

**United States Patent and Trademark Office
Before the Patent Trial and Appeal Board**

***lululemon athletica inc. et al. v.
Nike, Inc.***

**IPR2023-00348
U.S. Pat. No. 10,188,930**

**Patent-Owner's Presentation
April 4, 2024**

lululemon athletica inc. et al. v. Nike, Inc. IPR2023-00348 Patent No. 10,188,930 Demonstrative Ex. 2006



1. Overview of the '930 Patent and Instituted Grounds

2. Claim Construction

- A. “[first/second] athletic movement”
- B. “[first/second] instructions”
- C. “[first/second] activity data”

3. lululemon Failed to Prove Unpatentability by a Preponderance of the Evidence

- A. Ground 1: lululemon failed to prove Lofi anticipates claims 1 and 5–7
- B. Ground 2: lululemon failed to prove Lofi and Kitagawa render obvious claims 1 and 5–7
- C. Ground 3: lululemon failed to prove Maeueller and Kitagawa render obvious claims 1, 5–7, and 12



Overview of the '930 Patent and Instituted Grounds





Ground	35 U.S.C. §	Claims	Reference(s)
1	102	1 and 5–7	Lofi
2	103	1 and 5–7	Lofi + Kitagawa
3	103	1, 5–7, and 12	Maeueller + Kitagawa



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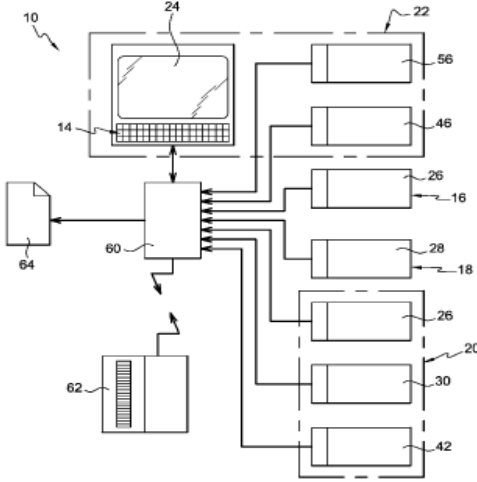
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[Suite sur la page suivante]

(54) Title: DEVICE FOR EVALUATING A PERSON'S PHYSICAL FITNESS

(54) Titre : DISPOSITIF POUR EVALUER L'APTITUDE PHYSIQUE D'UN INDIVIDU



(14) pour permettre d'identifier

(57) Abstract: The invention relates to a device for evaluating the physical fitness of a person comprising an endurance measuring means (16), body composition measuring means (18), muscular strength measuring means (20), means (22) for measuring at least one co-ordination or motricity characteristic, storage means (62) provided with a different population distribution curve for each measurement, means (14) for determining a population group to which the person belongs and processing means (62) for determining a rate for each measurement by comparing a measured value with a distribution curve corresponding to the person's population group.

(57) Abrégé : L'objet de l'invention est un dispositif pour évaluer l'aptitude physique d'un individu caractérisé en ce qu'il comprend : - des moyens (16) de mesure de l'endurance, - des moyens (18) de mesure de la composition corporelle, - des moyens (20) de mesure de la force musculaire, - des moyens (22) de mesure d'au moins une caractéristique relative à la coordination ou à la motricité, - des moyens de stockage (62) comportant pour chaque mesure une courbe de répartition pour différentes populations, - des moyens

[Suite sur la page suivante]

lululemon athletica canada inc. and lululemon usa inc. Exhibit 1002 Page 1



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(54) **Fitness test system**

(57) The present invention relates to a fitness test system for determining a fitness test result indicative of a user's fitness, for a plurality of components of physical fitness such as endurance, strength, flexibility, balance, and body composition. The fitness test system comprises a computing module (1) for accessing a collection of fitness tests and one or more peripheral devices (20-23), the one or more peripheral devices being communica-

tively connected to the computing module, and the one or more peripheral devices being adapted to measure one or more input parameters. The computing module is programmed for upon selection of a fitness test to determine the group of input parameters associated with the fitness tests and based on the determined input parameters to calculate and/or present a fitness test result indicative of a user's fitness related to the associated component of physical fitness.

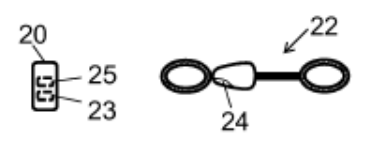
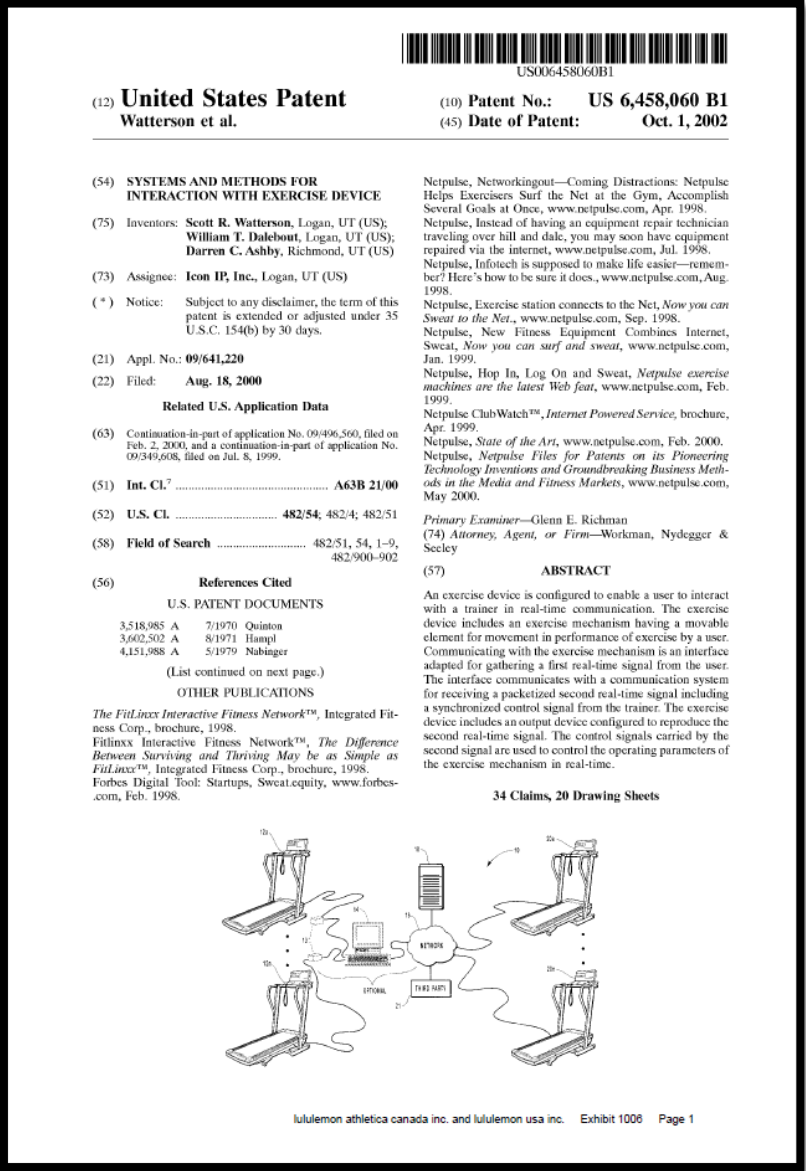


FIG. 2

EP 2 324 762 A1

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lutulemon athletica canada inc. and lutulemon usa inc. Exhibit 1003 Page 1



Kitagawa, Ex. 1004 at Cover



Claim Construction



“[first/second] athletic movement”



What is claimed is:

1. A computer-implemented method comprising:
providing first instructions to a user to perform a first athletic movement;
receiving, from a sensor, first activity data representing the first athletic movement;
calculating with a processor, based on the first activity data, a first combinatory fitness-athleticism score;
providing, in response to a triggering event, second instructions to the user to perform a second athletic movement;
receiving, from the sensor, second activity data representing the second athletic movement;
calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,
wherein the first and the second combinatory fitness-athleticism scores each comprise a fitness sub-score and a separate athleticism sub-score of the user,
wherein the fitness sub-score is calculated, by the processor, using one or more of an endurance fitness attribute, a flexibility fitness attribute and a strength fitness attribute of the user, and
wherein the athleticism sub-score is calculated, by the processor, using one or more of a speed athleticism attribute, an agility athleticism attribute, a reaction athleticism attribute, a power athleticism attribute and a balance athleticism attribute of the user.



Limitations 1[A]–1[F]

1. A computer-implemented method comprising:
providing first instructions to a user to perform a first athletic movement;
receiving, from a sensor, first activity data representing the first athletic movement;
calculating with a processor, based on the first activity data, a first combinatory fitness-athleticism score;
providing, in response to a triggering event, second instructions to the user to perform a second athletic movement;
receiving, from the sensor, second activity data representing the second athletic movement;
calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,

'930 patent, Ex. 1001 at 26:16–30

Nike's Proposed Construction

"athletic movement"

a single type of exercise or athletic activity that may include multiple coordinated movements

Patent Owner's Response, Paper 20 at 20–21

Patent Owner's Sur-Reply, Paper 25 at 2–3



124, shown in FIG. 1A. As used herein, an “athletic movement” includes movements relating to fitness, exercise, flexibility, including movements that may be part of one or more single and multiple participant athletic competitions, exercise routines, and/or combinations thereof.

’930 patent, Ex. 1001 at 4:7–11 (cited in Patent Owner’s Response, Paper 20 at 4)



With reference again to FIG. 3, in block 304, one or more embodiments may instruct a user to perform an athletic movement with predefined criteria. In certain embodiments,

'930 patent, Ex. 1001 at 12:55–57 (cited in Patent Owner's Response, Paper 20 at 4)



activity with predefined criteria. As one example, embodiments may include prompting a first user, such as user 124 shown in FIG. 1, to perform athletic movements, including completing at least one drill and/or exercise. In an example,

'930 patent, Ex. 1001 at 22:51–54 (cited in Patent Owner's Response, Paper 20 at 4)



torso and thigh). For a movement or series of movements (such as an exercise routine), system 100 may define one or

'930 patent, Ex. 1001 at 13:43–44 (cited in Patent Owner's Response, Paper 20 at 4)



a single session. In one embodiment, a workout session or drill may consist of a single athletic activity (e.g., run 10 miles), and sub-scores may be calculated therefrom. Yet in another embodiment, at least a first exercise may be designed to specifically test attributes of athleticism and at least a second exercise may be utilized to specifically test attributes of fitness. In yet another embodiment, a single exercise may be utilized to measure at least one athleticism attribute and at least one fitness attribute. One or more

'930 patent, Ex. 1001 at 23:25–33 (cited in Patent Owner's Response, Paper 20 at 17–18)



prising or consisting of vertical jumps. In one embodiment, the user's performance during the vertical jumps utilized as part of determining endurance may also be used to determine power. As one example, the user's vertical distance

'930 patent, Ex. 1001 at 23:61–64 (cited in Patent Owner's Response, Paper 20 at 20)



(57)

ABSTRACT

Example embodiments may relate to a system, method, apparatus, and computer readable media configured for monitoring a user performing an athletic movement and/or exercise and generating a combinatory fitness athleticism score. The score may comprise a fitness sub-score and a fitness sub-score. The athletic movement may comprise a plurality of drills configured to test a plurality of fitness attributes and/or a plurality of athleticism attributes of the user. At least one of the plurality of fitness attributes may be selected from the group consisting of: endurance, flexibility, strength and combinations thereof; and at least one of the plurality of athleticism attributes may be selected from the group consisting of: speed, agility, reaction, power, balance, and combinations thereof.

'930 patent, Ex. 1001 at Abstract (cited in Petitioner's Reply, Paper 24 at 6)



completing at least one drill and/or exercise. In an example, system 100 may prompt user 124 to perform one or more exercises that are part of a drill. A drill may include a predetermined number of exercises (e.g., pushups, squats, lunges, etc.) where system 100 prompts the user to perform a number of repetitions of each exercise.

'930 patent, Ex. 1001 at 22:54–59 (cited in Petitioner’s Reply, Paper 24 at 3)



attribute and at least one fitness attribute. One or more attribute values may be detected, measured, and/or calculated and utilized as part of determining the fitness sub-score. As shown in FIG. 13, example fitness attributes may

'930 patent, Ex. 1001 at 23:33–35 (cited in Petitioner's Reply, Paper 24 at 3)



6. The method of claim 1, wherein the first instructions and the second instructions include a plurality of drills configured to test a plurality of fitness attributes of the user and a plurality of athleticism attributes of the user.

'930 patent, Ex. 1001 at Claim 6 (cited in Petitioner's Reply, Paper 24 at 4)



a user, including all-day activity of user 124. In this regard,

'930 patent, Ex. 1001 at 8:38 (cited in Petitioner's Reply, Paper 24 at 5)



124, to perform at least one exercise during a workout session. In an example, system 100 may prompt a user to

'930 patent, Ex. 1001 at 12:59–60 (cited in Petitioner's Reply, Paper 24 at 5)



amount of calories burned by a user performing any desired combination of movements. During a workout, a user may

'930 patent, Ex. 1001 at 19:6–7 (cited in Petitioner’s Reply, Paper 24 at 5)



squat, lunge, etc.) and used to determine how many calories a user burned during a workout. System 100 may store or have access to multiple MET tables corresponding to different exercises (e.g., squat, lunge, jumping rope, push up, running, etc.). System 100 may process data from the video

'930 patent, Ex. 1001 at 14:24–28 (cited in Petitioner’s Reply, Paper 24 at 5)



A combinatory score, a component sub-score, or values utilized in determining a score and/or sub-score may be determined based upon a user's physical activity. In one embodiment, values may be calculated or derived from the user's performance during of physical movements with predefined criteria, such as predefined drills or tests. In

'930 patent, Ex. 1001 at 22:43–48 (cited in Petitioner's Reply, Paper 24 at 5)



predefined criteria, such as predefined drills or tests. In accordance with one embodiment, instructions may be provided to a user requesting that the user perform physical activity with predefined criteria. As one example, embodiments may include prompting a first user, such as user 124 shown in FIG. 1, to perform athletic movements, including completing at least one drill and/or exercise. In an example, system 100 may prompt user 124 to perform one or more exercises that are part of a drill. A drill may include a predetermined number of exercises (e.g., pushups, squats, lunges, etc.) where system 100 prompts the user to perform a number of repetitions of each exercise.

Instructions to user 124 may be audible, visual, tactile or combinations thereof. Further, instructions may include demonstrating proper form for an exercise and prompting the user to perform the exercise, such as discussed throughout this disclosure, including requesting that the user perform a personalized workout program. Detection (and/or receipt of an indication of the presence) of one or more devices, such as devices 138, 140 and, or 142, may be

utilized in determining which instructions to provide and/or how to provide instructions to the user 124. In accordance with certain implementations, system 100 may cause the display 136 to present a virtual trainer demonstrating an exercise to instruct the user on proper form, such as but not limited to the embodiments described in relation to FIG. 3, 6 and/or 7. Determinations of values, sub-scores, and the combinatory score may consider a plurality of parameters relating to the user's performance. For example, the user's form, tempo, estimated fatigue, oxygen kinetics, and/or other parameters may be utilized. For example, instructions embodiment may instruct a user to perform a 10 pushups followed by 5 burpees. In one embodiment, if the user performs the pushups and/or burpees too fast or too slow, they may be credited with fewer points or be penalized. In

'930 patent, Ex. 1001 at 23:48–24:15 (cited in Petitioner's Reply, Paper 24 at 5)



Calculation of the combinatory score and/or the sub-scores may be based upon combining a plurality of drill scores. In one embodiment, a plurality of athletic drill scores

'930 patent, Ex. 1001 at 24:63–65 (cited in Petitioner's Reply, Paper 24 at 7)

Dr. Fischer's testimony fails to rebut Nike's construction of "athletic movement"



In its Reply, lululemon relies on certain testimony from Dr. Fischer that has no bearing on the parties' dispute. For example, lululemon points to Dr. Fischer's testimony that "movements, plural, can include more than one drill and/or more than one exercise." Reply, 7 (citing Ex. 2005, 60:21–61:1). Whether or not "movements, plural" includes more than one drill or exercise is irrelevant. The question is whether "athletic movement" means multiple athletic movements. And Dr. Fischer points to no evidence in the specification or elsewhere to support that contention. Nor does Dr. Fischer address the specification's use of distinct terms for a singular "athletic movement" and plural "athletic movements." The Board should thus give no weight to the testimony of Dr. Fischer.

Patent Owner's Sur-Reply, Paper 25 at 10



“[first/second] instructions” (claim 1)



Limitations 1[A]–1[F]	Nike's Proposed Construction
1. A computer-implemented method comprising: providing first instructions to a user to perform a first athletic movement; receiving, from a sensor, first activity data representing the first athletic movement; calculating with a processor, based on the first activity data, a first combinatory fitness-athleticism score; providing, in response to a triggering event, second instructions to the user to perform a second athletic movement; receiving, from the sensor, second activity data representing the second athletic movement; calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,	ordinary and customary meaning *** “instructions provided to a user to perform an athletic movement with predefined criteria”

'930 patent, Ex. 1001 at 26:16–30

Patent Owner's Response, Paper 20 at 21 (citing Ex. 2004, ¶41)



“[first/second] activity data” (claim 1)



Limitations 1[A]–1[F]

1. A computer-implemented method comprising:
providing first instructions to a user to perform a first athletic movement;
receiving, from a sensor, first activity data representing the first athletic movement;
calculating with a processor, based on the first activity data, a first combinatory fitness-athleticism score;
providing, in response to a triggering event, second instructions to the user to perform a second athletic movement;
receiving, from the sensor, second activity data representing the second athletic movement;
calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,

'930 patent, Ex. 1001 at 26:16–30

Nike's Proposed Construction

ordinary and customary meaning

“data, received from a sensor, that represents the [first/second] athletic movement”

Patent Owner's Response, Paper 20 at 21–22
(citing McLean Declaration, Ex. 2004 at ¶42)



And as for Nike's separate proposed constructions for "instructions" and "activity data," those terms do not even merit resolution because neither limitation is in dispute.

Petitioner's Reply, Paper 24 at 1



**Ground 1: lululemon Fails To Show That Lofi Anticipates
Claims 1 and 5–7**



lululemon Fails To Show That Lofi Discloses Limitation 1[C]



1. A computer-implemented method comprising:
providing first instructions to a user to perform a first athletic movement;
receiving, from a sensor, first activity data representing the first athletic movement;
calculating with a processor, based on the first activity data, a first combinatory fitness-athleticism score;
providing, in response to a triggering event, second instructions to the user to perform a second athletic movement;
receiving, from the sensor, second activity data representing the second athletic movement;
calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,
wherein the first and the second combinatory fitness-athleticism scores each comprise a fitness sub-score and a separate athleticism sub-score of the user,
wherein the fitness sub-score is calculated, by the processor, using one or more of an endurance fitness attribute, a flexibility fitness attribute and a strength fitness attribute of the user, and
wherein the athleticism sub-score is calculated, by the processor, using one or more of a speed athleticism attribute, an agility athleticism attribute, a reaction athleticism attribute, a power athleticism attribute and a balance athleticism attribute of the user.

'930 patent, Ex. 1001 at 26:16-42



And as further discussed in Section VIII.A, a “first athletic movement,” as properly construed, is a “*single* athletic movement” including a “*single* type of exercise or athletic activity.” Thus, the “first activity data” in limitation 1C is measured from a *single* athletic movement, namely the “first athletic movement.” ’930 patent, 26:17–18. That “first activity data” is then used to calculate a “combinatory fitness-athleticism score,” which includes both a “fitness sub-score” and an “athleticism sub-score.” Alternatively stated, the “first activity data” recited in claim 1 must (i) derive from a *single* athletic movement performed in response to “[first/second] instructions,” and (ii) include separate measurements of both fitness and athleticism.

McLean Declaration, Ex. 2004 at ¶158 (cited in Patent Owner’s Response, Paper 20 at 25)

Lofi lacks a first combinatory score derived from a single “athletic movement”



The “first activity data” that lululemon identifies in Lofi is different. lululemon begins by identifying the “first athletic movement” as any *one* of the multiple distinct tests disclosed by Lofi.

Patent Owner’s Response, Paper 20 at 25

One test is for endurance and evaluates sustained effort on a bicycle, a “person is asked to pedal for a period of 8 minutes and the workload is increased progressively.” (Ex. 1002 at 4:4-8.) In this example, pedaling represents a first athletic movement.

In another test designed to test strength, “the person is asked to pedal as fast as possible for a short period of approximately 10 seconds” while the resistance on the bicycle is increased. (*Id.* at 5:13-16.) Pedaling at an individual’s highest speed represents a first athletic movement.

In a different strength test, an individual wears an abdominal belt that contains one or more pressure sensors that can “measure the action of abdominal muscles” (*Id.* at 6:24-7:1.) The individual is then instructed to “contract their abdominal muscles voluntarily,” which is a first athletic movement. (*Id.* at 7:4-5.)

Petition, Paper 2 at 16

40



But each of these tests is a single “athletic movement” that yields only a single measurement. The “activity data” from any one “athletic movement” of Lofi does not yield both a fitness sub-score *and* an athleticism sub-score. Rather, the “activity data” from each alleged “athletic movement” is only capable of yielding a fitness sub-score *or* an athleticism sub-score.

McLean Declaration, Ex. 2004 at ¶59 (cited in Patent Owner’s Response, Paper 20 at 25)



lululemon argues that “Lofi’s 8-minute pedaling test produces both endurance (fitness) and power (athleticism) attributes used in the calculation of a combinatory score.”

Petitioner’s Reply, Paper 24 at 11

But ...

- Lofi never mentions “power”
- lululemon has not shown that a power score is “necessarily present”
- Lofi’s 8-minute pedaling test only generates one score: endurance. That score cannot also be a power score as claim 1 requires *separate* fitness and athleticism scores.

Patent Owner’s Sur-Reply, Paper 25 at 11–13

Lofi never mentions “power”



First, Lofi never mentions “power.” Ex. 2004, ¶60. Lofi’s description concerning the 8-minute pedaling test measures only one attribute that is used in the calculation of an aggregate score: endurance. *See* Ex. 1002, 39:16–25. And Lofi discloses that an endurance measurement is expressed as a “maximum oxygen consumption”—not power—using Watts as the unit of measurement. *Id.* Lofi’s test for measuring lower limb strength similarly lacks any mention of “power.” Ex. 2004,

Patent Owner’s Sur-Reply, Paper 25 at 11

In my opinion, Lofi never discloses
a calculation of power. In fact, Lofi has no mention of “power” in the reference.

McLean Declaration, Ex. 2004 at ¶60 (cited in Patent Owner’s Response, Paper 20 at 26)

Calculation of a “power” score in Lofi is not “necessarily present”



Second, lululemon’s inherency argument (Reply, 11) must fail because lululemon has not shown that a power score is “necessarily present” in either of these tests described by Lofi. *See HTC Corp. v. Cellular Commc’ns Equip., LLC*, 877 F.3d 1361, 1368 (Fed. Cir. 2017) (“A party seeking to establish inherent anticipation must show that a person of ordinary skill in the art would recognize that missing descriptive matter in a prior art reference is nevertheless necessarily present.”). All lululemon has shown is that Lofi’s pedaling test measures endurance and Lofi’s leg strength test measures strength—both fitness sub scores. *See* Ex. 2004, ¶60. lululemon has thus not shown that either test inherently discloses an athleticism score.

Patent Owner’s Sur-Reply, Paper 25 at 12



Power is not derived from the 8-minute pedal test or leg strength test

Third, in order for power to be disclosed by Lofi's 8-minute pedaling endurance test and/or leg strength test, either (a) power *is derived* from the endurance and/or leg strength scores, or (b) power *is* the score generated from the 8-minute pedaling endurance test and/or leg strength test. But lululemon's argument fails under either scenario. To the extent that lululemon is alleging that a power score could be *derived* from maximum oxygen consumption or leg strength—both measured in Watts—lululemon has not shown that power is actually derived by the claimed processor (i.e., “calculate[ed] with a processor”) as claim 1 requires. Ex.

Patent Owner's Sur-Reply, Paper 25 at 12

Lofi's endurance and strength scores cannot also be power scores



1001, 26:21–22. And to the extent that lululemon is alleging that power *is* the score generated from the 8-minute pedaling endurance test and/or leg strength test, Lofi's disclosure of these two tests would still not teach limitation 1C (or limitation 1F for the same reason) because the power score must be “separate” from the endurance or strength score.

But

in both tests, the purported power score is the same score as—i.e., not “separate” from—the endurance and/or leg strength score.

Patent Owner's Sur-Reply, Paper 25 at 13

The “activity data” lululemon identifies results from multiple “instructions”



For example, lululemon’s expert, Dr. Fischer, opines that “a user may be provided with *a first set of instructions* to complete the strength test” where “corresponding activity data related to this movement is collected” and then “[u]pon completion of the strength test, a user may be *subsequently instructed* to commence a balance test”). Ex. 1005, ¶66. In my opinion, this confirms that Lofi’s series of tests are performed in response to multiple sets of instructions. Because the activities identified by lululemon are performed in response to different instructions, they are not part of the same “athletic movement” as required by claim 1.

McLean Declaration, Ex. 2004 at ¶61 (cited in Patent Owner’s Response, Paper 20 at 27)



lululemon Fails To Show That Lofi Discloses Limitation 1[F]



1. A computer-implemented method comprising:
providing first instructions to a user to perform a first athletic movement;
receiving, from a sensor, first activity data representing the first athletic movement;
calculating with a processor, based on the first activity data, a first combinatory fitness-athleticism score;
providing, in response to a triggering event, second instructions to the user to perform a second athletic movement;
receiving, from the sensor, second activity data representing the second athletic movement;
calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,
wherein the first and the second combinatory fitness-athleticism scores each comprise a fitness sub-score and a separate athleticism sub-score of the user,
wherein the fitness sub-score is calculated, by the processor, using one or more of an endurance fitness attribute, a flexibility fitness attribute and a strength fitness attribute of the user, and
wherein the athleticism sub-score is calculated, by the processor, using one or more of a speed athleticism attribute, an agility athleticism attribute, a reaction athleticism attribute, a power athleticism attribute and a balance athleticism attribute of the user.

'930 patent, Ex. 1001 at 26:16–42



Like the “first activity data” in limitation 1C—the “second activity data” recited in claim 1 must (i) derive from a *single* “athletic movement” performed in response to “second instructions” and (ii) include separate measurements of both fitness and athleticism.

McLean Declaration, Ex. 2004 at ¶62 (cited in Patent Owner’s Response, Paper 20 at 28)



lululemon admits
in its Reply that its Petition mapped “Lofi’s series of tests”—i.e., multiple “athletic movement[s]”—to the “second activity data.” Reply, 13. Thus, any data derived from that “series of tests” is not “second activity data representing the second athletic movement,” under the proper construction of “athletic movement.”

Patent Owner’s Sur-Reply, Paper 25 at 13–14



If lululemon’s argument relies on the series of tests disclosed in Lofi—i.e., multiple athletic movements—then any activity data derived from that series of tests is not “based on the second activity data.” *See id.* It is thus my opinion that lululemon has failed to show that Lofi discloses “calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,” as recited in limitation 1F.

McLean Declaration, Ex. 2004 at ¶62 (cited in Patent Owner’s Response, Paper 20 at 28)



lululemon Fails to Show That Lofi Discloses Claim 7



7. The method of claim 1, wherein the first instructions and the second instructions include a predefined ordering of drills that are configured to be provided to the user during a single workout session.

'930 patent, Ex. 1001 at 26:61–64



lululemon argues that “Lofi teaches a series of tests in a single workout session,” each test has a “duration of approximately 15 minutes.” Petition, 26–27. But lululemon fails to support its conclusion that “the order of the tests is determined prior to commencing the workout session.” *Id.*, 27. Thus, in my opinion, lululemon has not shown that Lofi discloses this limitation.

McLean Declaration, Ex. 2004 at ¶64 (cited in Patent Owner’s Response, Paper 20 at 30)



In its Reply, lululemon relies on Dr. Fischer's deposition testimony to argue for the first time that "it would only make sense that a user" repeating tests would do so "in the same order."² Reply, 14 (citing Ex. 2005, 104:20–105:6). But Dr. Fischer's testimony is insufficient for two reasons.

Patent Owner's Sur-Reply, Paper 25 at 14–15



First, Dr. Fischer's opinion only goes to "the second instructions," as recited in claim 7. *See* Petition, 22–23 (lululemon relies on repeating tests for "a second athletic movement" performed "in response to" "second instructions" in limitation 1D). Thus, lululemon's new argument fails to address "the first instructions" that must also "include a predefined ordering of drills." Ex. 1001, 26:61–64.

Patent Owner's Sur-Reply, Paper 25 at 15

7. The method of claim 1, wherein the first instructions and the second instructions include a predefined ordering of drills that are configured to be provided to the user during a single workout session.

'930 patent, Ex. 1001 at 26:61–64



Second, Dr. Fischer's testimony is conclusory and cannot be relied on to fill gaps in an anticipation ground. *Xerox Corp. et al. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15–16 (PTAB Aug. 24, 2022); *Network Com., Inc. v. Microsoft Corp.*, 422 F.3d 1353, 1361 (Fed. Cir. 2005) (rejecting expert opinions that were not “support[ed] . . . with any references to industry publications or other independent sources.”).

Patent Owner's Sur-Reply, Paper 25 at 15



**Ground 2: lululemon Fails To Show That The Lofi-Kitagawa
Combination Renders Obvious Claims 1 and 5–7**



Ground	35 U.S.C. §	Claims	Reference(s)
1	102	1 and 5–7	Lofi
2	103	1 and 5–7	Lofi + Kitagawa
3	103	1, 5–7, and 12	Maeueller + Kitagawa



1. A computer-implemented method comprising:
providing first instructions to a user to perform a first athletic movement;
receiving, from a sensor, first activity data representing the first athletic movement;
calculating with a processor, based on the first activity data, a first combinatory fitness-athleticism score;
providing, in response to a triggering event, second instructions to the user to perform a second athletic movement;
receiving, from the sensor, second activity data representing the second athletic movement;
calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,
wherein the first and the second combinatory fitness-athleticism scores each comprise a fitness sub-score and a separate athleticism sub-score,
wherein the fitness sub-score is calculated, by the processor, using one or more of an endurance fitness attribute, a flexibility fitness attribute and a strength fitness attribute of the user, and
wherein the athleticism sub-score is calculated, by the processor, using one or more of a speed athleticism attribute, an agility athleticism attribute, a reaction athleticism attribute, a power athleticism attribute and a balance athleticism attribute of the user.

'930 patent, Ex. 1001 at 26:16–42

Lofi's abdominal strength test alone cannot generate a combinatory score



In its discussion of limitation 1B, lululemon alleges that Lofi's "first activity data" is a signal transmitted from a belt for monitoring abdominal contractions that is "proportionate to the effort exerted by the abdominal muscles." Petition, 30–31. But this "activity data" does not yield both a fitness sub-score *and* an athleticism sub-score.

Patent Owner's Response, Paper 20 at 31–32

In its discussion of limitation 1B, lululemon alleges that Lofi discloses a "first activity data" when it discloses a signal transmitted from a belt for monitoring abdominal contractions that is "proportionate to the effort exerted by the abdominal muscles." Petition, 30–31. But this "activity data" does not yield both a fitness sub-score *and* an athleticism sub-score. '930 Patent, 26:19–22, 26:34–42 (requiring that of speed, agility, reaction, power, and balance attributes). Rather, the "activity data" from this alleged "athletic movement" only yields a fitness sub-score: muscle strength. See Ex. 1002, 35:24–36:9.

McLean Declaration, Ex. 2004 at ¶167 (cited in Patent Owner's Response, Paper 20 at 32)



lululemon then changes course with its identification of "activity data" in its argument for limitation 1C. Specifically, lululemon states that the terminal in Lofi "enables collection of 'different measurements' corresponding to an individual's performance on each test (e.g., activity data)." Petition, 31–32. According to lululemon, Lofi then provides an "aggregate score corresponding . . . to the weighted average of each fitness test score." *Id.*, 33.

Patent Owner's Response, Paper 20 at 32

Either way, Lofi lacks a combinatory score derived from a single “athletic movement”



But either way, lululemon fails to meet its burden, as it cannot show that a *single* “athletic movement” yields a “combinatory fitness-athleticism score” for the reasons described when addressing limitation 1C for Ground 1 above. Ex. 2004, ¶68.

Patent Owner’s Response, Paper 20 at 32–33

Kitagawa does not cure Lofi's deficiencies – no simultaneous monitoring



Thus, it would have been obvious to a POSITA to look to Kitagawa to incorporate simultaneous monitoring of multiple physical abilities (e.g., flexibility, balance, agility) into Lofi's fitness tests and include Kitagawa's pulse meter to achieve this goal. (*Id.* at ¶ 128.) †

Petition, Paper 2 at 35–36

I disagree for a number of reasons. First, Kitagawa does not use a pulse meter to sense or monitor any physical or physiological parameters of the user while the user is performing an exercise course. A user of Kitagawa's system only records their pulse prior to and after completing courses, and that measurement does not factor into any calculated score. Ex. 1004, 8:43–52. Rather, the only measurement taken as a user completes the courses is elapsed time (to complete each course), as measured from a stopwatch.

* * *

Thus, it is my opinion that Kitagawa does not use “activity data,” i.e., data, received from a sensor, that represents the first athletic movement, to calculate any assessment score.

McLean Declaration, Ex. 2004 at ¶69 (cited in Patent Owner's Response, Paper 20 at 33)



Kitagawa's pulse meter not used to calculate user's "physical strength age"

Q. So other than figure two and the fact that the data is collected, you're unable to point to anywhere in Kitagawa where the user's blood pressure, pulse rate or the degree of which they could bend over is used to calculate the physical strength age, correct?

A. As I sit here today, I am not aware of a specific spot within the description of Kitagawa where all of that data is used in an equation to calculate the physical strength age.

Fischer Deposition Transcript, Ex. 2005 at 85:23–86:8
(cited in Patent Owner's Response, Paper 20 at 34)

Each user is then given a stopwatch and a pulse meter. The user then proceeds through each course, and records on the above-mentioned scorecard how much time is necessary for the user to complete each course; the user also records his/her pulse rates when starting and finishing each course. The pulse meter also serves to help ensure that the user refrains from exercising excessively. When the user reaches the end of the series of courses, he/she again measures his/her blood pressure, pulse rate, and bending-forward distance, and records those numbers on the scorecard.

Kitagawa, Ex. 1004 at 8:43–52 (cited in Patent Owner's Response, Paper 20 at 34)



71. As noted above, completion time does not constitute “activity data” as recited in the '930 patent's claims. *Id.* It is not sensed by a sensor, nor does it “represent the first athletic movement.”

McLean Declaration, Ex. 2004 at ¶71 (cited in Patent Owner's Response, Paper 20 at 34)

Through the teachings of Kitagawa, a POSITA would understand that if two separate users perform one of Kitagawa's obstacle courses and receive the same completion times, they would necessarily receive the same score.

McLean Declaration, Ex. 2004 at ¶71 (cited in Patent Owner's Response, Paper 20 at 34)

Kitagawa does not cure Lofi's deficiencies – no “activity data”



Further, Kitagawa's indexes are pre-defined constants stored in the memory of Kitagawa's system that do not vary by user. *See id.*, 10: 61–65 (“Table 3 shows the amounts of exercise (shown as indexes) *to be performed* in (sic) exercise courses 1 to 7”) (emphasis added). Thus, it is my opinion that Kitagawa does not use “activity data,” i.e., data, received from a sensor, that represents the first athletic movement, to calculate any assessment score.

McLean Declaration, Ex. 2004 at ¶69 (cited in Patent Owner's Response, Paper 20 at 33)

Table 3 shows the amounts of exercise (shown as indexes) to be performed in exercise courses 1 to 7—namely Log Range 1, Climb of Grief 2, Divided Pathway 3, Road of Torsion 4, Wall of Stagnation 5, Cave of Bones 6, and Stretch with Hanging Rings 7.

Kitagawa, Ex. 1004 at 10:61–65 (cited in Patent Owner's Response, Paper 20 at 33)



Physical-strength age is calculated taking into consideration the time that a user takes in completing the entire series of courses. However, age on the basis of physical strength can also be calculated by the time that the user takes in completing any one of the courses.

Kitagawa, Ex. 1004 at 9:6–10 (cited in Patent Owner's Response, Paper 20 at 34)

The various types of exercise and various course conditions are designed so that each physical ability can be evaluated by measuring the completion time for each exercise course.

Kitagawa, Ex. 1004 at 11:1–4 (cited in Patent Owner's Response, Paper 20 at 34)



72. All this aside, from a common-sense standpoint, incorporating Kitagawa's pulse meter into Lofi's system would still not meet this limitation. Kitagawa's pulse meter would not be used to measure flexibility, strength, speed, agility, reaction, power, or balance. The only attribute that could arguably be measured by pulse data is endurance.

McLean Declaration, Ex. 2004 at ¶72 (cited in Patent Owner's Response, Paper 20 at 35)

Kitagawa does not cure Lofi's deficiencies



lululemon now argues in its Reply that it relies on Lofi for “activity data” and Kitagawa for “its teachings of exercise courses, each designed to assess both fitness and athleticism attributes” and for its disclosures of “fitness devices equipped with sensors.” Reply, 15. But lululemon’s arguments still fail.

Patent Owner’s Sur-Reply, Paper 25 at 17

But lululemon has not shown that Kitagawa’s pulse meter nor Lofi’s sensors, if used to monitor a user during an individual test, could generate both fitness and athleticism attributes from a single “athletic movement.” As discussed in Nike’s Response, Kitagawa’s pulse meter does not monitor “activity data,” and thus does not generate any “score”—let alone a “combinatory fitness-athleticism score.”⁴ See Response, 33–35.

Patent Owner’s Sur-Reply, Paper 25 at 17

Kitagawa does not cure Lofi's deficiencies



⁴ In addition, Kitagawa's pulse meter is unnecessary to achieve lululemon's stated goal of monitoring physical abilities because Lofi already discloses a pulse meter. *See, e.g.*, Ex. 1002, 4:7–13. Thus, Kitagawa is redundant to Lofi in this respect.

Patent Owner's Sur-Reply, Paper 25 at 17, n.4

Instead, lululemon cites only to statements from the parties' experts concerning the existence of sensors in the art generally. *See id.* (citing Ex. 1005, ¶125; Ex. 2005, 109:24–110:10; Ex.1017, 19:9–15.). But lululemon does not make any arguments concerning how or why the sensors available in the art could or would be combined with Lofi and/or Kitagawa to calculate a “combinatory score” based on “athletic data” representing a *single* “athletic movement.” *See* Reply, 15–16; Petition 31–36.

Patent Owner's Sur-Reply, Paper 25 at 18



- Kitagawa does not disclose “simultaneous monitoring” of any “athletic movement” to generate “activity data.”
- Kitagawa does not “monitor” any physical or physiological parameters of the user while the user is completing an exercise course.
- Kitagawa only discloses subjective pre-defined indexes of the amount of exercise performed

Patent Owner’s Response, Paper 20 at 33–35

Thus, it is my opinion that there would have been no reason for a POSITA, looking to use sensed data to calculate fitness and athleticism scores, to turn to Kitagawa.

McLean Declaration, Ex. 2004 at ¶77 (cited in Patent Owner’s Response, Paper 20 at 37)



**Ground 3: lululemon Fails To Show That The Maeueller-Kitagawa
Combination Renders Obvious The Challenged Claims**



Ground	35 U.S.C. §	Claims	Reference(s)
1	102	1 and 5–7	Lofi
2	103	1 and 5–7	Lofi + Kitagawa
3	103	1, 5–7, and 12	Maeueller + Kitagawa



Iululemon Fails To Show That Maeueler Discloses Limitation 1[C]



1. A computer-implemented method comprising:
providing first instructions to a user to perform a first athletic movement;
receiving, from a sensor, first activity data representing the first athletic movement;
calculating with a processor, based on the first activity data, a first combinatory fitness-athleticism score;
providing, in response to a triggering event, second instructions to the user to perform a second athletic movement;
receiving, from the sensor, second activity data representing the second athletic movement;
calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,
wherein the first and the second combinatory fitness-athleticism scores each comprise a fitness sub-score and a separate athleticism sub-score of the user,
wherein the fitness sub-score is calculated, by the processor, using one or more of an endurance fitness attribute, a flexibility fitness attribute and a strength fitness attribute of the user, and
wherein the athleticism sub-score is calculated, by the processor, using one or more of a speed athleticism attribute, an agility athleticism attribute, a reaction athleticism attribute, a power athleticism attribute and a balance athleticism attribute of the user.

'930 patent, Ex. 1001 at 26:16–42



In other words, the “first activity data” recited in claim 1 must (i) derive from a *single* athletic movement performed in response to “first instructions,” and (ii) include separate measurements of both fitness and athleticism.

McLean Declaration, Ex. 2004 at ¶80 (cited in Patent Owner’s Response, Paper 20 at 39)

Maeueller teaches separate tests to measure each “component of physical fitness”



[0031] There exist different alternatives for testing the endurance. The endurance is tested by estimating the maximal oxygen consumption (VO₂max) of the user. This can be tested by a run test, a walk test or a step test.

Maeueller, Ex. 1003 at ¶[0031]

[0037] The muscle strength may in embodiments be tested by three muscle tests relating to the upper body, lower body and core body, respectively. The fitness result related to these three tests can be obtained by averaging the result of each of the three tests.

Maeueller, Ex. 1003 at ¶[0037]

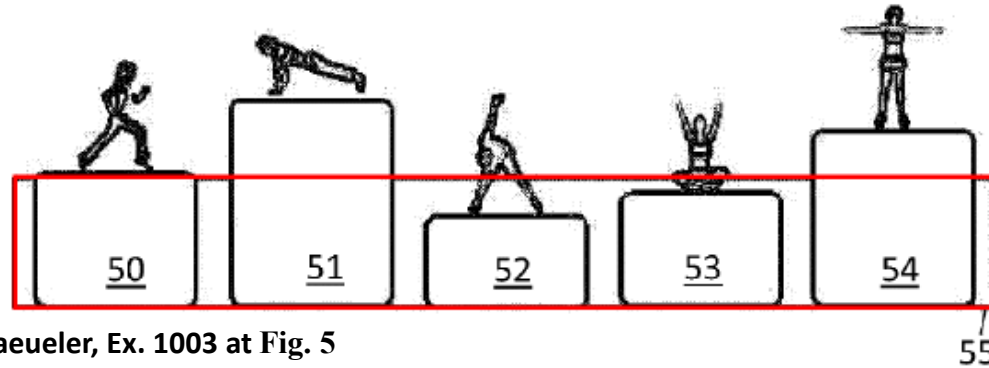
[0044] The balance test may in embodiments be tested by a single test, the Stork balance stand test. In an embodiment, the balance test is performed by using a peripheral device in the form of the exercise mat. The test is used to measure balance ability of the body.

Maeueller, Ex. 1003 at ¶[0044]



Further, it is my opinion that lululemon's discussion of claim 1 further underscores that Maeueller uses multiple different, discrete exercises to generate Maeueller's aggregate fitness index. See Petition at 52 (“a user can . . . perform the exercises associated with each test”), 54 (“Maeueller's computing module receives both the collected *first activity data corresponding to the first test* (e.g., flexibility) as well as *second activity data corresponding to the second test* (e.g., balance).”).

McLean Declaration, Ex. 2004 at ¶82 (cited in Patent Owner's Response, Paper 20 at 41)



Maeueler, Ex. 1003 at Fig. 5

[0052] Figure 5 illustrates an example of a graphical visualization of the fitness test result. Each health-related component is presented by a column: cardiovascular endurance 50, muscle strength 51, flexibility 52, balance 53, body composition 54 and an aggregate fitness index 55.

Maeueler, Ex. 1003 at [0052] (cited in Patent Owner's Response, Paper 20 at 41)

But, in my opinion, Figure 5 clearly shows that the "aggregate fitness index 55" is calculated based on a series of separate exercises—not a *single* "first athletic movement":

McLean Declaration, Ex. 2004 at ¶82 (cited in Patent Owner's Response, Paper 20 at 41)



lululemon Fails To Show That Maeueller Discloses Limitation 1[F]



1. A computer-implemented method comprising:
providing first instructions to a user to perform a first athletic movement;
receiving, from a sensor, first activity data representing the first athletic movement;
calculating with a processor, based on the first activity data, a first combinatory fitness-athleticism score;
providing, in response to a triggering event, second instructions to the user to perform a second athletic movement;
receiving, from the sensor, second activity data representing the second athletic movement;
calculating, with the processor, based on the second activity data, a second combinatory fitness-athleticism score,
wherein the first and the second combinatory fitness-athleticism scores each comprise a fitness sub-score and a separate athleticism sub-score of the user,
wherein the fitness sub-score is calculated, by the processor, using one or more of an endurance fitness attribute, a flexibility fitness attribute and a strength fitness attribute of the user, and
wherein the athleticism sub-score is calculated, by the processor, using one or more of a speed athleticism attribute, an agility athleticism attribute, a reaction athleticism attribute, a power athleticism attribute and a balance athleticism attribute of the user.

'930 patent, Ex. 1001 at 26:16–42



85. Unlike limitation 1C where lululemon argued that the combinatory score was disclosed by two separate tests (i.e. flexibility and balance, *see* Petition, 51–52), lululemon alleges here that Maeueller's disclosure of an exemplary endurance test teaches a first combinatory fitness-athleticism score. Petition, 55. It is my opinion that lululemon's argument fails because each of Maeueller's tests for endurance, strength, flexibility, balance, and body composition, yield only a single, discrete fitness or athleticism measurement for each test, and, thus, cannot provide a "combinatory fitness-athleticism score."

McLean Declaration, Ex. 2004 at ¶85 (cited in Patent Owner's Response, Paper 20 at 42)

Each of Maeueller's tests yields only one component score



Thus, in an exemplary endurance test described by Maeueller wherein a user is instructed to run for 12 minutes, the user is monitored by one or more peripheral devices collect heart rate data and speed data. (Ex. 1005, ¶ 105.) Upon completion of the test, Maeueller's computing module calculates a fitness index numerical score that is a combination of the endurance and speed attributes being assessed. (*Id.*)

Petition, Paper 2 at 55–56

- Maeueller does not disclose measuring speed in the 12-minute run test
- Maeueller discloses that speed *is not* calculated as part of its tests

Patent Owner's Sur-Reply, Paper 25 at 19–20

The fitness tests may be associated with a health-related component of physical fitness. An example of a component of physical fitness that is not health-related, but performance-related, is speed. A component of physical fitness may also be referred to as an aspect of or a dimension of physical fitness.

Maeueller, Ex. 1003 at [0008] (cited in Patent Owner's Sur-Reply, Paper 25 at 20)

Each of Maeueller's tests yields only one component score



Instead, Maeueller only measures time and distance during the 12-minute run test. See Ex. 1003, ¶¶[0031]–[0035]. The measured distance is then used to only calculate the maximal oxygen consumption (VO₂max) of the user. *Id.*, ¶[0031]. Based on that calculation of VO₂max, Maeueller estimates endurance. *Id.* But Maeueller never discloses calculating a combinatory fitness score using a speed measurement. In fact, speed is not mentioned in connection with the endurance test at all.⁵ See *id.*, ¶¶[0031]–[0035]; Ex. 2004, ¶86.

Patent Owner's Sur-Reply, Paper 25 at 19–20

⁵ Even if speed (i.e., an “athleticism sub-score”) *can* be calculated from parameters measured in the 12-minute run test (Reply, 19), lululemon has not shown that speed is *actually* “calculat[ed] with a processor,” as claim 1 requires. Ex. 1001, 26:21–22.

Patent Owner's Sur-Reply, Paper 25 at 20, n.5

The Board should disregard Dr. Fischer's opinions concerning limitation 1F



lululemon cites to Dr. Fischer's declaration to support its allegation that "Maeueller's computing module calculates a fitness index numerical score that is a combination of the endurance and speed attributes being assessed." *Id.*, (citing Petition 55–56; Ex. 1005, ¶105). As a result, according to lululemon, "a group of several different tests would then be equivalent to a single 'athletic movement.'" *Id.*

Patent Owner's Sur-Reply, Paper 25 at 22

And Dr. Fischer fails to support his opinion that a POSITA would combine the endurance and speed attributes with any references to industry publications or other independent sources. See *Network Com., Inc. v. Microsoft Corp.*, 422 F.3d 1353, 1361 (Fed. Cir. 2005).

Patent Owner's Sur-Reply, Paper 25 at 23



Kitagawa's "indexes" are not fitness and athleticism sub-scores for two reasons. First, Kitagawa's indexes are not "based on the second activity data" as recited in claim limitation 1F. As I discussed above in Section X.B.1, Kitagawa's indexes are not based on any "activity data" because they are based on any measured activity parameter at all. Second, the indexes are not based on a *single* "second athletic movement." Instead, it is my opinion that Kitagawa's indexes are representative of the amount of exercise to be performed when a user completes an *entire* exercise course. *See id.*, 10: 61–65.

McLean Declaration, Ex. 2004 at ¶88 (cited in Patent Owner's Response, Paper 20 at 45)

Table 3 shows the amounts of exercise (shown as indexes) to be performed in exercise courses 1 to 7—namely Log Range 1, Climb of Grief 2, Divided Pathway 3, Road of Torsion 4, Wall of Stagnation 5, Cave of Bones 6, and Stretch with Hanging Rings 7.

Kitagawa, Ex. 1004 at 10:61–65 (cited in Patent Owner's Response, Paper 20 at 45)



- Kitagawa does not disclose “simultaneous monitoring” of any “athletic movement” to generate “activity data.”
- Kitagawa does not “monitor” any physical or physiological parameters of the user while the user is completing an exercise course.
- Kitagawa only discloses subjective pre-defined indexes of the amount of exercise performed

Kitagawa does not use any user-specific physiological data in the calculation of the age score. Instead, it is my opinion that Kitagawa only compares a user's completion time against an index to arrive at a more generic score. Thus, as I discuss above, two users having different performances, and demonstrating explicitly different fitness and athleticism abilities, would obtain the same age score if they complete the obstacle course in the same time.

McLean Declaration, Ex. 2004 at ¶190 (cited in Patent Owner's Response, Paper 20 at 46)

No motivation to combine Maeueller and Kitagawa



91. Second, it is my opinion that a POSITA would not have looked to combine Kitagawa with Maeueller because Maeueller already solves the problem that lululemon relies on Kitagawa to solve.

McLean Declaration, Ex. 2004 at ¶91 (cited in Patent Owner's Response, Paper 20 at 46)

In its Reply, lululemon argues that the proposed combination is not redundant of Maeueller alone. Specifically, lululemon argues that “Kitagawa adds i[n] multiple exercise courses for various attributes to generate unique scores” and provides “a more comprehensive understanding of strength, flexibility, balance, agility, and intelligence.” Reply, 20. lululemon is wrong for at least three reasons.⁶

Patent Owner's Sur-Reply, Paper 25 at 21

No motivation to combine Maeueller and Kitagawa



First, Maeueller already discloses measuring strength, flexibility, and balance—albeit through separate tests, performed in response to separate instructions. *See* Ex. 1003, ¶[0004], Ex. 2004, ¶¶80–86, Response, 37–44. And lululemon fails to show how Kitagawa would provide “a more comprehensive understanding” of these attributes. *See* Reply, 20.

Patent Owner’s Sur-Reply, Paper 25 at 21

[0004] There is widespread agreement among experts that there are five crucial components of physical fitness as far as it relates to health: endurance, strength, flexibility, balance, and body composition.

[0037] The muscle strength may in embodiments be tested by three muscle tests relating to the upper body, lower body and core body, respectively. The fitness result related to these three tests can be obtained by averaging the result of each of the three tests.

[0044] The balance test may in embodiments be tested by a single test, the Stork balance stand test. In an embodiment, the balance test is performed by using a peripheral device in the form of the exercise mat. The test is used to measure balance ability of the body.

Maeueller, Ex. 1003 at ¶¶[0004], [0037], [0044] (cited in Patent Owner’s Response, Paper 20 at 39–40)



Second, lululemon has not explained why a POSITA would look to Kitagawa to add agility as an additional physical ability to be monitored in addition to those already monitored in Maeueller. Instead, lululemon improperly uses the '930 patent itself as a roadmap for the proposed combination.

Patent Owner's Sur-Reply, Paper 25 at 21



Third, the Challenged Claims do not recite “intelligence” as a fitness or athleticism sub-score. *See* Ex. 1001, 26:34–42. Thus, Kitagawa’s purported measuring of intelligence is not relevant to the invalidity analysis.

Patent Owner’s Sur-Reply, Paper 25 at 22



**Iululemon Fails to Show That The Maeueller-Kitagawa Combination
Discloses Claim 6**



6. The method of claim 1, wherein the first instructions and the second instructions include a plurality of drills configured to test a plurality of fitness attributes of the user and a plurality of athleticism attributes of the user.

'930 patent, Ex. 1001 at 26:57–60

Maeueller does not teach “a plurality of athleticism attributes”



lululemon alleges that Maeueller teaches two athleticism attributes: balance and speed. Reply, 22. And for the speed attribute, lululemon relies on Maeueller’s 12-minute run test. *Id.* But for the reasons discussed above, Maeueller’s 12-minute run test does not disclose measuring speed. *See supra*, § III.C.i. As a result, lululemon has only identified a single athleticism attribute disclosed in Maeueller, i.e., balance. lululemon thus fails to show that Maeueller in view of Kitagawa teaches “a plurality of athleticism attributes of the user.”

Patent Owner’s Sur-Reply, Paper 25 at 23

Maeueller does not teach calculating a speed component as part of its “aggregate fitness index.” *See* Ex. 1003, [0031]–[0036]. The only “component of physical fitness” that Maeueller associates with the run test is endurance. *See id.* Thus, it is my opinion that Maeueller’s 12-minute run test does not teach or suggest “a combinatory fitness-athleticism score” because Maeueller does not teach or suggest calculating *both* a fitness sub-score and a separate athleticism sub-score based a *single* “athletic movement” (i.e., the run test).