left to right and vice versa, of each icon 1505 represents the distance traveled by the participant associated with the icon. Ex. 1004, 8:24–26, Fig. 15. The relative horizontal positions of icons 1505 from right to left indicate the order of participants in the race. As shown on Hurwitz’s exemplary display, the participant associated with number 2 of numbers 1507 has the greatest distance traveled and therefore is in the lead. *Id.* at Fig. 15.

As Hurwitz’s exemplary display shows a list of participants ordered by number 1507 and also shows performance parameters, namely power, cadence, and distance traveled for each participant, Petitioner’s proposed modification to Hurwitz’s exemplary display to order the display by the participants’ ranking with respect to a performance parameter involves only rearranging the displayed information. Furthermore, the proposed modification is also based on Dr. Jeffay’s credible testimony that “[a] POSITA would have understood that such variations of Hurwitz’s

leaderboard would result in a more flexible and useful comparative display” and that “[m]odifying the Hurwitz comparative display to order users based on the disclosed performance parameters would be well within the level of skill of a POSITA.” Ex. 1003 ¶ 178.

Although Patent Owner argues ranking participants by their instantaneous power output would provide a useless display, ordering Hurwitz’s exemplary display according to the participants’ ranking with respect power output is just one example of ordering the display by the participants’ ranking with respect to a given performance parameter, as Petitioner proposes. As set forth above, Hurwitz’s exemplary display shows various performance parameters, including power, cadence, and distance traveled. Ex. 1004, Fig. 15. Ordering Hurwitz’s exemplary display by the participants’ ranking with respect to the performance parameter of distance traveled would emphasize which participant has the greatest distance traveled, or, in other words, which participant is leading the race.

Given that Petitioner’s proposed modification to Hurwitz’s exemplary display involves only rearranging the display to be ordered according to the participants’ ranking with respect to a given performance parameter, we find the proposed modification is simple and would not affect the operation of Hurwitz’s display. Furthermore, the proposed modification is based on Dr. Jeffay’s persuasive testimony that the proposed modification is within the level of ordinary skill in the art and that the proposed modification would result in a more flexible and useful comparative display. Ex. 1003 ¶ 178. In light of his doctorate degree in computer science and experience with designing network-based applications, including network-based applications

involving sensors and multi-media content (*id.* ¶ 41), we find this testimony credible.

After considering the parties’ arguments and evidence, we are persuaded that it would have been obvious to order Hurwitz’s exemplary display by the participants’ ranking with respect to a performance parameter to result in the leaderboard recited in claim 15.⁹ Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 15 would have been obvious in view of Watterson and Hurwitz.

6. *Claim 16*

Claim 16 recites:

16. The system of claim 15, wherein the class participant content comprises live and archived class participant content.

Ex. 1001, 17:3–5.

Petitioner contends claim 16 requires two live participants because the recited live class participant content appears to refer to a live participant other than the recited first user. Pet. 40. With this understanding of the scope of claim 16, Petitioner argues Watterson discloses that multiple live users can compete against the recorded performance of a previous user. *Id.* (citing Ex. 1003 ¶ 184). Petitioner further argues “Watterson discloses that a user would see their own performance parameters, displayed in a synchronized manner against other participants, including in the scenario where such users include fellow ‘live’ participants and recorded

⁹ Petitioner has persuaded us that it would have been obvious to modify Hurwitz to result in a leaderboard even under Patent Owner’s proposed construction of “leaderboard.” We, therefore, need not reach whether Hurwitz already discloses a leaderboard under either party’s interpretation of that term.

performances.” *Id.* (citing Ex. 1003 ¶ 185). Petitioner additionally argues duplicating users is *prima facie* obvious. *Id.*

Patent Owner asserts Petitioner’s arguments for claim 16 do not remedy the defects in its arguments for independent claim 1, and Patent Owner relies on its arguments for independent claim 1 for claim 16. PO Resp. 36–37; Sur-reply 11–21. We address Patent Owner’s arguments for independent claim 1 above in section III.D.3, and, for the reasons set forth in that section, we find Petitioner has shown, by a preponderance of the evidence, that the subject matter of independent claim 1 would have been obvious in view of Watterson and Hurwitz.

After considering the parties’ arguments and evidence, we find Watterson supports Petitioner’s arguments identifying the limitations of claim 16 in its proposed combination of the teachings of Watterson of Hurwitz. Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 16 would have been obvious in view of Watterson and Hurwitz.

7. *Claim 17*

Claim 17 recites:

17. The system of claim 15, wherein the class participant content includes live class participant content; and wherein the leaderboard is synchronized to the first user's performance parameters allowing for comparative class participant content to be presented to the first user.

Ex. 1001, 17:6–10.

Petitioner argues “[t]his claim adds the words that the leaderboard is ‘*synchronized*’ but claim 15 already requires ‘displaying performance parameters at the same point in the selecting cycling class.’” Pet. 41 (citing

Ex. 1003 ¶ 189). Petitioner relies on its arguments for claims 15 and 16 and maintains that its combination of Watterson and Hurwitz would result in the subject matter of claim 17 for the same reasons. *Id.*

Patent Owner asserts Petitioner's arguments for claim 17 do not remedy the defects in its arguments for independent claim 1, and Patent Owner relies on its arguments for independent claim 1 for claim 17. PO Resp. 36–37; Sur-reply 11–21. We address Patent Owner's arguments for independent claim 1 above in section III.D.3, and, for the reasons set forth in that section, we find Petitioner has shown, by a preponderance of the evidence, that the subject matter of independent claim 1 would have been obvious in view of Watterson and Hurwitz.

After considering the parties' arguments and evidence and for the reasons set forth above in sections III.D.5 and III.D.6, we find Watterson and Hurwitz support Petitioner's arguments identifying the subject matter of claim 17 in its proposed combination of the teachings of Watterson of Hurwitz. We also find Petitioner has provided persuasive reasoning, supported by rational underpinnings, as to why a POSITA would have combined the teachings of Watterson and Hurwitz to result in the claimed invention with a reasonable expectation of success. Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 17 would have been obvious in view of Watterson and Hurwitz.

8. *Claim 18*

Claim 18 recites:

18. The system of claim 17, wherein the cycling class content further comprises a start signal indicating a starting point of the cycling class , and wherein class participant content is synchronized to the start signal for data comparison.

Ex. 1001, 17:11–15.

Petitioner argues Hurwitz provides a start button to indicate the start of a class. Pet. 41 (citing Ex. 1003 ¶ 192–196). Petitioner further argues a POSITA would have similarly used a start button to signal the start of Watterson’s exercise classes. *Id.* (citing Ex. 1003 ¶ 192–196).

Patent Owner argues Petitioner’s arguments and Dr. Jeffay’s testimony fail to establish the obviousness of subject matter of claim 18. PO Resp. 39–42. Regarding Petitioner’s arguments, Patent Owner asserts the arguments are conclusory and fail to explain why a POSITA would have added a start button to Watterson’s exercise classes. *Id.* at 39. Patent Owner further asserts that there is no need for a start button in Watterson. *Id.* at 39–41. According to Patent Owner, Watterson’s races and live classes begin at a scheduled time (*id.* at 39–40 (citing Ex. 1007, 38:43–50, 41:21–64; Ex. 2002 ¶¶ 78–80, 107; Ex. 2004 ¶¶ 28–31, 102–103)), and Watterson’s archived classes start at the beginning (*id.* at 40 (citing Ex. 1007, 41:21–65, Ex. 2002 ¶¶ 31–32, 106–107, 126–127; Ex. 2004 ¶¶ 28–31, 125–126)). In regard to Dr. Jeffay’s testimony, Patent Owner contends that Petitioner cannot incorporate by reference Dr. Jeffay’s testimony. *Id.* at 42. Patent Owner also contends Dr. Jeffay ignores Watterson’s racers begin racing at the start time in opining that Watterson’s racers need to know when to begin competing. *Id.* (citing Ex. 1007, 41:21–64; Ex. 2002 ¶¶ 79–80, 104–107; Ex. 2004 ¶¶ 102–103).

Petitioner replies that Patent Owner incorrectly asserts there would be no need to add Hurwitz’s start button to Watterson’s live and archived exercise classes. Reply 19. According to Petitioner, “[t]he function of a start signal—to indicate when to start competing—would apply equally to

prescheduled/archived classes (e.g., to allow for a warm-up/ramp-up before the competition starts).” *Id.* (citing Pet. 41; Ex. 1003 ¶¶ 194, 196; Ex. 1056 ¶¶ 11–12).

Patent Owner responds that Petitioner’s arguments in its Reply amount to an entirely new theory of obviousness. Sur-reply 21. Patent Owner further responds that Petitioner has failed to demonstrate why a POSITA skilled in the exercise arts would have modified Watterson to add a warm-up period. *Id.*

We disagree with Patent Owner that Petitioner improperly incorporates by reference Dr. Jeffay’s testimony regarding why it would have been obvious to use Hurwitz’s start button to signal the start of Watterson’s exercise classes. The Petition includes an adequate explanation of Petitioner’s argument, with citation to a portion of Dr. Jeffay’s Declaration. Pet. 41 (citing Ex. 1003 ¶¶ 192–196). We do not view Petitioner’s reliance on the cited portion of Dr. Jeffay’s Declaration as improper incorporation by reference.

We also disagree that Petitioner’s Reply introduces a new theory of obviousness premised on a warm-up period. Rather, Petitioner relies on a warm-period to show that, in a prescheduled exercise class, a need remains to signal the start of the class. This argument responds to Patent Owner’s argument based on the prescheduled nature of Watterson’s exercise classes without introducing an entirely new theory of obviousness.

Moreover, we disagree with Patent Owner that Petitioner fails to explain why a POSITA would have added a start button to Watterson’s exercise classes. Hurwitz’s start button is part of its comparative display (Ex. 1004, Figs. 2, 15), and, as set forth above in section III.D.3, Petitioner

has persuaded us that a POSITA would have used Hurwitz's comparative display with Watterson's live and archived exercise classes. That notwithstanding, we agree with Petitioner that Hurwitz teaches a start button to signal the start of a class. Ex. 1004, 7:50–63; Figs. 2, 15. Although Patent Owner argues Watterson's exercise classes have particular start times, having a start time does not dismiss the need to signal the start of a class. For example, as Petitioner argues, a participant engaged in a warm-up for an exercise class scheduled to start at a particular time would benefit from a signal indicating the start of the class. Reply 19 (citing Pet. 41; Ex. 1003 ¶¶ 194, 196; Ex. 1056 ¶¶ 11–12). Accordingly, we are persuaded that a POSITA would have used Hurwitz's start button for signaling the start of classes to similarly signal the start of Watterson's live and archived exercise classes. *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.”).

After considering the parties' arguments and evidence, we find Hurwitz supports Petitioner's arguments identifying the limitations of claim 18 in its proposed combination of the teachings of Watterson of Hurwitz. We also find that Petitioner has provided persuasive reasoning, supported by rational underpinnings, as to why a POSITA would have combined the teachings of Watterson and Hurwitz as Petitioner proposes, and that Petitioner has demonstrated a POSITA would have had a reasonable expectation of success in combining the teachings of Watterson and Hurwitz to result in the claimed subject matter. Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 18 would have been obvious in view of Watterson and Hurwitz.

E. Obviousness Based on Hurwitz, Garcia, and Martens

In its Petition, Petitioner challenges claims 1–4, 7–12, and 14–19 under 35 U.S.C. § 103, contending the claimed subject matter would have been obvious over Hurwitz, Garcia, and Martens. Pet. 42–76. In view of Patent Owner’s Disclaimer (Ex. 2001), however, only claims 14–18 remain. The parties dispute whether these remaining claims are unpatentable over Hurwitz, Garcia, and Martens. PO Resp. 43–64; Reply 20–33; Sur-reply 9–11, 22–27.

As we discuss Hurwitz in section III.D.2, we begin our analysis of this asserted ground of unpatentability with an overview of each of Garcia and Martens. We next discuss the parties’ arguments for independent claim 1, from which claims 14–18 depend. We then turn to the parties’ arguments for claims 14–18.

1. Garcia

Garcia relates to “systems and methods for providing information and services pertaining to health and fitness,” and, more particularly, to “web-based applications that provide interactive access to classes and instruction pertaining to health and fitness.” Ex. 1005 ¶ 1. As illustrated in Figure 9, reproduced below, a member-accessible Internet site 25 provides live one-way, and optional two-way, feeds to multiple live exercise classes being conducted at various remote gym facilities. *Id.* ¶ 35.

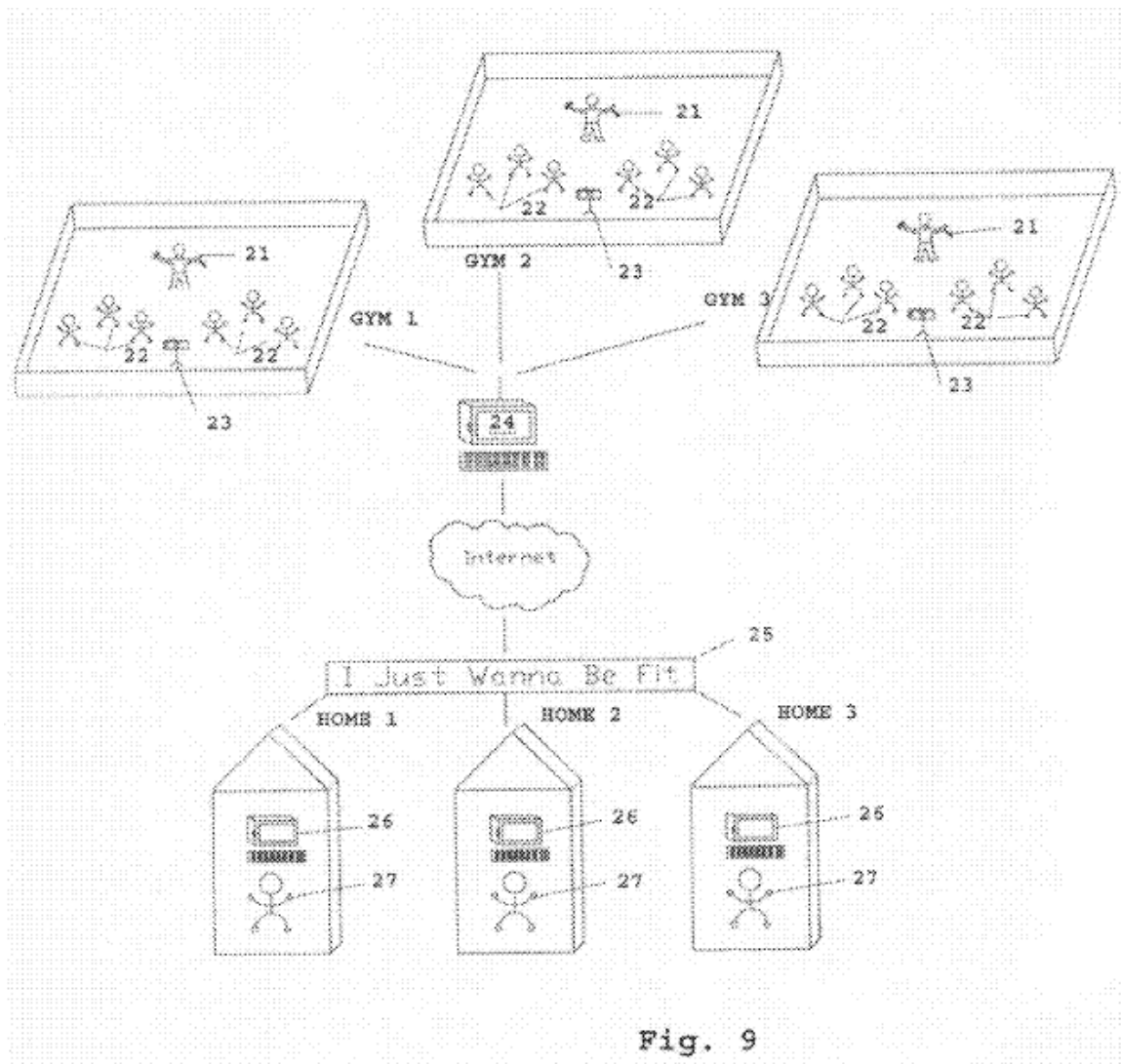


Figure 9 is a schematic diagram illustrating a one-way, real-time streaming of multiple live exercise classes to members via the Internet. *Id.* ¶ 34. With a one-way feed, participating member 27, using home computer equipment 26, sees exercise instructor 21 and optionally all or part of the on-site exercise group 22, but member 27 is not visible to them. *Id.* ¶ 35. With a two-way feed, participating member 27 would be visible to instructor 21 in a video display. *Id.*

Member-accessible Internet site 25 comprises multiple modules, including video streaming module 104. *Id.* ¶ 50, Fig. 3. Video streaming

module 104 manages the live and prerecorded video content streaming from the site, which is accessible to the user from a menu of available live and prerecorded video content. *Id.* ¶ 50.

2. *Martens*

Martens “relates generally to exercise equipment and more particularly to a cardiovascular exercise machine having a display system to provide a visual gauge of fitness progress and a method for gauging fitness progress.” Ex. 1006, 1:17–20. The display system may be attached to an exercise bicycle, and shows a small cyclist figure representing the current workout of the user, as well as several other shadow competitor cyclist figures. *Id.* at 4:24–32. The shadow competitors may represent previously recorded workouts, a user’s best performance results, or other users who have given permission for their results to be used in a competition. *Id.* at 4:32–38.

The display system is shown in Figure 5, reproduced below.

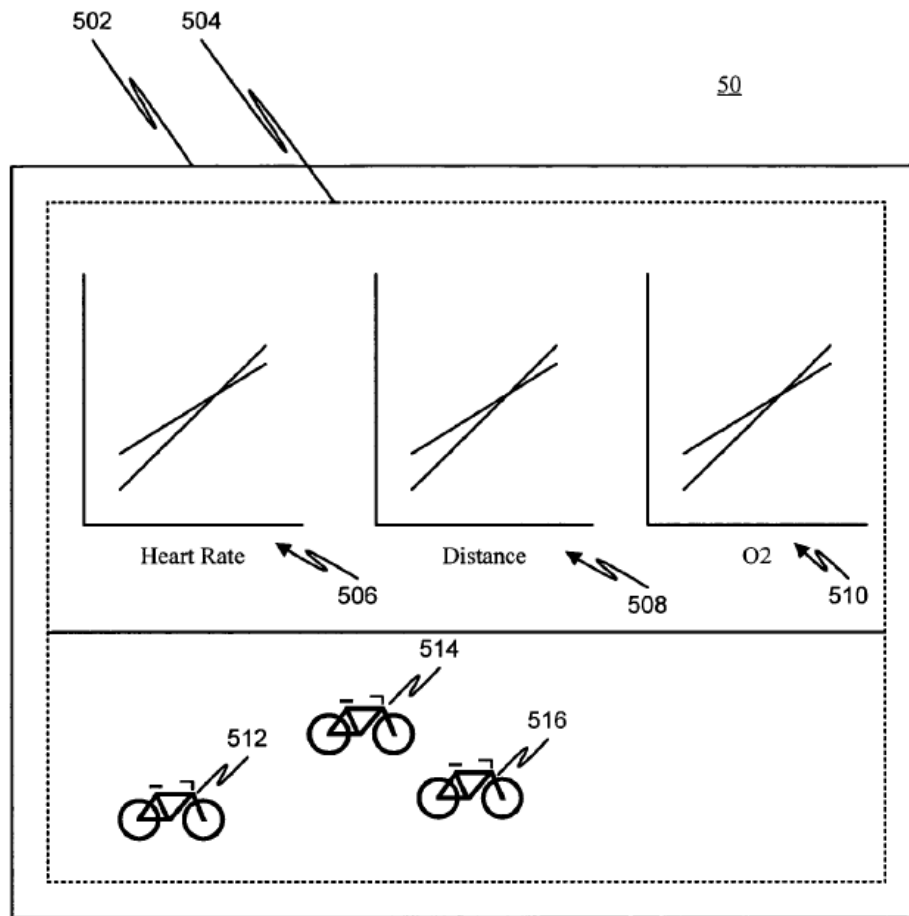


FIG. 5

Figure 5 is a diagram of a graphical user interface display. *Id.* at 7:34–35. Display system 50 includes visible screen portion 502, touch screen portion 504, heart rate graph 506, distance graph 508, blood oxygen level graph 510. *Id.* at 9:54–59. Display system 50 also includes first virtual competitor 512, second virtual competitor 514, and a graphical symbol of a current workout 516. *Id.* First virtual competitor 512 and second virtual competitor 514 are responsive to data retrieved from a database, and graphical system of a current workout 516 is responsive to data sensed during the current workout. *Id.* at 9:63–66.

3. *Independent Claim 1*

For independent claim 1, Petitioner proposes a combination of teachings from Hurwitz, Garcia, and Martens that essentially modifies the references in four ways. Pet. 43–51. Petitioner also presents reasons why a POSITA would have made each modification associated with its proposed combination. *Id.*

First, Petitioner asserts it would have been obvious to use Garcia’s conventional web interface (CWI) with Hurwitz’s networked exercise system. *Id.* at 43–45. Petitioner argues “Hurwitz discloses a networked exercise system that allows users to participate in competitive cycling classes from home via the Internet.” *Id.* at 43 (citing Ex. 1004, 2:32–38, 3:9–19, 4:18–24). According to Petitioner, “Hurwitz does not explain in detail how remote users would access its system via the Internet, because such details were conventional and well-known.” *Id.* at 43–44 (citing Ex. 1003 ¶ 211). Petitioner also argues Garcia teaches the conventional and well-known techniques for facilitating participating in live and archived exercise classes via the Internet, including the use of a CWI for users to view and select classes. *Id.* at 44 (citing Ex. 1003 ¶¶ 212–213). Petitioner further argues:

A POSITA would recognize that using Garcia’s CWI simply required using a known technique (using Garcia’s CWI as an entry point for viewing and selecting live/archived classes) with Hurwitz’s networked exercise system, to achieve the predictable result of allowing users to view and select an available class to begin exercising.

Id.; see also Ex. 1003 ¶ 214 (“A POSITA would have recognized that using Garcia’s web interface simply required applying a known technique with Hurwitz’s networked exercise system, because all that is required is to make

Garcia’s web interface available on Hurwitz’s display screen as an initial entry point to the exercise system to achieve the predictable result of allowing users to view and select an available class via the web interface in order to begin exercising.”).

Second, Petitioner asserts it would have been obvious to implement Garcia’s technique for providing archived video classes in Hurwitz’s networked exercise system. Pet. 45–46. Petitioner argues “Hurwitz offers live classes and discloses storing participants’ performance data for later display.” *Id.* at 45 (citing Ex. 1004, 4:25–33). Petitioner acknowledges “Hurwitz does not expressly disclose offering archived classes” (*id.*), and argues “Garcia’s system provides the ability for users to select either live or prerecorded (archived) video classes” (*id.* (citing Ex. 1005 ¶ 50, Figs. 1, 3)). Petitioner also argues “Hurwitz was already archiving performance data for later display, and a POSITA would have understood that it was generally easier and less costly to provide archived classes to remote users (delivering stored media/content being simpler than providing live media/content).” *Id.* (citing Ex. 1003 ¶ 215; Ex. 1005 ¶ 5). Petitioner further argues

a POSITA would have been motivated and found it obvious to apply Garcia’s known technique of offering live and archived classes and an interface for accessing them, with the predictable result being an improved system that includes archived versions of Hurwitz’s live classes that a user can take at any desired time. *Id.* (citing Ex 1003 ¶ 216).

Third, Petitioner asserts it would have been obvious to include video of a class instructor and participants, as Garcia teaches, on Hurwitz’s display. *Id.* at 46–47. According to Petitioner, “while Hurwitz discloses instructors . . . and a video display . . . , Hurwitz does not expressly disclose

that video of the instructor and class participants appears on the display.” *Id.* at 46 (citing Ex. 1003 ¶ 217; Ex. 1004, 8:37–67). Petitioner argues Garcia teaches an exercise instructor and all or part of an on-site exercise group are visible to a participant viewing a live feed of multiple live exercises classes at various remote gym facilities. *Id.* at 46–47 (citing Ex. 1005 ¶¶ 3–4, 7). Petitioner also argues that a POSITA would have combined the teachings of Hurwitz and Garcia to provide videos of live or archived classes showing an instructor and class participants because such videos showing an instructor and class participants offer better instruction and an increased sense of inclusion. *Id.* (citing Ex. 1003 ¶¶ 217–218).

Fourth, Petitioner asserts it would have been obvious to implement Martens’s synchronization techniques with the exercise system resulting from the combination of Hurwitz and Garcia. *Id.* at 47–50. According to Petitioner, Hurwitz’s live classes include a contemporaneous comparative display of a user’s performance data with other participants’ real-time performance data (*id.* at 47 (citing Ex. 1004, Fig. 15)), and the combination of Hurwitz and Garcia would result in providing archived versions of Hurwitz’s live classes (*id.* at 47–48). Petitioner acknowledges the combination of Hurwitz and Garcia would not result in the contemporaneous comparative display of a user’s performance data with prior participants’ archived performance data. *Id.* at 48. Petitioner argues Martens’s shadow competitors represent prior participants. *Id.* at 49 (citing Ex. 1006 4:31–38). Petitioner also argues Martens teaches “[t]he results of these shadow competitors are then recreated/synchronized so that the shadow results appear contemporaneous with the current user’s performance of the workout.” *Id.* (citing Ex. 1006, 4:53–5:5, 7:6–17, 9:4–21, 38–52).

Petitioner further argues implementing Martens’s synchronization technique in the exercise system resulting from the combination of Hurwitz and Garcia would have been the application of a known improvement to provide users with a coherent display showing a contemporaneous comparison of real-time and archived performance data, and, thus, afford users the same competitive experience when taking archived classes as when taking live classes. *Id.* at 49–50 (citing Ex. 1003 ¶¶ 222–223).

In its proposed combination of the teachings of Hurwitz, Garcia, and Martens, Petitioner identifies each limitation of independent claim 1. Pet. 51–65. For the preamble and the “user interface” limitation, Petitioner relies on Hurwitz and Garcia. *Id.* at 51–57. Petitioner argues Hurwitz discloses a user interface that includes a display and that receives input from users via a variety of menu options. *Id.* at 51–52 (citing Ex. 1003 ¶¶ 230–231; Ex. 1004, 4:26–34, 7:56–63, 8:17–23, 31–36, Figs. 3, 15). Petitioner also argues Hurwitz discloses that users may be in the same room or may be in locations spread out all over the world and connected over the Internet, and that, to facilitate remote participation, remote users’ devices may have private displays, sensors, and processing devices for storing and displaying data in real-time or on demand. *Id.* at 56–57 (citing Ex. 1003 ¶ 246; Ex. 1004, 3:17–19, 4:18–24, 26–34). Petitioner further argues that “Hurwitz discloses a system in which users view digital video content associated with a cycling class while participating in the class” (*id.* at 53–54 (citing Ex. 1003 ¶ 236; Ex. 1004, 4:3–6, 8:48–49, Fig. 2)), and that “[a] POSITA would thus reasonably expect Hurwitz’s system to display live cycling class content to users via a display, with the display showing real-time performance parameters corresponding to users and real-time

video content” (*id.* at 54 (citing Ex. 1003 ¶ 237)). Turning to Garcia, Petitioner argues Garcia teaches a user interface, i.e., a web page, operable to display live and archived cycling class content. *Id.* at 54–55 (citing Ex. 1005 ¶¶ 8–13, 35, 50, Figs. 1, 3, 9). Petitioner also argues Garcia’s web site includes video streaming module 104 that manages live and prerecorded video content streaming from the site, which a user accesses from a menu of available live and prerecorded video content. *Id.* at 56 (citing Ex. 1003 ¶ 243; Ex. 1005 ¶¶ 50–51, Figs. 3, 5). Referencing its reasons for combining the teachings of Hurwitz, Garcia, and Martens, Petitioner asserts it would have been obvious to make Garcia’s archived cycling classes available in Hurwitz’s system so that users may participate in both live and on-demand classes. *Id.* at 54 (citing Ex. 1003 ¶ 238).

For the “plurality of sensors” limitation, Petitioner relies on Hurwitz. *Id.* at 57. Specifically, Petitioner argues Hurwitz discloses a plurality of sensors, such as cadence sensors, force sensors, and hear-rate monitors, for detecting user activity and generating performance parameters for display. *Id.* (citing Ex. 1003 ¶ 250; Ex. 1004, 2:64–3:15, 4:34–44, Fig. 15).

Petitioner also relies on Hurwitz to disclose the “first local processing system” limitation. *Id.* at 57–58. Petitioner argues Hurwitz discloses a processing device that is communicably coupled to the user interface and the sensors to store and display sensor data. *Id.* (citing Ex. 1004, 4:26–44, 7:52–53, 56–63, 8:17–27). Petitioner also argues “a POSITA would reasonably expect each device to have its own local processing devices for processing sensor information, receiving user input, and displaying information.” *Id.* at 58 (citing Ex. 1003 ¶ 256; Ex. 1004, 2:32–38, 3:17–19, 8:47–67).

For the first “display” limitation and the “receive” limitation, Petitioner relies on Hurwitz and Garcia. *Id.* at 58–59. Petitioner argues Hurwitz discloses that remote users may join and participate in cycling classes from remote locations via the Internet, and that Garcia teaches conventional Internet-implementation details. *Id.* at 58. Referring to its reasons for combining the teachings of Hurwitz, Garcia, and Martens, Petitioner argues users would initially view and ultimately select available live and archived cycling classes via an Internet website presented by Hurwitz’s processing system. *Id.* at 58–59 (citing Ex. 1003 ¶¶ 259–262; Ex. 1005 ¶¶ 49–51, Fig. 3).

Petitioner also relies on Hurwitz and Garcia for the “output” limitation. *Id.* at 59–61. Petitioner argues Hurwitz discloses a processing device that includes an output to a display, which provides visual feedback to participants about their individual positions in a simulated race and the layout of the course ahead. *Id.* at 59–60 (citing Ex. 1004, Abstract, 7:52–53, 8:17–27, 47–67, Fig. 15). Referencing its reasons for combining the teachings of Hurwitz, Garcia, and Martens, Petitioner argues the combination of Hurwitz and Garcia would result in a local processing unit outputting digital video of a class featuring an instructor and other participants, and audio, such as a class instructor’s vocal encouragement to class participants. *Id.* at 61 (citing Ex. 1003 ¶¶ 268–269).

For the “track” limitation and the second “display” limitation, Petitioner relies on Hurwitz. *Id.* Petitioner argues Hurwitz’s local processing systems track and display cycling parameters, including power output, cadence, and heart rate, so that a plurality of people in a group

exercise class or competition can easily track their relative performance in real-time. *Id.* (citing Ex. 1004, Abstract, 3:5–8, 4:11–23, Figs. 2, 15).

Regarding the third “display” limitation, which recites “the selected exercise class,” Petitioner identifies this limitation in its proposed combination of Hurwitz, Garcia, and Martens whether “the selected exercise class” is live or archived. *Id.* at 61–65. For a live class, Petitioner relies on Hurwitz to disclose this limitation. *Id.* at 61–63. Petitioner argues Hurwitz discloses remote users may take live cycling classes via the Internet, with each remote user having the user’s own local processing device for tracking, storing, displaying, and transmitting performance parameters. *Id.* (citing Ex. 1003 ¶ 279; Ex. 1004, Abstract, 3:5–8, 4:3–23, Figs. 2, 15). For an archived class, Petitioner asserts the combination of Hurwitz, Garcia, and Martens would result in this limitation. *Id.* at 63–65. Petitioner argues Hurwitz discloses its leaderboard display showing the relative performance of remotely-located class participants at a plurality of the same points in a cycling class enhances the competitive aspect of the class. *Id.* at 63 (citing Ex. 1004, 1:30–67, 8:19–24, Fig. 15). Petitioner also argues “a POSITA would be similarly motivated and find it obvious to provide the same comparative display features to enhance competition of [Garcia’s] archived classes by tracking a user’s own parameters and comparing them to the archived results of prior participants.” *Id.*; *see also* Ex. 1003 ¶ 282 (testifying that it would have been obvious to use a comparative display with archived classes). Regarding Martens, Petitioner argues Martens teaches a contemporaneous comparative display of a user’s real-time performance parameters with those of shadow competitors that represent previously recorded workouts, the user’s best performance results, or other users who

have given permission for their results to be used in a competition. *Id.* at 64 (citing Ex. 1006, 4:31–38, 4:53–5:5, 7:6–17, 9:4–21, 38–52). Petitioner further argues Martens teaches the steps of receiving real-time sensor data, retrieving historical data, and generating a display comparing the real-time and historical data as if they were occurring at the same time throughout the workout. *Id.* at 64–65 (citing Ex. 1006, 12:33–46, Fig. 8). Referencing its reasons for combining the teachings of Hurwitz, Garcia, and Martens, Petitioner asserts it would have been obvious to use Martens’s synchronized comparative display with the exercise system resulting from the combination of Hurwitz and Garcia to yield the predictable result of enhancing competition irrespective of whether a user is taking a live or archived class. *Id.* at 65 (citing Ex. 1003 ¶ 286).

Patent Owner does not dispute Petitioner’s identification of the limitations of independent claim 1 in Petitioner’s proposed combination of Hurwitz, Garcia, and Martens. Rather, Patent Owner maintains a POSITA would not have made all of the modifications associated with Petitioner’s proposed combination. PO Resp. 46–61; Sur-reply 22–27. According to Patent Owner, “[Petitioner] proposed a convoluted, hindsight-driven, multi-part combination, impermissibly picking and choosing disparate teachings from three different references until it arrived at the claimed invention.” PO Resp. 46; *see also* Sur-reply 22–23 (arguing Petitioner’s proposed combination is complicated and convoluted and ultimately results in jettisoning live classes). Relying on a number of proposed modifications, however, does not weigh against the obviousness of the claimed invention. *See, e.g., In re Gorman*, 933 F.2d 982, 986 (Fed. Cir. 1991) (“The criterion [for obviousness], however, is not the number of references, but what they

would have meant to a person of ordinary skill in the field of the invention.”).

In regard to Petitioner’s first proposed modification, whereby Petitioner proposes to use Garcia’s CWI with Hurwitz’s networked exercise system, Patent Owner argues:

[Petitioner] contended that Garcia teaches “the use of a conventional web interface (‘CWI’) for users to select/view classes” (Pet. 44), but that is, at best, one way to allow users to view and select Hurwitz’s live programs. It is not a reason to abandon Hurwitz’s existing programs and providing a view of the instructor instead of the road and competitors ahead.

PO Resp. 50 (citing Ex. 2004 ¶¶ 116–120). Petitioner replies that it would have been obvious to use a CWI, like that of Garcia, to allow users to select and view Hurwitz’s classes. Reply 21.

Although Patent Owner argues adding Garcia’s CWI to Hurwitz’s networked exercise system is not a reason to abandon Hurwitz’s exercise programs and display of the virtual world including the road and competitors ahead, Patent Owner does not dispute Petitioner’s reason for adding Garcia’s CWI to Hurwitz’s networked exercise system. Furthermore, we agree with Petitioner that Garcia teaches using a CWI to enable remote users to view and select classes (Ex. 1005 ¶ 50), and Patent Owner acknowledges Garcia’s CWI is one way to select classes in a networked system (PO Resp. 50 (citing Ex. 2004 ¶¶ 116–120)). We are persuaded that a POSITA would have used Garcia’s CWI to select and view Hurwitz’s classes as an application of a known technique for enabling remote users to select classes in a networked system. *See KSR*, 550 U.S. at 417 (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize

that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”).

Regarding Petitioner’s second proposed modification, by which Petitioner proposes to implement Garcia’s technique for providing archived video classes in Hurwitz’s networked exercise system, Patent Owner argues that Petitioner misrepresents Garcia as describing high costs of providing video feeds, and that providing data comparisons for archived exercise classes is much more difficult than doing so for live classes. PO Resp. 53–54. Patent Owner additionally argues Garcia’s archived video classes cannot be used for Hurwitz’s comparative display. *Id.* at 54–57; Sur-reply 25–26. In this regard, Patent Owner alleges Garcia’s archived video classes are streamed audio/video of pre-recorded exercise classes and lack any associated and archived user performance parameters. PO Resp. 54 (citing Ex. 1005 ¶ 35; Ex. 2002 ¶¶ 111–115). Patent Owner also alleges that Hurwitz discloses storing data to generate summaries and analyses of a user’s performances, and that Martens teaches the conventional storage of summary information on exercise-machine workouts provides inadequate records for graphical representation and real-time feedback. *Id.* at 56 (citing Ex. 1004, 2:27–32, 9:1–5; Ex. 1006, 10:13–23; Ex. 2002 ¶¶ 85–86, 122–125); Sur-reply 25. Patent Owner further alleges that Hurwitz’s stored information is unsuitable for use with Hurwitz’s comparative display because Hurwitz collects data for each individual, not information associated with any particular racecourse or exercise program. PO Resp. 56–57 (citing Ex. 2002 ¶¶ 123–125; Ex. 2004 ¶¶ 106–109, 121); Sur-reply 25–26.

Petitioner replies “the fact that streaming live exercise classes was not cost prohibitive does not negate the benefits of offering archived classes on

demand” (Reply 22), and that “a POSITA would have found it easier to compare parameters for archived classes because, unlike live classes, the prior participants’ performance at various time points is known in advance making for easier comparisons” (*id.* at 24 (citing Ex. 1056 ¶¶ 13–15)).

Petitioner also replies “the fact that [Hurwitz’s] stored data may be used to generate summaries does not mean only ‘summary information’ has been stored” (*id.* at 25 (citing Ex. 1056 ¶ 22)), and Petitioner contends a POSITA would have understood that Hurwitz’s sensor-generated performance data was stored and displayed at a later time (*id.* (citing Ex. 1056 ¶ 21)).

Petitioner further replies that it is proposing to combine the teachings of Hurwitz and Garcia to provide archived versions of Hurwitz’s live classes (*id.* at 26 (citing Pet. 45, 48)), and that “the information stored would be associated with a particular class for making an apples-to-apples comparison” (*id.* (citing Ex. 1056 ¶ 24)).

We disagree with Patent Owner that Garcia’s technique for providing archived video classes could not be used for Hurwitz’s comparative display. Although Patent Owner alleges that Garcia’s archived video classes lack any associated and archived user performance parameters and that Hurwitz’s stored data is for generating summaries of a user’s performance and does not include information associated with any particular racecourse or exercise program, we nevertheless agree with Petitioner that Hurwitz discloses storing data related to user performance parameters and using the stored data for a comparative display. Hurwitz discloses: “[T]he sensor device(s) may communicate wirelessly to one or more processing devices. These processing devices may also be used to store incoming data and also display information in real time or at a time of a user’s choosing.” Ex. 1004,

4:29–33. Hurwitz further discloses: “The processing device may also include an output to a display. . . . The display can provide information to users, leaders, and onlookers, to educate, motivate and entertain them.” *Id.* at 8:17–22. Hurwitz’s Figure 15 shows an exemplary display, and, as shown in Figure 15, the exemplary display includes performance parameters, such as power, cadence, and distance traveled, for each user. As Hurwitz discloses storing data that is used for a comparative display, Petitioner has demonstrated that a POSITA would have reasonably expected Garcia’s technique for providing archived video classes could be used for Hurwitz’s comparative display.

Moreover, although the parties dispute the cost savings and difficulties associated with archived classes relative to live classes, there is no dispute that archiving Hurwitz’s live classes provides the benefit of having additional classes that a user can take at any desired time. Petitioner has persuaded us that a POSITA would have implemented Garcia’s technique for providing archived video classes in Hurwitz’s networked exercise system. *See Winner Int’l Royalty Corp. v. Wang*, 202 F.3d 1340, 1349 n.8 (Fed. Cir. 2000) (“The fact that [a] motivating benefit may come at the expense of another does not nullify its use as a basis to modify the disclosure of one reference with the teachings of another.”).

In regard to Petitioner’s third proposed modification, whereby Petitioner proposes to include video of a class instructor, as Garcia teaches, on Hurwitz’s display, Patent Owner maintains Petitioner has not explained how a POSITA would have removed the virtual view of the track and competitors ahead from Hurwitz’s display and replaced it with a video of Garcia’s exercise instructor. PO Resp. 51–53. Patent Owner contends

people tend to be more motivated when a pace rider is in sight. *Id.* at 51–52 (citing Ex. 1007, 41:44–48; Ex. 2004 ¶¶ 116–120). Patent Owner also contends Dr. Jeffay’s testimony in support of Petitioner’s third proposed modification is due no weight. *Id.* at 52. Per Patent Owner, this testimony is conclusory, and Dr. Jeffay is not qualified to opine on this proposed modification. *Id.* Patent Owner further contends the portion of Garcia that Petitioner quotes teaches it is desirable for the online participants to be visible to the instructor, not the other way around. *Id.* at 53 (citing Pet. 46–47¹⁰; Ex. 2004 ¶¶ 112–113).

Petitioner replies that, although the claims do not require an instructor, it would have been obvious to modify Hurwitz to show the instructor in the video. Reply 27–28. Petitioner also replies it does not propose replacing the virtual view of the track and competitors ahead, but instead proposes adding video of the instructor in addition to the virtual view. *Id.* at 29 (citing Pet. 46). Petitioner further replies “[v]ideo of an instructor offers its own benefits, and a POSITA would have been motivated to modify Hurwitz to include video of an instructor to obtain those benefits, either in addition to or instead of the virtual world.” *Id.* at 30 (citing Ex. 1056 ¶¶ 18–19).

In response, Patent Owner argues Petitioner, in its Reply, argues for the first time that a POSITA would have modified Hurwitz to display the instructor and the virtual view. Sur-reply 23. Patent Owner also argues Petitioner’s new argument fails for the same reasons as its original argument. *Id.* at 24–25.

¹⁰ Petitioner cites to “Pet. 46–67.” We understand this citation to be a typographical error, and consider Petitioner to be citing to pages 46–47 of the Petition.

Initially, we disagree with Patent Owner that Petitioner, in its Petition, proposes to remove the virtual view from Hurwitz's display and replace it with a video of Garcia's exercise instructor, and we further disagree that Petitioner, in its Reply, proposes for the first time to modify Hurwitz to display the instructor and the virtual view. The Petition is silent regarding removing the virtual view, and, instead, Petitioner argues that "*in addition to displaying virtual maps/courses and scenery*, it was also obvious to display video of the instructor and class participants." Pet. 46 (emphasis added) (citing Ex. 1003 ¶¶ 217–218).

Moreover, Petitioner's rationale for the third proposed modification, namely better instruction and an increased sense of inclusion, is based on Dr. Jeffay's testimony, Hurwitz, and Garcia. Put simply, Petitioner's rationale for the third proposed modification is not based on Dr. Jeffay's testimony alone. Although Patent Owner contends the quoted portion of Garcia teaches it is desirable for the online participants to be visible to the instructor, the paragraphs of Garcia that Petitioner cites teach the benefits of being part of a group during exercise. In particular, Garcia teaches "the need for some level of social interaction to keep the exercise effort both interesting and motivating." Ex. 1005 ¶ 3. As Garcia teaches the benefits of group exercise, Petitioner has persuaded us that a POSITA would have included video of a class instructor, as Garcia teaches, on Hurwitz's display.

Regarding Petitioner's fourth proposed modification, by which Petitioner proposes to implement Martens's synchronization techniques with the exercise system resulting from the combination of Hurwitz and Garcia, Patent Owner alleges that Petitioner's proposed modification makes no sense because Martens and Petitioner's combination of Hurwitz and Garcia are

fundamentally different. PO Resp. 58. According to Patent Owner, Martens compares workouts that followed the same internally-stored workout routine and thus makes apples-to-apples comparisons, whereas Petitioner’s combination of Hurwitz and Garcia uses Garcia’s archived video classes, which are streaming video with no data regarding the racecourse or exercise routine followed during the class. *Id.* (citing Ex. 2002 ¶¶ 111–116; Ex. 2004 ¶¶ 112, 123–124). Patent Owner also alleges that “[Petitioner] makes the conclusory argument that synchronizing would be ‘nothing more than applying its known leaderboard display features from Hurwitz’s live classes to similarly improve its archived classes.’” *Id.* at 59 (citing Pet. 63). Patent Owner further alleges Petitioner cannot incorporate by reference Dr. Jeffay’s testimony that Petitioner cites to support this argument. *Id.* Regarding this testimony, Patent Owner alleges: “Dr. Jeffay argues that ‘the only logical point in time to compare multiple users’ data would be at the same relative point in the class (as Hurwitz disclosed for live classes).’ . . . But Dr. Jeffay does not answer the key question: relative to what?” *Id.* (emphasis omitted) (quoting Ex. 1003 ¶ 282). According to Patent Owner, the invention of the ’590 patent includes a start signal to mark the beginning of the class for purposes of data comparison, and Martens has no need for a start signal. *Id.* at 60 (citing Ex. 1001, 13:39–14:15, Fig. 17; Ex. 2002 ¶ 31; Ex. 2004 ¶¶ 27–31); *id.* at 60–61; Sur-reply 26.

Patent Owner’s allegations are based on Petitioner’s combination of Garcia and Hurwitz using Garcia’s archived video classes. PO Resp. 58. Petitioner, however, is not proposing to add Garcia’s archived video classes to Hurwitz’s networked exercise system. Rather, Petitioner proposes to implement Garcia’s technique for providing archived video classes in

Hurwitz's networked exercise system to generate archived versions of Hurwitz's live classes. Pet. 45 (“[A] POSITA would have been motivated and found it obvious to apply Garcia’s known technique of providing archived video classes within the Hurwitz system, with the predictable result being an improved system that has additional classes that a user can take at any desired time.” (citing Ex. 1003 ¶ 216)); *id.* at 47–48 (arguing “Hurwitz in combination with Garcia discloses providing archived versions of Hurwitz’s live classes”); Reply 26 (“The Petition proposed combining Hurwitz and Garcia to provide ‘archived versions of Hurwitz’s live classes.’ . . . Thus, the information stored would be associated with a particular class making for an apples-to-apples comparison.” (emphasis omitted) (citing Pet. 45, 48; Ex. 1056 ¶ 24)).

Petitioner has persuaded us that Martens teaches synchronizing a user’s real-time performance parameters with prior users’ archived performance parameters. Ex. 1006, 4:31–38, 9:38–52. Petitioner also has persuaded us that a POSITA would have implemented Martens’s synchronization technique in the exercise system resulting from the combination of Hurwitz and Garcia as the application of a known improvement to provide users with a coherent display showing a contemporaneous comparison of real-time and archived performance data. *See KSR*, 550 U.S. at 417 (“[I]f a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.”).

Apart from its arguments regarding the specific modifications associated with Petitioner’s proposed combination of the teachings of

Hurwitz, Garcia, and Martens, Patent Owner contends Petitioner's proposed combination of the teachings of Hurwitz, Garcia, and Martens would be inoperable such that the references teach away from Petitioner's proposed combination. PO Resp. 61–62. According to Patent Owner, Petitioner's proposed combination would be inoperable because Hurwitz does not store the necessary data. *Id.* at 61.

We disagree that Hurwitz does not store the necessary data. As we discuss above in regard to Petitioner's second proposed modification, whereby Petitioner proposes to implement Garcia's technique for providing archived video classes in Hurwitz's networked exercise system, Hurwitz discloses storing data that is used for a comparative display. Consequently, we disagree with Patent Owner that a POSITA would have considered Petitioner's proposed combination inoperable such that the references teach away from Petitioner's proposed combination. Rather, Petitioner has demonstrated that a POSITA would have reasonably expected Petitioner's proposed combination of the teachings Hurwitz, Garcia, and Martens to be operable.

After considering the parties' arguments and evidence, we find Hurwitz, Garcia, and Martens support Petitioner's arguments identifying the limitations of independent claim 1 in its proposed combination of the teachings of the references. We also find that Petitioner has provided persuasive reasoning, supported by rational underpinnings, as to why a POSITA would have combined the teachings of Hurwitz, Garcia, and Martens as Petitioner proposes, and that Petitioner has demonstrated a POSITA would have had a reasonable expectation of success in combining the teachings of the references to result in the claimed subject matter.

Petitioner has shown, by a preponderance of the evidence, that the subject matter of independent claim 1 would have been obvious in view of Hurwitz, Garcia, and Martens.

4. *Claim 14*

Petitioner argues Garcia teaches that users access available live and archived cycling classes using an Internet site via computer servers.

Pet. 71–72 (citing Ex. 1003 ¶ 323; Ex. 1005 ¶¶ 35, 49–50, Figs. 1, 3, 9).

With reference to its proposed modification to implement Garcia’s technique for providing archived video classes in Hurwitz’s networked exercise system, Petitioner argues:

[A] POSITA would understand that implementing Hurwitz in view of Garcia would involve designing the system such that, when a user requests a cycling class using their local processing system, the request would involve the local processing system retrieving the associated video, audio, and the stored participant content (live or archived) from a server.

Id. at 72 (citing Ex. 1003 ¶ 325). Petitioner further argues that “[b]ecause users in the combined system access the available classes over the Internet, a POSITA would reasonably expect the video, audio, and class participant content to be delivered to the first user via a server, as was well known.” *Id.* (citing Ex. 1003 ¶ 325).

Patent Owner asserts Petitioner’s arguments for claim 14 do not remedy the defects in its arguments for independent claim 1, and Patent Owner relies on its arguments for independent claim 1 for claim 14. PO Resp. 62; Sur-reply 22–27. We address Patent Owner’s arguments for independent claim 1 above in section III.E.3, and, for the reasons set forth in that section, we find Petitioner has shown, by a preponderance of the

evidence, that the subject matter of independent claim 1 would have been obvious in view of Hurwitz, Garcia, and Martens.

After considering the parties' arguments and evidence, we find Hurwitz and Garcia support Petitioner's arguments identifying the limitations of claim 14 in its proposed combination of the teachings of Hurwitz, Garcia, and Martens. Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 14 would have been obvious in view of Hurwitz, Garcia, and Martens.

5. *Claim 15*

Petitioner points to the exemplary display shown in Hurwitz's Figure 15 and argues "[a] POSITA would have understood that Hurwitz is disclosing a leaderboard, as its exemplary displays allow users to see a list, ordered by user (1 to 5) and displaying respective performance parameters for each user in the list at a plurality of points in the class." Pet. 72–73 (citing Ex. 1003 ¶ 329; Ex. 1004, 8:23–26, 31–36, Fig. 15). Petitioner additionally argues "it would have been obvious to provide other appropriate displays including displays ordered by a participant's overall rank with respect to a given parameter." *Id.* at 73 (citing Ex. 1003 ¶ 329).

Patent Owner relies on its arguments for claim 15 with respect to the asserted ground of unpatentability premised on Watterson and Hurwitz. PO Resp. 62. In its Reply, Petitioner similarly relies on its arguments for claim 15 with respect to the asserted ground premised on Watterson and Hurwitz. Reply 31. We these address these arguments above in section III.D.5. In its Sur-reply, Patent Owner makes arguments for claim 15 (Sur-reply 9–11), and we also address these arguments above in section III.D.5.

After considering the parties' arguments and evidence and for the reasons set forth in section III.D.5, we are persuaded that it would have been obvious to order Hurwitz's exemplary display by the participants' ranking with respect to a performance parameter to result in the leaderboard recited in claim 15. Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 15 would have been obvious in view of Hurwitz, Garcia, and Martens.

6. *Claim 16*

Petitioner contends claim 16 requires two live participants because the recited live class participant content appears to refer to a live participant other than the recited first user. Pet. 74. With this understanding of the scope of claim 16, Petitioner argues its proposed combination of the teachings of Hurwitz, Garcia, and Martens would result in comparing performance parameters for a live user and multiple previously-recorded users at a plurality of points in time in a class on a leaderboard. *Id.* Petitioner also argues Martens teaches synchronizing prior performances with a live performance and generating a display comparing the prior and live performances as if they were occurring at the same time. *Id.* According to Petitioner:

Though Martens does not expressly state that two live users may participate in the same event, it was obvious to a POSITA that the events in Martens would work properly with multiple live users because the same well-known principles of synchronizing the performance data for comparative display at the same point in an event apply regardless of the number of live or archived users are involved.

Id. (citing Ex. 1003 ¶ 333). Petitioner further argues "it is also obvious that comparison can be made in the form of a leaderboard as required by claim

15 for an archived class that includes two live users.” *Id.* at 74–75.

Petitioner additionally argues duplicating users is *prima facie* obvious. *Id.* at 74.

Patent Owner argues Petitioner’s arguments are conclusory and incorrect. PO Resp. 63–64. Patent Owner asserts “[Petitioner] does not explain how two users on two of its combination’s exercise devices could simultaneously select the same program.” *Id.* at 63. Patent Owner also asserts that Martens would not work with two live users at the same time. *Id.* at 63–64. According to Patent Owner, Martens teaches a single live user who logs onto an exercise device and chooses from a list of saved workouts, and Martens further teaches that, during a workout, the live user’s workout data is not shared but rather recorded and stored. *Id.* (citing Ex. 1006, 12:52–13:2; Ex. 2002 ¶¶ 119–120).

Petitioner replies that Patent Owner wrongly asserts that Martens would not work with two live users at the same time. Reply 31. According to Petitioner “Martens teaches its ‘system may work in an equivalent fashion, *in real-time competitions*, and with minor adjustments, for many different cardiovascular exercise machines.’” *Id.* (quoting Ex. 1006, 4:21–23) (citing Ex. 1056 ¶ 28). Petitioner further replies that Patent Owner incorrectly assumes Martens’s entire system is being bodily incorporated into the proposed combination. *Id.* Per Petitioner:

Hurwitz already discloses synchronizing multiple live users’ performance parameters during a live class. Martens discloses the known concept of synchronizing live and archived data for archived classes. It would have been obvious to apply that concept to the Hurwitz/Garcia system to offer Hurwitz’s same parameter display for live and archived classes.

Id. (citing Pet. 49). Petitioner also replies “it was obvious to a POSITA that Martens’[s] teaching of synchronizing live and archived data would work properly with multiple ‘live’ users because the same synchronization principles apply regardless of the number of users.” *Id.* at 32 (citing Pet. 49, 74).

In response, Patent Owner contends that Petitioner’s arguments in its Reply introduce a new theory of obviousness. Sur-reply 27. Patent Owner further contends that the newly-cited portion of Martens regards its “single local server” embodiment, and that this embodiment is incompatible with Petitioner’s arguments regarding remote users. *Id.* (citing Ex. 1006, 4:13–24). Patent Owner also contends Petitioner, in its Petition, relies on Martens’s embodiment shown in Figure 8, which prohibits live-on-live competition by utilizing, for each client, a separate local computer that downloads historical data and only sporadically uploads newly-generated data. *Id.*

Initially, we disagree with Patent Owner that Petitioner’s arguments in its Reply amount to a new theory of obviousness. Although, in its Reply, Petitioner may be citing to a different embodiment of Martens that has a particular implementation for synchronizing live and archived performance parameters, Petitioner is not proposing to combine Martens’s implementation of its synchronization technique with the teachings of Hurwitz and Garcia. Rather, Petitioner proposes to combine Martens’s synchronization technique with the exercise system resulting from the combination of Hurwitz and Garcia. Pet. 50 (arguing “implementing Martens’s synchronization techniques in the modified Hurwitz system would provide a coherent display to users”).

Moreover, as Petitioner argues, Martens teaches its system may work, in an equivalent fashion, in real-time competitions. Ex. 1006, Abstract, 4:21–25. Dr. Jeffay testifies how Petitioner’s proposed implementation of Martens’s synchronization technique in the exercise system resulting from the combination of Hurwitz and Garcia would provide the synchronization of live and archived performance parameters for two live users. Specifically, Dr. Jeffay testifies “a POSITA would understand that live comparisons could be shared by storing the data of live competitors in real-time on a server rather than locally to facilitate live comparisons.” Ex. 1056 ¶ 28. In view of Dr. Jeffay’s experience with providing multi-media content for real-time synchronous interaction (Ex. 1003 ¶ 41), we find this testimony credible.

With Martens’s teaching that its system may work in real-time competitions and Dr. Jeffay’s explanation as to how the implementation of Martens’s synchronization technique in the exercise system resulting from the combination of Hurwitz and Garcia would provide the synchronization of live and archived performance parameters for two live users, we are persuaded a POSITA would have combined the teachings of Hurwitz, Garcia, and Martens as Petitioner proposes to result in the claimed subject matter with a reasonable expectation of success. Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 16 would have been obvious in view of Hurwitz, Garcia, and Martens.

7. *Claim 17*

Petitioner argues “[t]his claim adds the words that the leaderboard is ‘synchronized’ but claim 15 already requires ‘displaying performance parameters at the same point in the selecting cycling class.’” Pet. 75 (citing

Ex. 1003 ¶ 336). Petitioner relies on its arguments for claims 15 and 16 and maintains that its combination of Watterson and Hurwitz would result in the subject matter of claim 17 for the same reasons. *Id.*

Patent Owner asserts Petitioner's arguments for claim 17 do not remedy the defects in its arguments for independent claim 1, and Patent Owner relies on its arguments for independent claim 1 for claim 17. PO Resp. 62; Sur-reply 22–27. We address Patent Owner's arguments for independent claim 1 above in section III.E.3, and, for the reasons set forth in that section, we find Petitioner has shown, by a preponderance of the evidence, that the subject matter of independent claim 1 would have been obvious in view of Hurwitz, Garcia, and Martens.

After considering the parties' arguments and evidence, we find Hurwitz and Garcia support Petitioner's arguments identifying the limitations of claim 17 in its proposed combination of the teachings of Hurwitz, Garcia, and Martens. Petitioner has shown, by a preponderance of the evidence, that the subject matter of claim 17 would have been obvious in view of Hurwitz, Garcia, and Martens.

8. *Claim 18*

Petitioner argues that Hurwitz discloses a start button to signal the start of a live class, and that Martens teaches synchronizing a user's live performance data with archived data and displaying the live and archived data as if the performances were happening at the same time. Pet. 75 (citing Ex. 1004, 7:56–63, Figs. 2, 15. According to Petitioner, “[i]t is also obvious from at least Hurwitz that a start signal would be used to indicate the beginning of a cycling class (whether the class is live or archived), so that

users’ performance parameters and progress can be compared in a coherent manner.” *Id.* at 75–76 (citing Ex. 1003 ¶ 341).

Patent Owner asserts Petitioner’s asserted obviousness is conclusory. PO Resp. 64. Patent Owner also asserts Martens has no need for a start button to properly synchronize and display data. *Id.*

Petitioner replies that Patent Owner incorrectly asserts that Petitioner is proposing to modify Martens’s synchronization technique to include a start signal. Reply 32. Petitioner further replies:

Petitioner relies on Marten[s] for its teaching of synchronizing data, such that the Hurwitz/Garcia system’s archived classes would use the same comparative display Hurwitz uses for live classes. . . . Hurwitz’s comparative displays discloses a “start signal,” and it was obvious to include it for live and archived classes.

Id. at 32–33 (citing Pet. 49–50, 75).

We agree with Petitioner that it is not proposing to modify Martens’s synchronization technique to include a start signal. Rather, Petitioner proposes to modify Hurwitz, which discloses a start signal, to implement Garcia’s CWI, Garcia’s technique for providing archived video classes, Garcia’s video of a class instructor, and Martens’s synchronization technique. Pet. 43–51; Ex. 1004, 7:50–63; Figs. 2, 15.

As set forth above in section III.E.3, Petitioner has provided persuasive reasoning, supported by rational underpinnings, as to why a POSITA would have combined the teachings of Hurwitz, Garcia, and Martens as Petitioner proposes. Petitioner also has sufficiently identified the start signal recited in claim 18 in its proposed combination of Hurwitz, Garcia, and Martens. Petitioner has shown, by a preponderance of the

evidence, that the subject matter of claim 18 would have been obvious in view of Hurwitz, Garcia, and Martens.

IV. PETITIONER'S MOTION TO EXCLUDE

Petitioner moves to exclude certain portions of Mr. Rutberg's Declaration (Ex. 2004) and Exhibits 2009–2011 and 2014–2019. Mot. 1. Even if we consider the material Petitioner seeks to exclude, we determine Petitioner has proven, by a preponderance of the evidence, that the subject matter of claims 14–18 would have been obvious in view of Watterson and Hurwitz, and that the subject matter of claims 14–18 would have been obvious in view of Hurwitz, Garcia, and Martens. We, therefore, dismiss Petitioner's motion as moot.

V. CONCLUSION

For the reasons above, Petitioner has proven, by a preponderance of the evidence, that the subject matter of claims 14–18 would have been obvious in view of Watterson and Hurwitz, and that the subject matter of claims 14–18 would have been obvious in view of Hurwitz, Garcia, and Martens. Petitioner, therefore, has proven, by a preponderance of the evidence, the unpatentability of claims 14–18 of the '590 patent.

Claims	35 U.S.C. §	References	Claims Shown Unpatentable	Claims Not Shown Unpatentable
14–18	103	Watterson, Hurwitz	14–18	
14–18	103	Hurwitz, Garcia, Martens	14–18	
Overall Outcome			14–18	

VI. ORDER

In consideration of the foregoing, it is:

ORDERED that claims 14–18 of the '590 patent have been shown to be unpatentable;

FURTHER ORDERED that, pursuant to 35 U.S.C. § 318(b), upon expiration of the time for appeal of this Decision or the termination of any such appeal, a certificate shall issue canceling claims 14–18; and

FURTHER ORDERED that, as this is a Final Written Decision, a party seeking judicial review of the Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

IPR2020-01187
Patent 10,022,590 B2

FOR PETITIONER:

Barry J. Schindler
Heath J. Briggs
James L. Ryerson
GREENBERG TRAURIG, LLP
schindlerb@gtlaw.com
briggsh@gtlaw.com
ryersonj@gtlaw.com

FOR PATENT OWNER:

Jonathan M. Strang
Lawrence J. Gotts
Dale Chang
Joseph C. Akalski
Kimberly Q. Li
LATHAM & WATKINS LLP
jonathan.strang@lw.com
lawrence.gotts@lw.com
dale.chang@lw.com
joe.akalski@lw.com
kimberly.li@lw.com