

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

LULULEMON ATHLETICA CANADA INC. AND LULULEMON USA INC.,

Petitioner,

v.

NIKE, INC.,

Patent Owner.

Case IPR2023–00424

Patent No. 10,923,225

PATENT OWNER’S RESPONSE UNDER 37 C.F.R. § 42.120

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2002	Excerpt from Wiley Electrical and Electronics Engineering Dictionary, IEEE Press (2004)
2003	Excerpt from Oxford Dictionary of Computing (6th ed. 2008)
2004	Declaration of Scott McLean, Ph.D.
2005	Deposition Transcript of Henry H. Houh (dated October 5, 2023)

I. INTRODUCTION

Nike, Inc. (“Nike”) is the owner of U.S. Patent No. 10,923,225 (Ex. 1001, “’225 patent”). Nike submits this Response to the Petition of lululemon athletica canada inc. and lululemon usa inc. (collectively, “lululemon”) challenging the patentability of claims 1–10 and 12–19 (the “Challenged Claims”). lululemon has failed to demonstrate by a preponderance of the evidence that any claim of the ’225 patent is unpatentable.

The ’225 patent relates to a method for controlling workout equipment with data collected from a sensor device or performance monitoring system. lululemon challenges the claims on five grounds. Ground 1 alleges anticipation by Acres (Ex. 1002). Ground 2 alleges obviousness over Acres. Ground 3 alleges obviousness over Acres in view of Pyles (Ex. 1003). Ground 4 alleges obviousness by Abbondanza (Ex. 1004). Ground 5 alleges obviousness over Abbondanza in view of Pyles.

In its Institution Decision (“DI”), the Board asked the parties to submit proposed constructions for the claim term “data.” DI, 9–10. The ordinary and customary meaning of the term “data,” as it appears in the ’225 patent, is “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.” This ordinary meaning is consistent with technical

dictionaries. Under this proper construction of “data,” lululemon has not shown the unpatentability of any Challenged Claim.

None of the cited art, alone or in combination, teaches or suggests a system that transmits “data” from a “sensor” to a piece of workout equipment, as recited in the Challenged Claims. *See* claims 1, 12. In Grounds 1–3, rather than pointing to the transmission of “data” by a “sensor,” lululemon points to transmission of “commands” generated by Acres’s “Bug,” an action taken *after* the “Bug” receives and processes heart rate data. And in Grounds 4–5, lululemon similarly points to transmission of “instructions” generated by Abbondanza’s “base unit,” an action taken *after* the base unit receives and processes heart rate data. A skilled artisan viewing the ’225 patent would understand that these “commands” and “instructions” are much different from “data.” Oxford Dictionary of Computing (6th ed. 2008), Ex. 2003, 4 (“The distinction between program (instructions) and data is a fundamental one in computing.”). This gap in the prior art undermines all of lululemon’s asserted grounds.

lululemon’s arguments concerning Abbondanza fail for another reason. As the Board correctly noted, lululemon improperly relied on the *combination* of Abbondanza’s pulse rate sensor and base unit to allegedly meet the claimed “sensor.” lululemon’s argument, however, is incompatible with the claims, which recite a single “sensor” device performing the claimed steps.

For at least these reasons, and as discussed further below, lululemon has not shown by a preponderance of the evidence that any claim of the '225 patent is unpatentable.

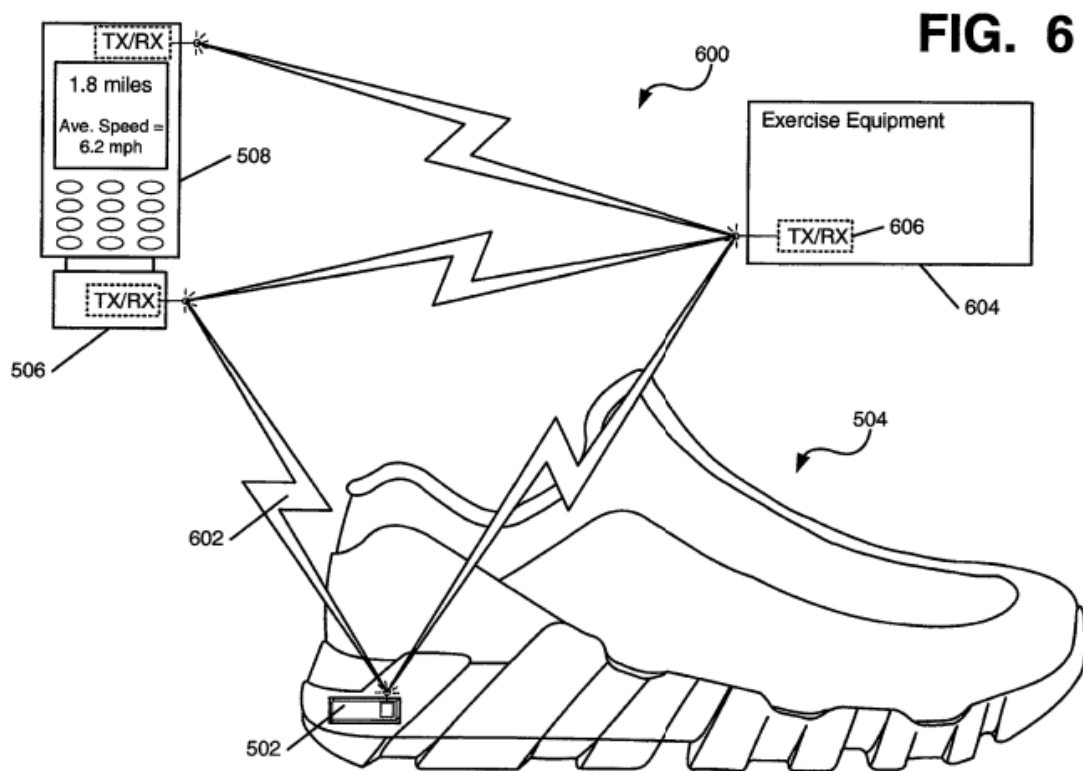
II. BACKGROUND

A. The '225 Patent

The '225 patent, titled “Athletic Performance Sensing and/or Tracking Systems and Methods,” issued on February 16, 2021. The claims of the '225 patent are directed to using a sensor device or performance monitoring system to control workout equipment. Ex. 1001, Abstract. The '225 patent explains that prior art monitoring systems “have deficiencies, for example, in their portability, convenience, customizability, and/or user friendliness.” *Id.*, 2:14–16. The '225 patent also explains that prior art performance monitoring systems were able to present data and information to users, but did not control the workout equipment. *Id.* at 41:5–46. Accordingly, the '225 patent improves on the prior art by adapting the performance monitoring system to “send information to the exercise equipment 604, e.g., for display by the exercise equipment” and/or to control the system. *Id.*, 20:1–6.

The claimed methods and systems are used in “any type of athletic event, exercise, training, routine, or the like, including events performed as training exercises, events performed as part of actual competitions, etc.” *Id.*, 4:19–22.

Figure 6 below illustrates an exemplary embodiment showing electronic communications between an athletic performance sensing system 600 and external exercise equipment 604 in accordance with the claimed invention. *Id.*, 3:44–47.



Id., Fig. 6. As illustrated, “any or all of the [sensing] module 502, interface device 506, and/or electronic device 508 [e.g., a music player or cellular phone] may be configured to exchange data with one or more pieces of exercise equipment 604 or other things” *Id.*, 17:51–55, 19:34–37. Data collected via the sensing module 502 (i.e. a “sensor”) can thus be transmitted directly to a piece of workout equipment 604. And, most importantly for the purposes of this proceeding, “[d]ata collected as a workout progresses” may be used to “control the exercise equipment

or other workout or athletic performance devices (e.g., to set or change intensity or resistance levels, to shorten or lengthen workout times, etc.).” *Id.*, 19:61–65.

Independent claims 1 and 12 are reproduced below:

1. A method comprising:

[1A] establishing, by a sensor device, data communication with a piece of workout equipment;

[1B] transmitting, by the sensor device and to the piece of workout equipment, a first set of data for operating a first function of the piece of workout equipment; and

[1C] transmitting, by the sensor device and to the piece of workout equipment, a first set of activity data corresponding to an activity performed by a user during a first time period, wherein the piece of workout equipment is configured to display the first set of activity data.

12. An athletic activity tracking system comprising:

[12A] a piece of workout equipment comprising a display device; and

[12B] a first sensor to measure an athletic performance of a user,

[12C] wherein the first sensor is programmed and adapted to:

[12C](i) establish data communication with the piece of workout equipment;

[12C](ii) transmit, to the piece of workout equipment, a first set of data for operating a first function of the piece of workout equipment; and

[12C](iii) transmit, to the piece of workout equipment, a first set of activity data corresponding to an activity performed by a user during a first time period, wherein the piece of workout equipment is configured to display, via the display device, the first set of activity data.

B. Overview of the Alleged Prior Art References

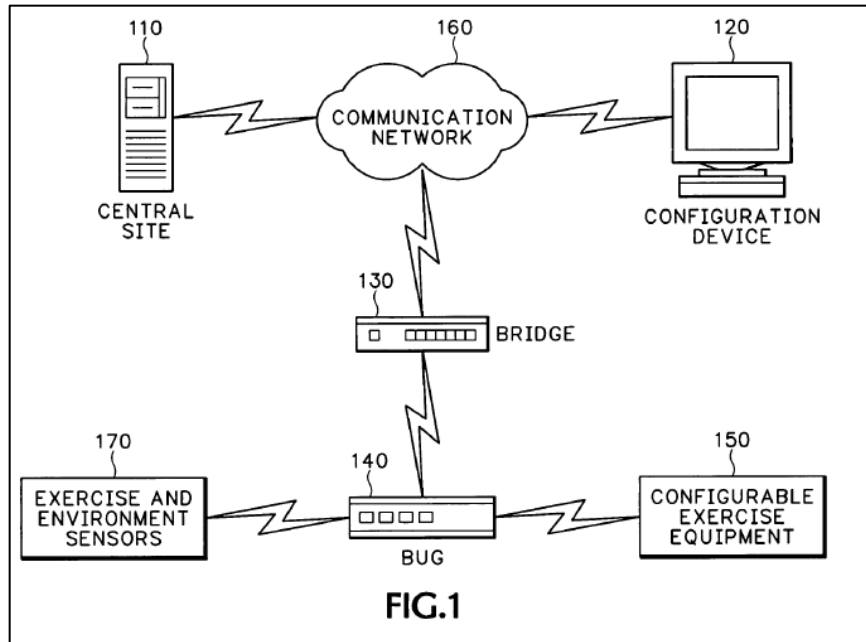
1. Acres

U.S. Patent Publication No. 2005/0070809 (Ex. 1002, “Acres”), titled “System For Regulating Exercise and Exercise Network,” was published on March 31, 2005. Acres is directed to “an automatic system for configuration, direction and recording of exercise program for an individual, based upon the attained heart rate of that person during an exercise period.” Ex. 1002, Abstract. Acres teaches that “[a] key metric to exercise is heart rate.” *Id.*, [0005]. “Once a maximum recommended heart rate is determined, fitness goals are set that specify a particular target duration of exertion at a heart rate that is some fraction of the maximum rate.” *Id.*

According to Acres, if an exerciser sought to maintain a target heart rate, the prior art required them to repeatedly look at a display in communication with a heart rate monitor. *Id.*, [0008]. The user would then be required to manually “adjust[] her exertion level to stay within a target exertion zone.” Acres purports to improve over the prior art by “eliminat[ing] the need for exercisers to calculate appropriate heart rate targets or to monitor heart rate exertion levels during exercise sessions.” *Id.*,

[0012]. Acres discloses a “Bug”—an electronic hardware component worn by the user—which communicates with an exercise network. *Id.*, [0023].

Figure 1 depicted below shows an overview of the exercise network disclosed by Acres:



Id., Fig. 1. The “central site 110 can include a computer system, such as a personal computer (PC),” *id.*, [0033], and “maintains an account for each individual exerciser . . . includ[ing] information regarding the exerciser’s profile,” *Id.*, [0035]. The exerciser’s profile may include “age, fitness level, maximum heart rate, current workout regimen, exercise machine configurations and an exercise log.” *Id.*

Acres explains that “[t]ypically, the Bug 140 is worn on the clothing or held in a pocket of the person exercising.” *Id.*, [0047]. “The Bug is capable of wirelessly communicating with an external heart rate monitor or the Bug can have a heart rate

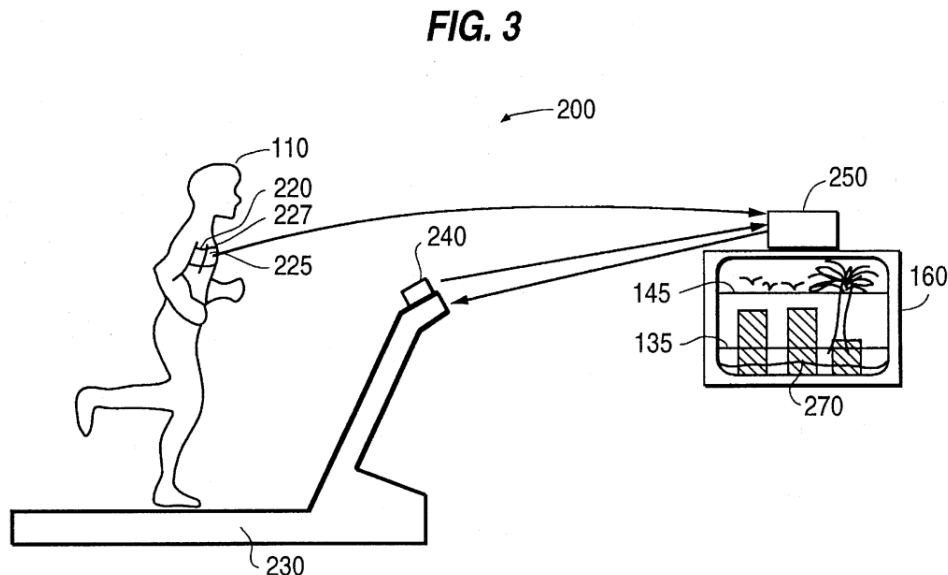
monitor integrated within itself.” *Id.*, [0025]. The “Bug is capable of configuring and monitoring exercise performance on compatible exercise equipment,” based on the exerciser’s heart rate. *Id.*, [0028]. Specifically, the “Bug transmits signals to the exercise machine to increase or decrease the exercise workload in accordance with the dictates of the exercise program it carries and the current heart rate of the exerciser.” *Id.*, [0029]. As the user exercises while wearing the Bug, “[t]he current exertion level is compared against a previously calculated exertion goal and the user is instructed to increase, decrease, or maintain her exertion level,” based on the target heart rate. *Id.*, [0012].

2. Abbondanza

U.S. Patent No. 5,527,239 (Ex. 1003, “Abbondanza”), titled “Pulse Rate Controlled Exercise System,” issued on June 18, 1996. Abbondanza is directed to “exercise devices and systems that . . . are controlled via the measurement of a user’s heart or pulse rate.” Ex. 1003, 1:26–30. Abbondanza explains that the amount of effort a person must put forth to obtain certain exercise “directly relates to that person’s heart rate during his or her exercise regimen.” *Id.*, 1:63–66. For instance, a person exercising at 50–60% of their maximum heart rate is in the fat burning range. *Id.*, 2:5–14. But according to Abbondanza, prior art exercise devices did not provide sufficient information for the user to determine if their heart rate was within the target heart rate range. *Id.*, 2:62–67, 3:27–32. Abbondanza purportedly solved

this problem by providing “a pulse controlled exercise system” that allows a user to “constantly be aware” of their pulse rate throughout their workout “by displaying the user’s pulse rate on a monitor.” *Id.*, 5:1–6.

lululemon relies on Abbondanza’s embodiment depicted in Figure 3.



Id., Fig. 3. In this embodiment, the user 110 is wearing a chest belt 220 which is equipped with a pulse rate sensor device 225. *Id.*, 10:59–64. The sensor device senses the user’s pulse rate, and an infrared pulse rate transmitter 227 transmits the pulse rate to base unit 250. *Id.*, 10:59–64. The base unit 250 “determines if the user’s pulse rate is within that user’s target heart rate range and instructs [the] treadmill device 230 to either speed-up or slow-down ultimately to cause the user to either work harder ... or work softer....” *Id.*, 10:65–11:8, 11:10–22. In addition,

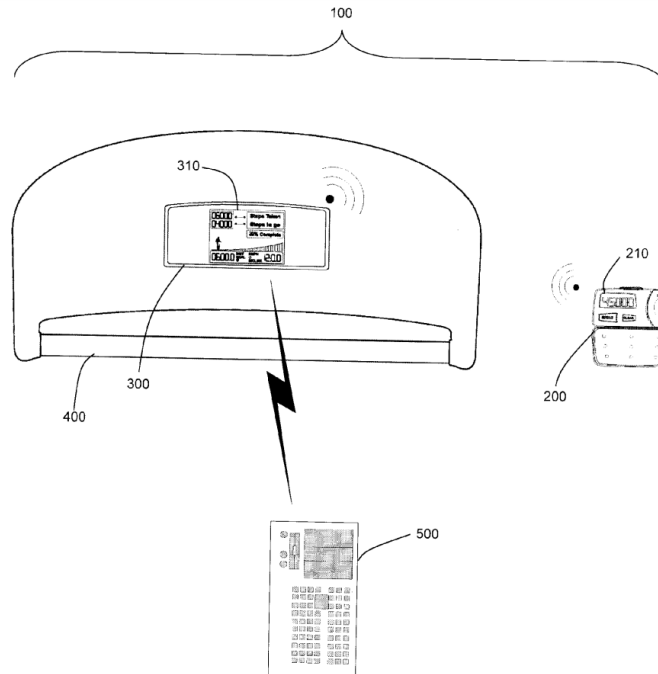
the “base unit 250’s controller will cause the user’s pulse rate to be displayed on monitor 160.” *Id.*, 11:22–24.

3. Pyles

U.S. Patent Application Publication No. 2005/0272564 (Ex. 1004, “Pyles”), titled “Exercise Apparatus and Method for Tracking Number of Steps,” was published on December 8, 2005. Pyles is directed to solving the problem of “enabling accurate tracking of the cumulative total steps achieved both on and off of the exercise machine with minimal effort on the part of the person performing the exercise.” Ex. 1004, [0002].

Pyles purportedly solves this problem by using a step counter that continually tracks a cumulative number of steps taken by the user throughout the day. *Id.*, [0027]. When the user begins using exercise machine 400, the step counter 200 sends the number of cumulative steps that the user has already taken so far to the console 300. *Id.*, [0029]. The step counter then continually detects the steps taken by the user while on the exercise machine 400 and periodically communicates the step count data to the console 300 throughout the workout. *Id.*, [0029]–[0030], [0037]. The console display 310 shows the number of steps taken and the remainder number of steps needed for the user to complete their goal number of steps. *Id.*, Fig. 4, [0039].

Figure 5 below is an embodiment of Pyles comprising a step counter 200, console 300 of exercise machine 400, and “memory means 500 for storing user-specific historical data, that is, data on cumulative step count 312 by date by time period or the like.” *Id.*, [0024], [0047].



Id., Fig. 5. Pyles also discloses that the memory means 500 provides for storage of historical data by a user in addition to date and time. *Id.*, [0050]. The user’s step counter 200 communicates a unique user ID to the console 300 when the exercise machine 400 is used. *Id.*

III. LEGAL STANDARDS

lululemon has “the burden of proving a proposition of unpatentability by a preponderance of the evidence.” 35 U.S.C. § 316(e); *In re Magnum Oil Tools Int’l, Ltd.*, 829 F.3d 1364, 1375 (Fed. Cir. 2016).

A. Anticipation

As to its anticipation grounds, lululemon must prove that “the four corners of a single, prior art document describe every element of the claimed invention” in the same specific “arrange[ment] as in the claim.” *See Net MoneyIN, Inc., v. Verisign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008). To be anticipatory, a reference must not only explicitly or inherently disclose every claimed feature, but those features must also be “arranged as in the claim.” *Id.*, 1369–71. A claim feature is only inherent if it is necessarily present. *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 1295 (Fed. Cir. 2002); *Allergan, Inc. v. Apotex Inc.*, 754 F.3d 952, 961 (Fed. Cir. 2014) (finding no inherent anticipation where something “may” happen). “[D]ifferences between the prior art reference and a claimed invention, however slight, invoke the question of obviousness, not anticipation.” *Net MoneyIN*, 545 F.3d at 1371.

B. Obviousness

As to its obviousness grounds, lululemon must prove that “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made” to a skilled artisan. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). An obviousness determination must be based on four factual inquiries: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art;

(3) the level of ordinary skill in the art; and (4) objective indicia of nonobviousness. *Id.*, 406 (citing *Graham v. John Deere Co. Kan. City*, 383 U.S. 1, 17–18 (1996)). A party alleging obviousness is “required to place themselves in the minds of those of ordinary skill in the relevant art at the time the invention was made, to determine whether that which is now plainly at hand would have been obvious at such earlier time.” *Millennium Pharms., Inc. v. Sandoz Inc.*, 862 F.3d 1356, 1367 (Fed. Cir. 2017). lululemon must “articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.” *U.S. Well Servs., LLC v. Halliburton Energy Servs., Inc.*, IPR2022-01163, Paper 9 at 10 (PTAB Dec. 20, 2022) (quoting *Magnum Oil*, 829 F.3d at 1380). lululemon cannot rely on conclusory statements or blanket assertions of common sense to fill gaps and missing limitations from the prior art. *Arendi S.A.R.L. v. Apple Inc.*, 832 F.3d 1355, 1362–63 (Fed. Cir. 2016). “It is not the Board’s job to cobble together assertions from different sections of a petition or citations of various exhibits in order to infer every possible permutation of a petitioner’s arguments.” *Microsoft Corp. v. FG SRC, LLC*, 860 Fed. App’x 708, 713 (Fed. Cir. 2021). lululemon’s obviousness arguments “must be made with particularity, not opacity.” *Id.*

lululemon also has the burden to show there would have been some motivation to combine the asserted prior art, and that the proposed combinations would render the patented claims obvious. “Obviousness requires more than a mere showing that

the prior art includes separate references covering each separate limitation in a claim under examination.” *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011) (internal citation omitted). lululemon must show a reasonable expectation of success in making a prior art combination. *See Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016).

The Federal Circuit has found that, even for an obviousness challenge based on a single reference in view of the knowledge of a person of ordinary skill in the art, there must have been be a motivation to make a modification of embodiments shown in that reference and a reasonable expectation that such a modification would have been successful; otherwise a skilled artisan would not have arrived at the claimed combination. *In re Stepan Co.*, 868 F.3d 1342, 1345–46 (Fed. Cir. 2017). In other words, when a gap in a single prior art reference requires filling with the knowledge of one of ordinary skill, there must be a further showing that the skilled artisan would have arrived at the claimed invention. *Id.*

IV. LEVEL OF ORDINARY SKILL IN THE ART

For the purposes of this Response, Nike does not dispute lululemon’s proposed level of skill in the art. Petition, 5.

V. CLAIM CONSTRUCTION

In its Institution Decision, the Board requested further briefing on “the meaning of the term ‘data’ recited in independent claims 1 and 12.” DI, 9. The

parties agree that the ordinary and customary meaning applies. Petition, 6. A POSITA would understand that the ordinary and customary meaning of “data”—as recited in claims 1 and 12 and properly viewed in light of the intrinsic record—means “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.” Ex. 2004, ¶35. This ordinary meaning of “data” is consistent with (1) the claim language of claims 1 and 12 of the ’225 patent; (2) the specification of the ’225 patent; and (3) technical dictionaries.

A. The language of claims 1 and 12 supports Nike’s proposed meaning of “data”

Claims 1 and 12 each recite two types of data: (1) “a first set of data for operating a first function of the piece of workout equipment” (1B and 12C[ii]) and (2) “a first set of activity data corresponding to an activity performed by a user during a first time period” (1C and 12C[iii]). Ex. 1001:45:12–18, 46:16–21. Both instances confirm that the ordinary meaning of “data” in the ’225 patent is “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.”

First, the claim language shows that “data” is factual information that is “sensed or collected.” Both types of claimed data—the “first set of data” and the “first set of activity data”—are sensed or collected by a “*sensor*.” *Id.*, 45:9–20, 46:9–24. A “sensor” is a device that measures or collects factual information. *Id.*,

5:27–30 (describing the “output from the sensor” as including “athletic performance data” such as “speed information, distance information, timing information, heart rate, pulse rate, etc.”); *see also* Ex. 2005, 25:23–26:6. A POSITA viewing independent claims 1 and 12 would thus understand that “data” must be “factual information that is sensed or collected.” Ex. 2004, ¶36.

Second, the claim language shows that “data” is factual information “from which decisions or subsequent actions can be made.” Claim 1 recites “a first set of data for operating a first function of the piece of workout equipment.” Ex. 1001, 45:12–14. Claim 5 recites that the “first function of the piece of workout equipment” includes increasing or decreasing “a time period associated with at least one workout activity in a workout routine.” *Id.*, 45:30–36. Claims 6–8 recite that the “first function of the piece of workout equipment” includes increasing or decreasing a resistance level, workout speed, or incline, respectively, of the piece of workout equipment. *Id.*, 45:37–59. A POSITA viewing independent claims 1 and 12 would thus understand that “data” must be factual information “from which decisions or subsequent actions can be made.” Ex. 2004, ¶37.

Taken together, the claim language confirms that the ordinary meaning of “data” in the ’225 patent is “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.” Ex. 2004, ¶38.

B. The specification supports Nike’s proposed ordinary meaning of “data”

The specification of the ’225 patent confirms that “data” as recited in the claims is “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.”

First, the specification shows that “data” is factual information that is “sensed or collected.” For example, the specification explains that “the present invention relate[s] generally to systems and devices used for athletic performance *sensing, e.g., to measure . . . physical and/or physiological data* associated with an athletic event, an exercise routine, or other physical or athletic performance.” Ex. 1001, 4:13–17 (emphasis added). The sensor device may, for example, “*sense* step count and *data* associated with such activities (e.g., for pedometer type speed and/or distance measuring), GPS *data* (e.g., location and/or altitude *data*, time *data*, etc.), step impact force *data* (e.g., for active impact attenuation control), jump height *data*, or the like.” *Id.*, 9:31–36 (emphasis added). The specification provides dozens of other “examples of potential types of *data* relating to an athletic performance that may be *sensed and/or collected.*” *E.g., id.*, 9:43–49 (emphasis added). A POSITA viewing the claims in view of the specification would thus understand that “data” must be “factual information that is sensed or collected.” Ex. 2004, ¶39.

Second, the specification shows that “data” is factual information “from which decisions or subsequent actions can be made.” For example, the specification

discloses that “data collected as a workout progresses” is used “to control the exercise equipment or other workout or athletic performance devices (e.g., to set or change intensity or resistance levels, to shorten or lengthen workout times, etc.).”). Ex. 1001, 19:61–65. A POSITA viewing the claims in view of the specification would thus understand that “data” must be factual information “from which decisions or subsequent actions can be made.” Ex. 2004, ¶40.

Taken together, the specification confirms that the ordinary meaning of “data” in the ’225 patent is “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.” Ex. 2004, ¶41.

C. Dictionaries confirm Nike’s proposed ordinary meaning of “data”

Contemporaneous extrinsic evidence confirms that the ordinary and customary meaning of “data” is “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.” For example, a contemporaneous technical dictionary, the Wiley Electrical and Electronics Engineering Dictionary (2004), defines “data” as “[f]actual information, such as that derived from observation, experimentation, or calculation, especially that which is used for processing and/or further analysis.” Ex. 2002, 4; *see also* Ex. 2005, 162:2–163:10 (Dr. Houh agreeing that this is “one possible definition ‘data,’” but testifying that the second listed definition is “more applicable to this case”). Technical dictionaries also distinguish “data” from “instructions.” Oxford Dictionary of

Computing (6th ed. 2008), Ex. 2003, 4 (“The distinction between program (instructions) and data is a fundamental one in computing.”); *see also* Ex. 2005, 118:24–119:15 (opining that the invention claimed in the ’225 patent is performed using “basic computer science”); *id.*, 157:17–158:7 (testifying that, “[i]n this type of machine, there are program instructions, and data upon which the program operates, and there is an important difference between the two, because treating one as the other causes the machine not to work correctly”). The Federal Circuit has repeatedly held that “[d]ictionaries, and especially technical dictionaries . . . assist the court in determining the meaning of particular terminology to those of skill in the art of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005) (en banc). Here too, technical dictionaries confirm that a POSITA would understand “data” as recited in claims 1 and 12 to mean “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.” Ex. 2004, ¶¶42–43.

For the reasons above, the ordinary and customary meaning of “data” as recited in the Challenged Claims is “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.” *Id.*, ¶44.

VI. LULULEMON FAILS TO SHOW THAT ANY CHALLENGED CLAIM IS UNPATENTABLE UNDER ANY OF GROUNDS 1–5

lululemon has not met its burden for any Challenged Claim on any ground of unpatentability. Under the proper construction of “data” lululemon cannot show that any Challenged Claim of the ’225 patent is unpatentable. Each ground suffers from

the same fatal flaw: the primary references—Acres (Grounds 1–3) and Abbondanza (Grounds 4–5)—do not disclose a system that transmits “data” from a “sensor” to a piece of workout equipment, as recited in the Challenged Claims. Instead, lululemon points to the transmission of “commands” (Acres) or “instructions” (Abbondanza)—neither of which are transmitted from a “sensor.” But skilled artisans viewing the ’225 patent would understand that “[t]he distinction between program (instructions) and data is a fundamental one in computing.” Oxford Dictionary of Computing (6th ed. 2008), Ex. 2003, 4. *See also* Section V.

lululemon’s arguments with respect to Abbondanza fail for an additional reason—the identified “instructions” are not transmitted by a “sensor.” Instead, the “instructions” that lululemon identifies in Abbondanza are transmitted by a “base unit” to the piece of workout equipment.

For at least these reasons, lululemon fails to show by a preponderance of the evidence that any ground anticipates or renders obvious any Challenged Claim.

A. Ground 1: Lululemon Fails to Show That Acres Anticipates Any Challenged Claim

lululemon fails to show that Acres anticipates claims 1 and 12, and thus any Challenged Claim. Specifically, Acres does not disclose transmitting “a first set of data” from a “sensor” to a piece of workout equipment, as recited in the Challenged Claims. As explained in Section V above, the claimed “data” means “factual

information that is sensed or collected, and from which decisions or subsequent actions can be made.” Acres merely describes “commands” that adjust parameters of an exercise machine. But Acres’s “commands” are not sensed or collected; they are *generated* by a processor *after* the Bug receives and processes the user’s heart rate data from a sensor. Acres thus does not disclose “each and every limitation” of claims 1 and 12, as required for anticipation. *See Net MoneyIN*, 545 F.3d at 1371.

1. lululemon fails to show that Acres discloses transmitting, by the sensor device and to the piece of workout equipment, “a first set of data for operating a first function of the piece of workout equipment,” as recited by claim limitations 1B and 12C[ii]

Limitation 1B recites “transmitting, by the sensor device and to the piece of workout equipment, a first set of data for operating a first function of the piece of workout equipment.” Ex. 1001, 45:12–14. Independent claim 12 recites a similar limitation. *Id.*, 46:16–18. lululemon fails to show that Acres discloses transmitting, by the sensor device and to the piece of workout equipment, “*a first set of data* for operating a first function of the piece of workout equipment.” lululemon instead relies on Acres’s disclosure of “*commands* that adjust parameters of an exercise machine.” *See* Petition, 11–12, 22 (emphasis added). This disclosure is insufficient for the reasons discussed below.

The “commands” that lululemon relies upon in Acres cannot be the claimed “first set of data.” The “commands” in Acres are not transmitted by the sensor, as

the claims require. Ex. 1001, 45:12-14, 46:16-18. The “commands” in Acres are “generated” in the first instance by the “Bug” device, after it receives and processes the data received from the sensor. Ex. 2005, 108:12-110:21; Ex. 1002, ¶89. As the Acres specification discloses, the Bug in Acres sends “commands” only *after* it has received and processed the user’s heart rate data:

If the Bug 601 senses, based upon the exerciser’s heart rate [i.e. “data”], that exertion level should increase because the exerciser’s heart rate is below the target, the Bug 601 sends a command to the treadmill 150 telling it to increase speed by a specific amount.

Ex. 1002, ¶89. When asked to compare the information that is “input” into the Bug and the information that is “output” from the Bug, lululemon’s expert, Dr. Houh, explained that pulse information is input into the bug and then “different outputs are generated” based on “processing” that “determine[s] which of those commands to issue”:

Q: Right. Okay. Can you help me understand the difference between the exercise information that’s input into the Bug, on the one hand, and the commands that are sent from the Bug to the exercise machine, on the other hand?

[clarifying questions omitted]

A: . . . the input are the pulses received from the heart rate sensor, 610 in Acres in this particular example. . . . the input is used to count pulses, count the pulse inputs and they’re filtered and whatnot is described and then the output is generated—different outputs are generated, you know, commanding the treadmill to increase speed by a

specific amount or maintain speed or to slow by a given amount. And there's some processing involved to determine which of these commands to issue.

Ex. 2005, 108:12–110:21; 111:18–22 (“[T]he bug is counting the pulses and going through figuring out and computing the heart rate and then sending the command to the exercise equipment according to what it computed.”). Acres “commands” are themselves the subsequent actions performed in response to the receipt of data, i.e., the “exerciser’s heart rate.” In this way, Acres itself recognizes a distinction between “data” and “commands.” Ex. 2004, ¶¶58–59.

The specification of the '225 patent confirms that “data” in the “first set of data” is different from Acres’s “commands.” The term “command” appears twice in the '225 specification. Ex. 1001, 9:65–10:4; 13:6–9. In both instances, the specification uses “command” to mean something different than “data.” In the first instance, the specification discloses that the system “receives input *data*” in various ways, including “semi-automatically in response to a user’s *command*.” *Id.*, 9:65–10:4 (emphasis added). In the second instance, the specification discloses that the user may provide “voice *commands*” to “control” “system elements.” *Id.*, 13:6–10. Both times, the '225 specification uses “command” to refer to an action taken by the user—not “data,” i.e., “factual information that is sensed or collected, and from which decisions or subsequent actions can be made.” Ex. 2004, ¶60.

The specification of the '225 patent also confirms that, unlike Acres's "commands," the "first set of data" in the claimed invention is not used to generate new "commands" prior to being transmitted to the piece of workout equipment. For example, the specification discloses that data collected via the sensing module 502 (i.e. a "sensor") can be transmitted directly to a piece of workout equipment 604. Ex. 1001, 17:51–55. The specification discloses additional examples of data being transmitted directly to the piece of workout equipment. *E.g., id.*, 19:34–37 ("[d]ata also may be transferred from the user's portable equipment (e.g., [sensing] module 502, interface device 506, and/or electronic device 508) to the exercise equipment or other workout or athletic performance setting 604."), 19:61–64 ("[d]ata collected as a workout progresses (e.g., via [sensing] module 502, etc.) also may be used, if desired, to control the exercise equipment or other workout or athletic performance devices."). Thus, unlike Acres's "commands," the "first set of data" in the claimed invention is not used to generate new "commands" prior to being transmitted to the piece of workout equipment. Ex. 2004, ¶61.

lululemon argues that the "commands" in Acres are the same as "data" in the '225 patent because the '225 patent discloses that the "data" is used to "adjust the parameters of an exercise machine." *See* Petition, 11–12 (citing Ex. 1001, 19:41–46, 54–55, claims 3, 7, 8). While it is true that the "data" in the '225 patent "operat[es] a first function of the piece of workout equipment," *id.*, 45:12–14,

lululemon’s argument overlooks a critical distinction between the ’225 patent and Acres. Unlike the ’225 patent, where the data itself “operate[s] a first function of the piece of workout equipment,” the data in Acres (i.e. heart rate data) does not. Ex. 1002, ¶89. Instead, Acres discloses that heart rate data is collected and processed, and only then is a separate “command” generated and sent to the workout equipment. *Id.* (“If the Bug 601 senses, based upon the exerciser’s heart rate, that exertion level should increase because the exerciser’s heart rate is below the target, the Bug 601 sends a command to the treadmill 150 telling it to increase speed by a specific amount.”); Ex. 2004, ¶62.

For these reasons, the “commands” in Acres are different from the “data” recited in claims 1 and 12 of the ’225 patent. Ex. 2004, ¶63. lululemon thus fails to prove by a preponderance of the evidence that Acres discloses “every element of the claimed invention” and anticipates the Challenged Claims in Ground 1. *See Net Money*, 545 F.3d at 1371.

2. lululemon fails to show that Acres anticipates claims 5 and 14

Claim 5 recites the system of claim 1 “wherein adjusting the one or more settings of the piece of workout equipment comprises one of: increasing a time period associated with at least one workout activity in a workout routine; or decreasing the time period associated with at least one workout activity in the

workout routine.” Ex. 1001, 45:30–36. Claim 14, which depends from claim 13, recites the same limitation. Ex. 1001:46:29–35.

To meet this limitation, lululemon points to a “stop exercise” command in Acres that is provided from the Bug to the user. *See* Petition 17, 23. Ex. 1002, ¶48 (“FIG. 3 illustrates a functional block diagram of an example Bug 400. The Bug 400 includes . . . a mechanism 495 to communicate information to *the user*. Communicated information can include . . . coaching commands such as . . . ’stop exercise.’”). But lululemon’s argument fails because the “stop exercise” command is not “transmit[ed] by the sensor device and to the piece of workout equipment,” as required by the claims. Ex. 1001, 45:12–14. Instead, the “stop exercise” command is transmitted by the “Bug” to the user. Ex. 1002, ¶48. In other words, the command identified by lululemon is not transmitted “to the piece of workout equipment.” Ex. 1001, 45:12–14. Thus, lululemon has not shown that Acres discloses “every element of the claimed invention” in the same specific “arrange[ment] as in the claim.” *See Net Money*, 545 F.3d at 1371. And lululemon has not shown by a preponderance of the evidence that Acres anticipates claims 5 or 14.

B. Ground 2: lululemon Fails to Show that Acres Renders Obvious Any Challenged Claim

In Ground 2, lululemon challenges the patentability of claims 1–8, 10, 12–17, and 19 as obvious over Acres. Petition, 23–27. lululemon’s obviousness arguments

only address dependent claims 5, 10, 14, and 19—lululemon does not provide any new arguments for independent claims 1 and 12. *See* Petition, 23–27. The Federal Circuit has “repeatedly warn[ed]” that a party cannot prove obviousness by relying on “common sense” or conclusory assertions to supply a “missing limitation.” *Arendi*, 832 F.3d at 1362. Thus, for the same reasons set forth in Section VI.A.1—i.e., that Acres does not disclose a system that transmits “data” from a sensor to a piece of workout equipment, as recited in the Challenged Claims—lululemon fails to show by a preponderance of the evidence that Acres renders independent claims 1 and 12 obvious. lululemon’s obviousness challenges as to dependent claims 2–8, 10, 13–17, and 19 fail for the same reasons.

C. Ground 3: lululemon’s Reliance on Pyles as an Additional Reference In Ground 3 Does Not Cure the Deficiencies with Respect to the Independent Claims in Grounds 1 and 2

In Ground 3, lululemon alleges that Acres in view of Pyles renders obvious claims 9 and 18. Petition, 28–29. lululemon does not rely on Pyles to support its obviousness arguments for any other claims. *Id.* Because lululemon has failed to show that independent claims 1 and 12 are obvious in view of Acres, *see* Section VI.A.1, its obviousness arguments with respect to dependent claims 9 and 18 necessarily fail—regardless of what Pyles discloses.

lululemon’s Ground 3 also fails because lululemon has not shown that a POSITA would have been motivated to combine Acres and Pyles to arrive at claim

9 and 18. lululemon argues that a POSITA would have been motivated to replace Acres’s storage at a “central site” with Pyles “storage of user-specific historical data at an exercise machine.” Petition, 29. lululemon argues that Pyles’ local storage in an exercise machine “offers a simplified structure by reducing the number of separate components and eliminates the need to transfer activity data over an internet connection.” *Id.*, 31. lululemon is wrong for at least three reasons. Ex. 2004, ¶¶64, 68.

First, lululemon’s proposed modification would render the claimed method and system less portable by tying the user, through their data, to a specific piece of workout equipment. *Id.*, ¶65. In other words, lululemon’s proposed modification eliminates the ability to port data from that piece of equipment to other pieces of equipment, or similarly integrate and aggregate data from different pieces of workout equipment. *Id.* As a result, a POSITA would understand that by storing the data at the level of the exercise machine, the utility of those data beyond that that machine is lost. *Id.* Second, by storing data on a single piece of equipment versus a central site, a POSITA would understand that the risk of data loss is increased, since it is directly dependent on the integrity and security of that machine. *Id.*, ¶66. Third, a POSITA would understand that data aggregation and storage on such a central cite promotes broader data access to more pieces of equipment and more people. *Id.*, ¶67.

D. Ground 4: lululemon Fails to Show that Abbondanza Renders Obvious Any Challenged Claim

In Ground 4, lululemon asserts that Abbondanza renders obvious claims 1–5, 7, 10, 12–14, 16, and 19. *See* Petition, 32–46. lululemon’s Ground 4 fails for at least two reasons. First, Abbondanza does not disclose a system that transmits “a first set of data” from a “sensor” to a piece of workout equipment, as recited in the Challenged Claims. Abbondanza merely discloses the transmission of “instructions” that adjust parameters of an exercise machine. But Abbondanza’s “instructions” are not sensed or collected; they are *generated* by a processor upon receipt of the user’s pulse rate from a sensor. Thus, like Acres’s “commands” in Ground 1, Abbondanza’s “instructions” are not equivalent to the claimed “data.”¹ Second, lululemon fails to identify in Abbondanza a “sensor” that establishes “data communication” with the piece of workout equipment. Instead, lululemon improperly points to two separate components disclosed in Abbondanza: a pulse rate sensor and a base unit. For these reasons, lululemon fails to prove by a

¹ The Board recognized the similarity between the “instructions” in Abbondanza and the “commands” in Acres. DI, 21 (“Abbondanza’s ‘instructions’ transmitted by its base unit 250 to treadmill 230 for controlling the treadmill are analogous to Acres’s ‘commands’ sent for controlling a treadmill.”); Ex. 2005, 104:5–105:3 (recognizing the same).

preponderance of the evidence that the Challenged Claims are obvious in view of Abbondanza.

1. lululemon has not shown that Abbondanza teaches or suggests “transmitting, by the sensor device and to the piece of workout equipment, a first set of data for operating a first function of the piece of workout equipment” as recited by claims 1B and 12C[ii]

Limitation 1B recites “transmitting, by the sensor device and to the piece of workout equipment, a first set of data for operating a first function of the piece of workout equipment.” Ex. 1001, 45:12–14. Independent claim 12 recites a similar limitation. *Id.*, 46:16–18. lululemon fails to show that Abbondanza discloses transmitting, by the sensor device and to the piece of workout equipment, “*a first set of data* for operating a first function of the piece of workout equipment.” lululemon instead relies on Abbondanza’s disclosure of “instructions” from the base unit that “instruct treadmill device 230 to either speed-up or slow-down.” *See* Petition, 35 (citing Ex. 1003, 11:16–23). This disclosure is insufficient for the reasons discussed below.

The “instructions” that lululemon relies upon in Abbondanza cannot be the claimed “first set of data.” The “instructions” in Abbondanza are not transmitted by the sensor, as the claims require. Ex. 1001, 45:12–14, 46:16–18. The “instructions” in Abbondanza are “generated” in the first instance by the “base unit,” but only after the base unit receives and processes the data from the pulse rate transmitter. Ex.

2005, 25:23-26:6, 28:17-20, 30:17-25. Abbondanza discloses that a “controller that resides in base unit 250 processes” “the user’s pulse rate received via infrared pulse rate transmitter 227.” Ex. 1003, 11:14-16. After processing the pulse rate information, the base unit “instructs treadmill device 230 to either speed-up or slow-down.” *Id.*, 11:16-23.

lululemon’s expert, Dr. Houh, confirmed that Abbondanza’s “instructions” are different from the claimed “first set of data.” Dr. Houh admitted that Abbondanza’s instructions are newly “generated” by base unit 250 *after* the base unit receives heart rate data from a sensor:

Q. Okay. So base unit 250, in Abbondanza, receives the pulse information that’s sensed by the pulse rate sensor and transmitted by the pulse rate transmitter to base unit 250. Base unit 250 then performs certain processing steps. And the two examples of processing that we discussed are, one, generating instructions based on an algorithm and then, two, converting the pulse information into something that can be displayed on a monitor? Is that accurate?

MS. NGUYEN. Objection; form.

A. So far, I don’t -- I don’t see -- I -- I --I -- That seems fair to me.

Ex. 2005, 61:1-14. In other words, Dr. Houh explained, the base unit receives pulse rate data as an “input”; the base unit processes the pulse rate data; and then the base unit “generates” “instructions” as an “output.” *See also id.*, 57:12-58:2; 44:21-45:4, 46:25-47:65, 58:3-15. Dr. Houh further testified that the instructions generated by

Abbondanza’s base unit must be “specific to the kind of motor control inner capabilities of different exercise equipment.” *Id.*, 78:13–79:25 (“the instructions for a -- a treadmill motor would be -- would be different than instructions for the stepper.”). Both parties’ experts thus agree that Abbondanza’s “instructions” are vastly different from pulse rate data. *Id.*; Ex. 2004, ¶¶69–70.

The specification of the ’225 patent also confirms that, unlike Abbondanza’s “instructions,” the “first set of data” in the claimed invention is not used to generate new “instructions” prior to being transmitted to the piece of workout equipment. For example, the specification discloses that data collected via the sensing module 502 (i.e. a “sensor”) can be transmitted directly to a piece of workout equipment 604. Ex. 1001, 17:51–55. The specification discloses additional examples of data being transmitted directly to the piece of workout equipment. *E.g., id.*, 19:34–37 (“[d]ata also may be transferred from the user’s portable equipment (e.g., [sensing] module 502, interface device 506, and/or electronic device 508) to the exercise equipment or other workout or athletic performance setting 604.”), 19:61–64 (“[d]ata collected as a workout progresses (e.g., via [sensing] module 502, etc.) also may be used, if desired, to control the exercise equipment or other workout or athletic performance devices.”). Thus, unlike Abbondanza’s “instructions,” the “first set of data” in the claimed invention is not used to generate new “instructions” prior to being transmitted to the piece of workout equipment. Ex. 2004, ¶71.

For these reasons, the “instructions” in Abbondanza are different from the “first set of data” recited in claims 1 and 12 of the ’225 patent. Ex. 2004, ¶72. lululemon thus fails to prove by a preponderance of the evidence that Abbondanza renders obvious any Challenged Claim.

2. lululemon fails to show that Abbondanza teaches or suggests establishing, by a “sensor” device, data communication with a piece of “workout equipment” as recited by claims 1A and 12C[i]

Independent claim limitations 1A and 12C[i] both recite a “sensor” that establishes data communication with the piece of workout equipment. Ex. 1001, 45:10–11, 46:12–15. The Board recognized this important limitation. ID, 22 (“[I]t is the sensor device *itself* that transmits data to the workout equipment.”) (emphasis in original). But lululemon does not identify a “sensor” that establishes data communication with the piece of workout equipment. Instead, lululemon contends that “Abbondanza’s ***base unit*** establishes a data communication with the treadmill.” Petition, 34 (emphasis added); *see also id.* (“A POSITA would have understood that to send ***instructions*** to the treadmill, the ***base unit*** must establish a data communication with the treadmill.”) (emphasis added).

Abbondanza’s base unit is not a “sensor” as recited in the ’225 patent. The specification of the ’225 patent discloses that a “sensor” is a device that senses or collects a parameter or condition. For example, the specification discloses “one or more sensors that ***sense*** physical or physiological characteristics relating to user

participation in the workout routine.” Ex. 1001, 5:20–24 (emphasis added). The specification also discloses “sensing devices” 102(a), 102(b), 102(c), and 102(d) that “*sense data* associated with the athletic performance, including, for example, physical or physiological data associated with the athletic performance.” *Id.*, 9:23–39; Fig. 1. Abbondanza’s base unit, on the other hand, “processes” “the user’s pulse rate received via [a separate] infrared pulse rate transmitter. Ex. 1003, 11:11–16; Ex. 2005, 61:1–14; 27:11–20; 28:17–20 (“that pulse rate information is received and processed by the controller in the base unit 250, [] wherever it happens to be”), 30:17–25; Ex. 2005, 25:23–26:6, 28:17–20, 30:17–25. Abbondanza’s base unit does not sense any physical or physiological characteristics relating to the user’s participation in the workout. *Id.*, 11:11–25. Thus, Abbondanza’s base unit is not a “sensor.” Ex. 2004, ¶¶73–74.

Seemingly admitting that Abbondanza’s “base unit” is not a “sensor,” lululemon relies on two separate components of Abbondanza to meet the “sensor” limitation of claims 1 and 12. lululemon argues that “Abbondanza’s base unit *and* pulse rate sensor are *together* a sensor device.” Petition, 34 (emphasis added). lululemon’s argument is legally improper. *See Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, “the clear implication of the claim language” is that those elements are “distinct component[s]” of the patented invention.”). As the Board

correctly noted, “[i]n Abbondanza, base unit 250 receives signals from pulse rate sensor 225, and then it is the base unit that transmits those signals to treadmill device 230.” ID, 22. lululemon “provides no further explanation” or “citation to evidence” to support its assertion that “Abbondanza’s base unit and pulse rate sensor are together a sensor device.” *Id.*, 22 (citing Petition, 34). Nor does lululemon attempt to argue any obviousness rationale for combining the physically distinct base unit and pulse rate sensor into a single device. *See* Petition, 34–35.

lululemon thus fails to show by a preponderance of the evidence that Abbondanza teaches or suggests a “sensor” device that establishes data communication with a piece of workout equipment, as recited in claim limitations 1A and 12C[i].

3. Abbondanza does not teach or suggest “transmitting, by the sensor device and to the piece of workout equipment, a first set of activity data corresponding to an activity performed by a user” as recited by claims 1C and 12C[iii]

Independent claim limitations 1C and 12C[iii] both recite that the “sensor” transmits to the piece of workout equipment a first set of “activity data” corresponding to an activity performed by a user during a first time period, wherein the piece of workout equipment is configured to display the first set of activity data. Ex. 1001, 45:15–20, 46:19–24. As discussed above, rather than pointing to a “sensor,” lululemon contends that “Abbondanza discloses that the *base unit* ‘will cause the user’s pulse rate to be displayed on monitor 160.’” (Ppetition, 36 (citing

Ex. 1003, 11:22–24)) (emphasis added). But for the reasons discussed above, (1) the component that lululemon identifies as performing the “transmitting”—Abbondanza’s base unit—is not a “sensor,” and (2) the claimed “sensor” is not taught by the *combination* of Abbondanza’s base unit and pulse rate sensor.

Thus, lululemon has not shown by a preponderance of the evidence that Abbondanza renders obvious any Challenged Claim in Ground 4.

4. lululemon fails to show that Abbondanza renders obvious claims 5 and 14

Claim 5 recites the system of claim 1 “wherein adjusting the one or more settings of the piece of workout equipment comprises one of: increasing a time period associated with at least one workout activity in a workout routine; or decreasing the time period associated with at least one workout activity in the workout routine.” Ex. 1001, 45:30–36. Claim 14, which depends from claim 13, recites the same limitation. Ex. 1001:46:29–35.

To meet this limitation, lululemon points to Abbondanza’s base unit “terminating the program in the middle of a workout regimen.” Petition, 40. But as discussed in Section VI.D.2, the component that lululemon identifies as performing the “transmitting”—Abbondanza’s base unit—is not a “sensor” (and the claimed “sensor” is not taught by the *combination* of Abbondanza’s base unit and pulse rate sensor (Ex. 2004, ¶¶73–76)).

lululemon fails for another reason; it fails to show that “terminating an exercise program” is performed in response to transmitting claimed “data.” Instead, lululemon asserts that this operation is “carried out by the base unit’s microprocessor/microcontroller.” But for the reasons discussed in Section XI.D.1, Abbondanza’s base unit transmits “instructions”—not “data.”

As such, lululemon has not shown by a preponderance of the evidence that claims 5 and 14 are unpatentable under Ground 4.

E. Ground 5: lululemon’s Reliance on an Additional Reference in Ground 5 Does Not Cure the Deficiencies with Respect to the Independent Claims in Ground 4

In Ground 5, lululemon alleges that Abbondanza in view of Pyles renders obvious claims 9 and 18. Petition, 45–46. lululemon does not rely on Pyles to support its obviousness arguments for any other claims. *Id.* Because lululemon has failed to show that independent claims 1 and 12 are obvious in view of Abbondanza, *see* Section VI.D.1–3, its obviousness arguments with respect to dependent claims 9 and 18 necessarily fail—regardless of what Pyles discloses.

VII. CONCLUSION

For the reasons set forth above, lululemon fails to prove by a preponderance of the evidence that any of claims 1–10, and 12–19 of the ’225 patent are unpatentable. Nike requests that the Board enter a final written decision affirming the patentability of those claims.

Dated: October 10, 2023

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CERTIFICATE OF COMPLIANCE

The undersigned certifies that this response complies with the type-volume limitations of 37 C.F.R. § 42.24(a)(1)(i). This Response (including figure labels and annotations) contains 8,454 words as calculated by the “Word Count” feature of Microsoft Office 365 Word application, the word processing program used to create it, and manual counting of the annotations in the figures.

The undersigned further certifies that this response complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and typestyle requirements of 37 C.F.R. § 42.6(a)(2)(iii). This Response has been prepared in a proportionally spaced typeface using Microsoft Office 365 Word application in Times New Roman 14 point font.

Dated: October 10, 2023

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CERTIFICATE OF SERVICE

The undersigned hereby certifies service on lululemon, pursuant to 37 C.F.R. § 42.6(e) and by agreement of counsel, by electronic (e-mail) delivery of a true copy of the foregoing **PATENT OWNER'S RESPONSE**, and all supporting exhibits, were served on October 10, 2023 to the following Counsel for lululemon via e-mail:

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