

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.

IPR2023-00189
Patent No. 9,278,256

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,278,256**

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Inter Partes Review of USP 9,278,256

lululemon athletica canada inc. and lululemon usa inc. (“Petitioner”) petitions for *inter partes* review of claims 1-20 of U.S. Patent No. 9,278,256 (the “’256 patent” (Ex. 1001)) in accordance with 35 U.S.C. §§ 311-19 and 37 C.F.R. § 42.100 *et seq.*

I. INTRODUCTION

The ’256 patent is directed to a system and method for remote athletic competitions. In the purported invention, sensors collect and send user athletic activity data to a central computer. The central computer processes the data, determines whether a user has won the competition, and provides a real-time interface showing its status. According to the ’256 patent, real-time feedback and competitions motivate users to exercise.

The ’256 patent never should have issued. Shortly before its filing, Patent Owner filed U.S. Patent Application No. 12/031,380 (the “’380 application”), claiming priority to provisional applications filed more than a year before the ’256 patent’s earliest claimed priority date. The ’380 application (which has only one named inventor and who is not listed on the ’256 patent) contained, word-for-word and figure-for-figure, most of the ’256 patent’s written description. The ’380 application issued as U.S. Patent No. 8,162,804 (“Tagliabue” (Ex. 1004)). Tagliabue anticipates every challenged claim.

The challenged claims also are invalid over U.S. Patent Application Publication No. 2007/0239479 (“Arrasvuori” (Ex. 1005)), U.S. Patent No. 6,458,060 (“Watterson” (Ex. 1006)), and International Publication No. WO 02/067449 (“Ellis” (Ex. 1007)). In Arrasvuori’s system, a server hosts an athletic competition between remotely located users. The server processes user athletic activity data, determines the victor, and provides real-time feedback. Similarly, Watterson and Ellis disclose systems in which users compete in simulated athletic competitions and receive graphical feedback regarding their progress. A person of ordinary skill in the art (“POSITA”) would have found claims 1-4, 7, 8, and 11-16 of the ’256 patent anticipated by and/or obvious over these references.

II. BACKGROUND

A. The ’256 Patent

The ’256 patent purports to solve the problem of motivating people to exercise by monitoring athletic data and providing real-time feedback during athletic competitions. (Ex. 1001, 1:34-57, 3:16-37.) To that end, its Figure 3 (annotated below) depicts an “athletic information monitoring device 201,” (*id.*, 7:56-57), including “athletic parameter measurement device 207 [red] [that] transmits signals to the electronic interface device 205 [blue] ... [that] provides the received information to the digital music player 203 [green],” (*id.*, 8:4-10.)

“[A]thletic parameter measurement device 207 includes one or more sensors 301 [purple] for measuring an athletic parameter associated with a person wearing or otherwise using the athletic parameter measurement device 207.” (*Id.*, 8:11-15.)

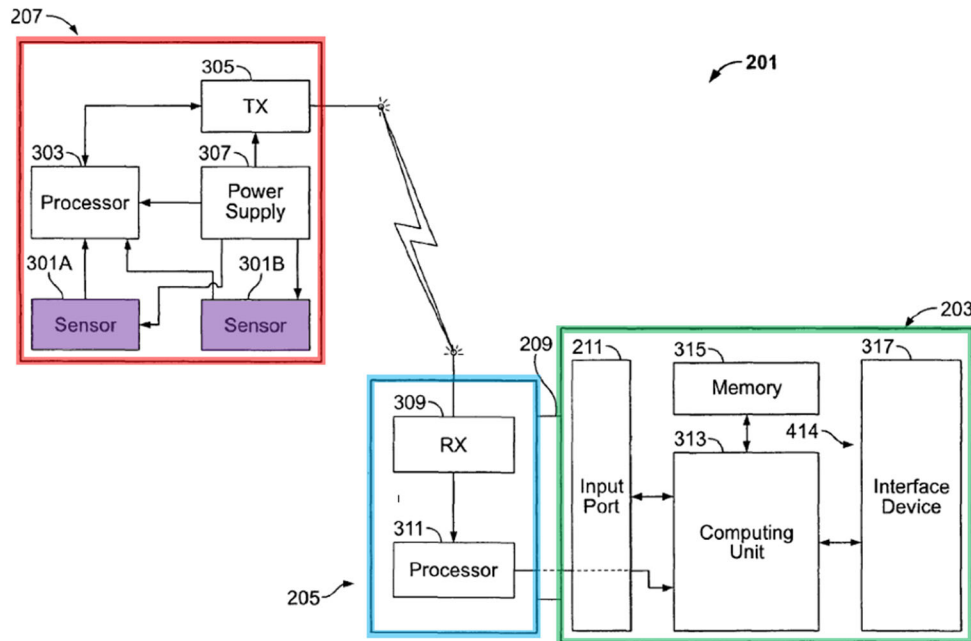


FIG. 3

(*Id.*, Fig. 3 (annotated).)

Device 201 sends athletic activity data to “the athletic information collection and display device 501 [red]” (depicted in annotated Figure 5 below). (*Id.*, 12:12-14.) That device includes an “athletic data collection module 505 [blue].” (*Id.*, 12:19.)

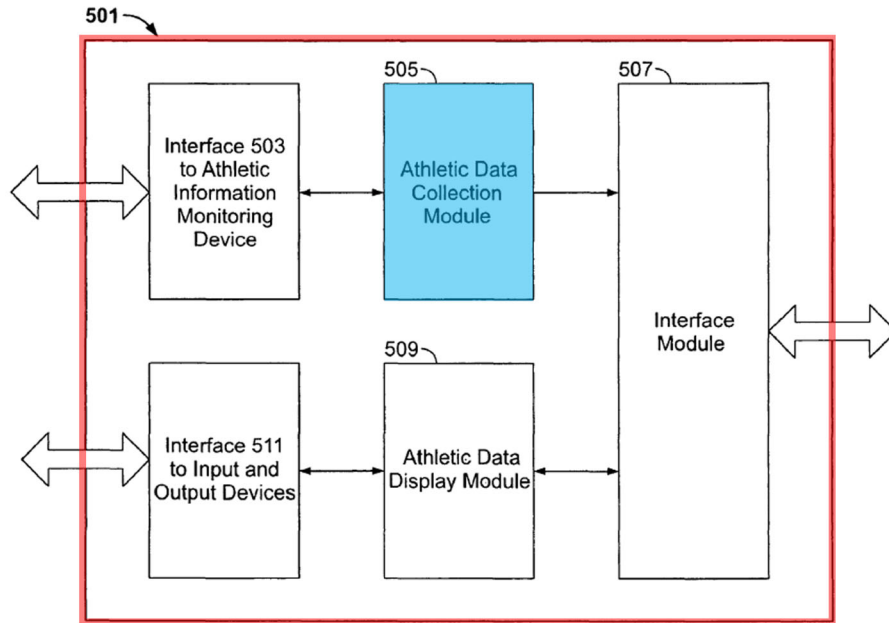


FIG. 5

(*Id.*, Fig. 5 (annotated).) “[A]thletic data collection module 505 may be implemented by, for example, software instructions executed by a computing unit 113 of a computing device 101 ... by a conventional software tool ... by a purpose specific software tool or by a conventional software tool enhanced to perform athletic data collection functions.” (*Id.*, 12:59-67.)

“[T]he athletic data collection module 505 transmits the athletic data set to an athletic data display configuration device 601 [red] ... through a conventional network, such as the Internet.” (*Id.*, 13:9-15.) “[A]thletic display configuration device 601 also includes an athletic data display configuration module 605 [blue]” (*Id.*, 13:50-51.)

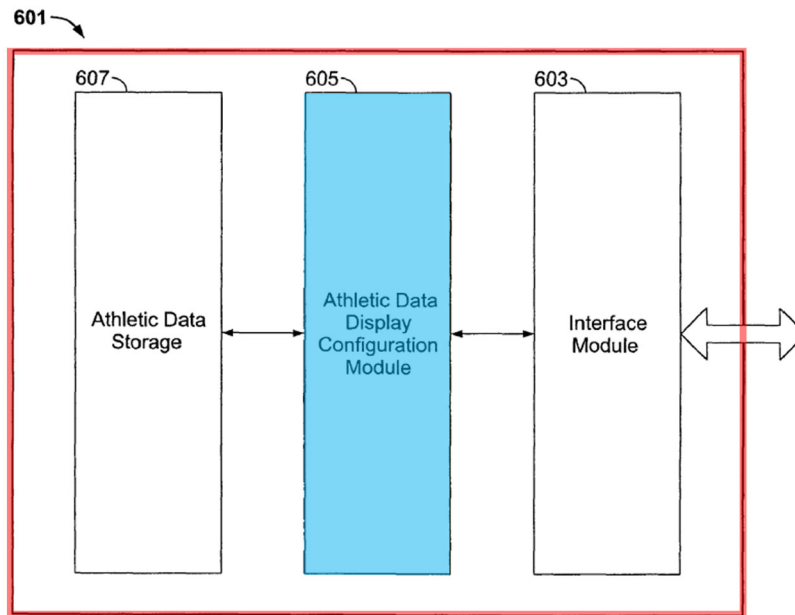


FIG. 6

(*Id.*, Fig. 6 (annotated).) That module generates user interfaces depicting athletic activity and sends them to the user. (*Id.*, 14:31-64.)

According to the '256 Patent, users can invite others to athletic challenges, as depicted in Figures 13A-13C below. (*Id.*, 21:59-23:3.)

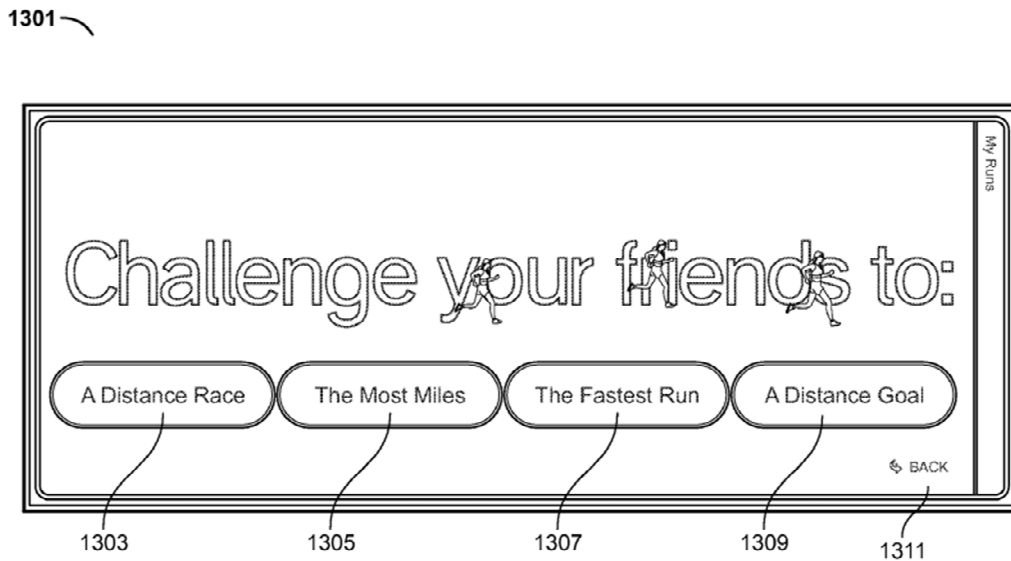


FIG. 13A

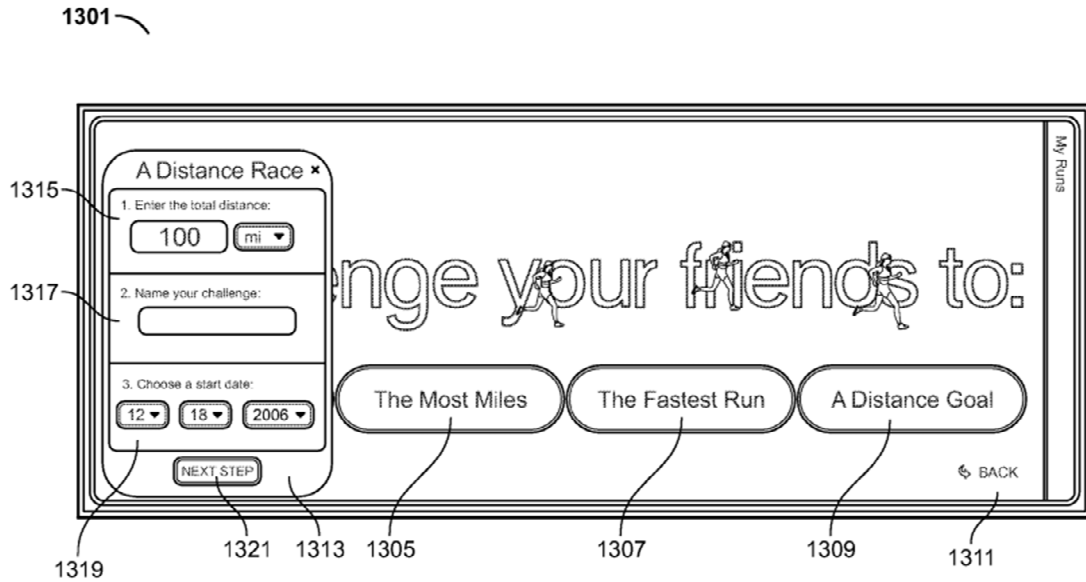


FIG. 13B

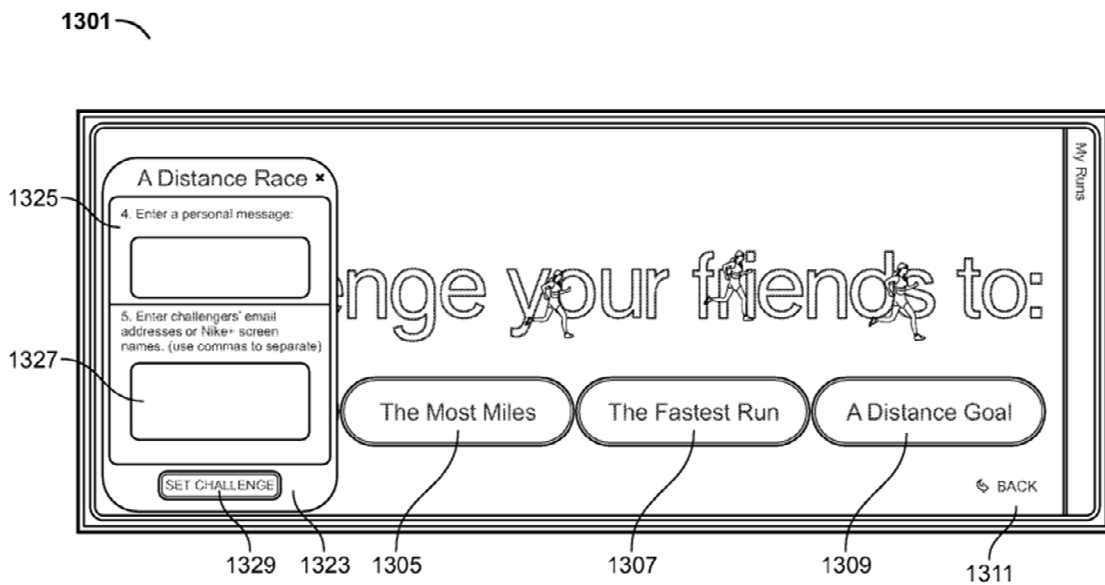


FIG. 13C

(*Id.*, Figs. 13A-C.)

During those challenges, “athletic data display configuration device 601 ... monitors the collected athletic activity data for each of the participants and aggregates the relevant data values” (*Id.*, 23:4-7.) It “provide[s] updates regarding the status of a participant relative to the other participants[,]” including

by “configure[ing] and provid[ing] a user interface showing each participants progress toward the goal of the challenge” (*Id.*, 23:27-36.) It “will identify [the first participant to complete the challenge] as the winner ... [and] notify each participant of the winner.” (*Id.*, 23:15-18.)

B. Prosecution History

The '256 Patent was filed on May 29, 2015. The Examiner rejected all pending claims on June 26, 2015, as patent ineligible and as anticipated and/or obvious over two references, neither of which is relied upon here. (Ex. 1002, 1-9.) Applicant conceded the rejection and rewrote the independent claims to require providing real-time feedback to multiple users at different and remote locations. (*Id.*, 10-18.) The Examiner allowed the amended claims. (*Id.*, 19-21.)

C. The Prior Art

Providing real-time feedback during athletic competitions between remote users was well known by 2008:

1. Tagliabue

a. Tagliabue and the '256 Patent Disclose the Same System

Tagliabue is one of Patent Owner's published patent applications. (Ex. 1004, 1.) It discloses, word-for-word and figure-for-figure, most of the specification of the '256 patent. (*Compare* Ex. 1001, 5:10-29:25, Figs. 1-16 *with* Ex. 1004, 4:39-28:54, Figs. 1-16.) The '256 patent incorporates Tagliabue's non-

provisional Application No. 12/031,380 by reference, (Ex. 1001, 33:25-28), but never claims priority to it, (*id.*, 1:7-24), leaving it available as prior art, (*see* 37 C.F.R. § 1.78(d)(2).)

b. Tagliabue’s Prior Art Date Is February 14, 2007, or at the Latest, February 14, 2008

Tagliabue is prior art by at least February 14, 2008. (Ex. 1004, 1.) Under *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, Tagliabue is also prior art by February 14, 2007, the filing date of its provisional Application No. 60/889,753 (“’753 application”). *See* 800 F.3d 1375, 1382-83 (Fed. Cir. 2015). Although Petition is not required to prove Tagliabue’s entitlement to that date at this stage, *id.* at 1381, it is entitled to the earlier date because the ’753 application supports at least one of its claims:

<i>Tagliabue’s Claim 1</i>	<i>’753 application</i>
1[pre] A method of processing athletic data, comprising:	If limiting, the ’753 application discloses a method of processing athletic data (<i>See, e.g.</i> , Ex. 1013, ¶¶ 83-94, Figs. 13A-F.)
1[A] receiving, at a computing device having at least one processor, [i] data specifying a user-defined athletic challenge including a user-defined goal to be achieved, [ii] identification of at least two participants in the athletic challenge, and [iii] a user-defined duration of the challenge, wherein the user-defined duration is defined by at least one of a user-defined start time	The ’753 application discloses Device 601, a computer with a processor. (<i>See, e.g., id.</i> , ¶¶ 13, 24-31, 50-52, 56-58, Figs. 1, 6, 7.) Device 601 receives [i] a user’s specification of an athletic challenge, including “Distance Race,” “Most Miles,” “Fastest Run,” and “Distance Goal” challenges. (<i>Id.</i> , ¶¶ 83, 84, 89, 91, 93.) The challenges include user-

<i>Tagliabue's Claim 1</i>	<i>'753 application</i>
<p>and user-defined end time of the athletic challenge, wherein the identification of the at least two participants includes a user identifier unique to a first participant, wherein the received data defines the at least two participants as competitors against one another in the athletic challenge,</p>	<p>defined goals, such as “who can run a specified distance first” (<i>Id.</i>, ¶ 84, <i>see also id.</i>, ¶¶ 89, 91, 93.) Users [ii] identify multiple participants by entering “the email address for each person he or she wishes to invite to participate in the challenge” into Device 601’s interface. (<i>Id.</i>, ¶ 85, <i>see also id.</i>, ¶¶ 90, 92, 94, Fig. 13C.) Users [iii] define challenge duration by entering the “Start Date” and other parameters into the interface. (<i>Id.</i>, ¶¶ 84, 89, 91, 93, Figs. 13B, 13D-F.) The start date defines a start time because days begin at 12:00AM.</p>
<p>1[B] and wherein receiving the data includes:</p> <p>generating, by the computing device, a first user interface including a plurality of user-selectable challenge types;</p> <p>receiving, by the computing device, a user selection of one of the user-selectable challenge types; and</p> <p>overlaying, by the computing device, a second user interface over a portion of the first user interface, wherein the second user interface overlays a graphical element corresponding to the selected challenge type and wherein another portion of the first user interface including at least a non-selected challenge type remains visible when the second user interface is overlaid on the portion of the first user interface;</p>	<p>In receiving the above information, Device 601 (1) generates the interface shown in Figure 13A, (<i>see, e.g., id.</i>, ¶¶ 52, 56, 83, Fig. 13A), (2) receives a user’s selection of a challenge type, (<i>see, e.g., id.</i>, ¶¶ 84, 89, 91, 93), and (3) generates a challenge-specific interface partially overlaying the interface shown in Figure 13A, (<i>see, e.g., id.</i>, ¶¶ 84, 89, 91, 93, Figs. 13B, 13D-F.)</p>

<i>Tagliabue's Claim 1</i>	<i>'753 application</i>
1[E] transmitting, by the computing device, an electronic invitation to participate in the athletic challenge to a first remote device of the first participant after receiving the data specifying the user-defined goal to be achieved, and the user-defined duration of the challenge, wherein the electronic invitation is addressed to the first participant using the unique user identifier;	After the user defines the challenge, Device 601 “sends an email to each of the specified invitees ... contain[ing] the personal message and, e.g., an interactive prompt to join the challenge.” (<i>Id.</i> , ¶ 86; <i>see also id.</i> , ¶¶ 90, 92, 94.) Device 601 is located remotely from individual user devices 501. (<i>See, e.g., id.</i> , ¶ 57.)
1[F] receiving, by the computing device, a response from the first participant accepting the invitation;	“If an invitee agrees to join the challenge ... device 601 will be notified that the invitee has agreed to join the challenge.” (<i>Id.</i> , ¶ 86; <i>see also id.</i> , ¶¶ 90, 92, 94.)
1[G] remotely monitoring and collecting, by the computing device, athletic performance data of the at least two participants through the duration of the challenge in accordance with the at least one of the user defined start time and the user-defined end time of the athletic challenge; and	“[Device 601] monitors the collected athletic data for each of the participants, and aggregates the relevant data values in the collected athletic data. For example, if the challenge is a race to determine who can be the first to run 100 miles, for each participant the athletic data display configuration device 601 will sum the total distance value in each athletic data set collected for that participant after the start date.” (<i>Id.</i> , ¶ 87; <i>see also id.</i> , ¶¶ 90, 92, 94.) Device 601 is located remotod from users. (<i>See, e.g., ¶ 57.</i>)
1[H] determining, by the computing device, a winner of the athletic challenge upon expiration of the	“When a participant has a sum of his or her total distance values that matches or exceeds the specified challenge distance, then ... device 601 will

<i>Tagliabue's Claim 1</i>	<i>'753 application</i>
challenge based on the collected performance data.	identify that participant as the winner of the challenge.” (<i>Id.</i> , ¶ 87; <i>see also id.</i> , ¶¶ 90, 92, 94.)

The '753 application also includes substantively the same disclosure from Tagliabue cited in Ground 1, which is more than is required under *Dynamic Drinkware*. (*Compare* Ex. 1004, 7:23-24, 7:32-44, 7:47-52, 8:45-57, 9:25-31, 10:27-29, 11:12, 11:45-55, 12:35-43, 13:11-12, 14:40-43, 14:60-63, 21:37-41, 22:2-30, 22:32-43, 22:45-50, 22:54-56, 22:61-23:2, 23:32-36, 24:5-9, 24:14-16, 24:45-49, Figs. 3-7, 13A-B *with* Ex. 1013, ¶¶ 32, 33, 37, 39, 41, 44, 46, 50, 52, 57, 58, 84-90, 92-94, Figs. 3-7, 13A-B.) Additionally, the remaining cited disclosure from Tagliabue was added to its March 30, 2007, provisional Application No. 60/909,298, which also includes the material from the '753 application. (*Compare* Ex. 1004, 31:37-43, Fig. 26 *with* Ex. 1014, ¶ 99, Fig. 24.)

c. Tagliabue and the '256 Patent Have Different Inventive Entities.

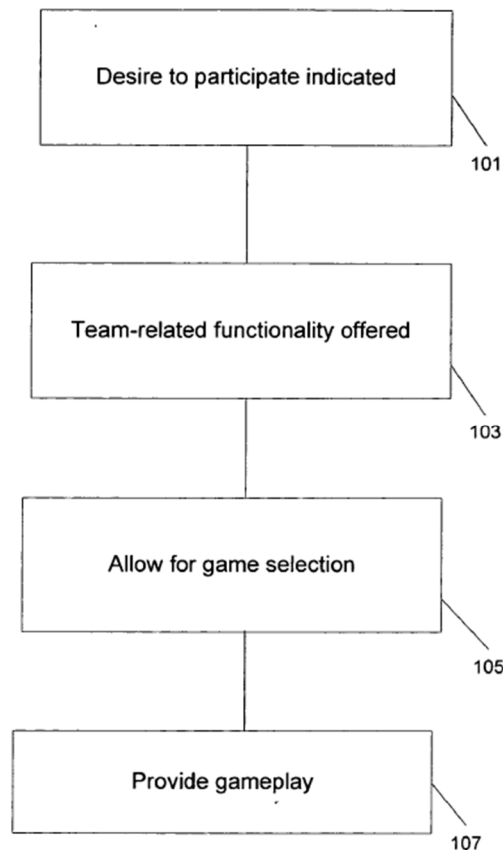
Tagliabue's sole named inventor is Roberto Tagliabue. (Ex. 1004, 1.) The '256 Patent's named inventors were Michael Tchao, Christopher Robinette, and Jason Nims. (Ex. 1001, 1.) Thus, Tagliabue was “by another.”

2. Arrasvuori

Arrasvuori is a published patent application that discloses remote competitions involving “multi-player video game[s] ... wherein one or more

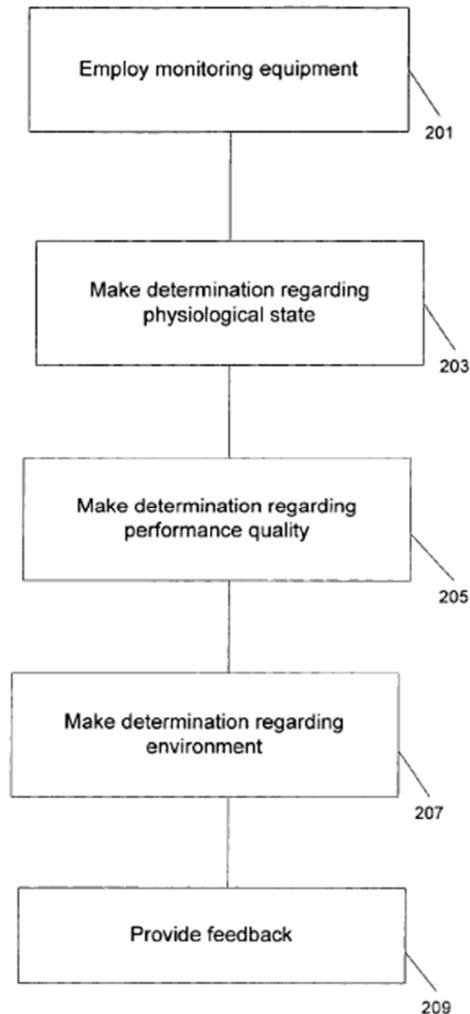
players perform real-world fitness tasks.” (Ex. 1005, ¶ 17; *see also id.*, ¶ 19.) To initiate a competition, a user “indicate[s] a desire to do so via her wireless node and/or other computer” (*Id.*, ¶ 17.) The user also can “select from one or more indicated games one or more games that she wished to play.” (*Id.*, ¶ 20.)

Arrasvuori summarizes its “game initiation and gameplay operations” in Figure 1:



(*Id.*, Fig. 1.)

During gameplay, user wireless nodes and/or computers and servers conduct “monitoring and feedback operations” by exchanging user athletic activity data and feedback. (*Id.*, ¶¶ 38-55, 90-99, Fig. 2.) Arrasvuori summarizes those operations in Figure 2:



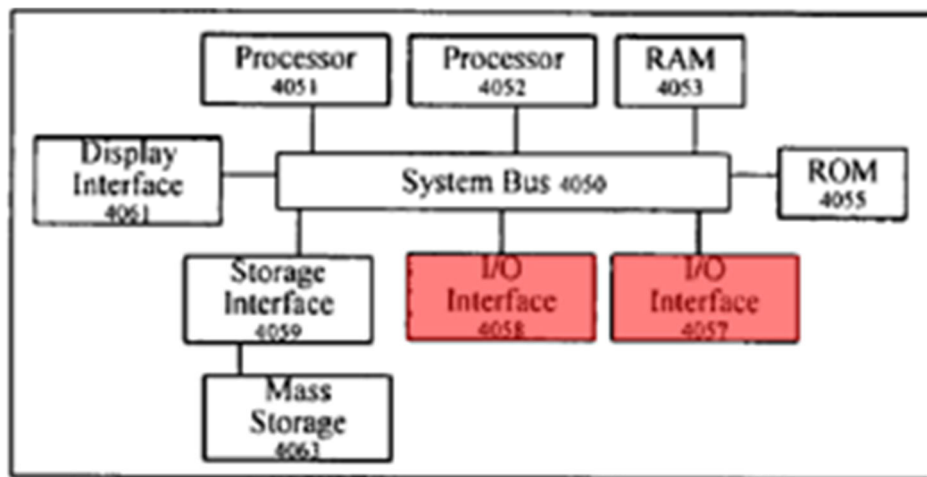
(*Id.*, Fig. 2.)

In step 201, Arrasvuori employs “monitoring equipment” to collect athletic activity data from users. (*Id.*, ¶¶ 38-40.) The monitoring equipment can “include one or more sensors,” such as a GPS, heart rate meter, or pedometer. (*Id.*, ¶ 40.) The monitoring equipment is part of “wireless nodes and/or other computers of users, and/or ... attached to bodies of users.” (*Id.*, ¶ 39.) Arrasvuori broadly

defines “computer” to include wearable devices, such as “a computerized watch.” (*Id.*, ¶ 90.)

The wireless nodes and/or computers, such as “a computerized watch” hosting monitoring equipment, communicate the athletic activity data via communication interfaces to a computer server. (*See id.*, ¶¶ 38 (“[M]onitoring [of fitness tasks] might involve communication ... between a user wireless node and/or other computer and *a server*”) (emphasis added), 55.)

Arrasvuori broadly defines a computer server to include standard components, such as those depicted in Figure 4 below. For example, a computer server includes interfaces 4057 and 4058 (red), which can be wireless interfaces. (*Id.*, ¶¶ 37, 91.)



(*Id.*, Fig. 4 (cropped and annotated).) Arrasvuori also discloses computer code “load[ed] ... onto the computer [server],” and the computer server “run[ning] one

or more software modules designed to perform one or more of the above-described operations” of Figures 1 and 2. (*Id.*, ¶ 93.)

In monitoring and feedback operations steps 203, 205, and/or 209, the server determines each user’s athletic activity, evaluates whether any user won the challenge, and displays each user’s progress. The server may determine “whether or not the user had reached a target heart rate,” (*id.*, ¶ 42; *see also id.*, ¶ 41), and “the speed with which the fitness task was completed,” (*id.*, ¶ 46; *see also id.*, ¶ 41.) It provides “real-time”, (*id.*, ¶ 49), feedback in the form of leaderboards and other graphics, (*id.*, ¶¶ 48-53.) It displays “users that are performing and/or that have performed the real-world fitness task ... positioned relative to one another [and/or] a goal corresponding to the task.” (*Id.*, ¶ 52.)

3. Watterson

Watterson discloses “systems and methods for providing improved exercise devices in combination with other users” (Ex. 1006, 1:19-21.) As depicted in Figure 10 (annotated below), its system includes “communication module 254” (blue) that receives athletic activity data from “user modules 252a-252n” (red) via wireless “network 16” (green). (*Id.*, 29:28-29; *see also id.*, 6:28-30.)

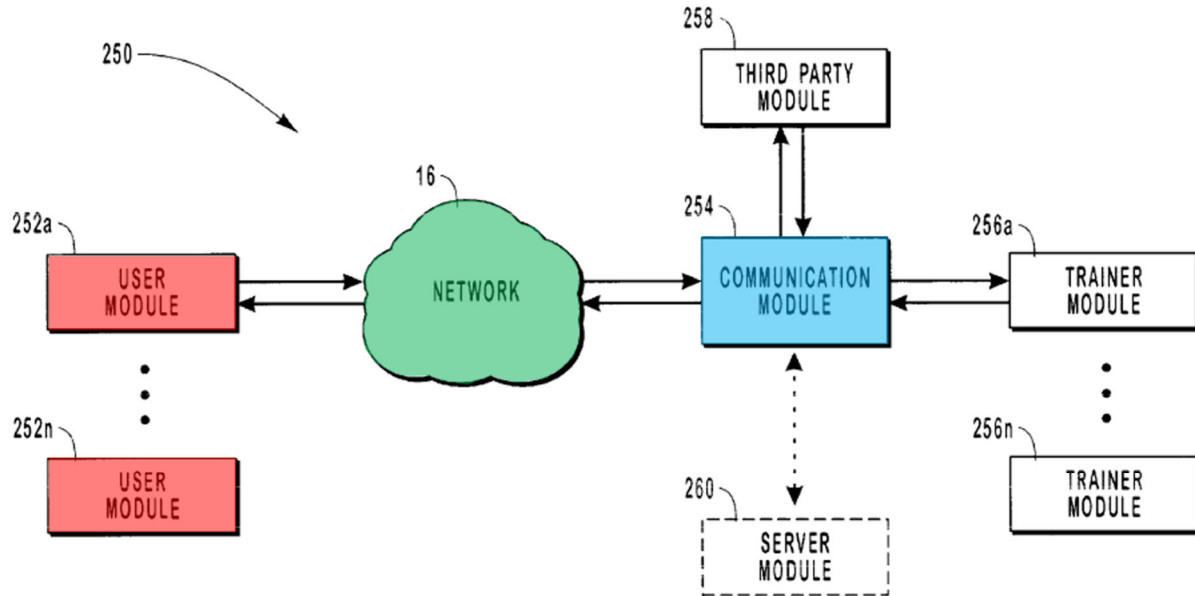


FIG. 10

(*Id.*, Fig. 10 (annotated).) As depicted in Figure 11 (annotated below), within communication module 254, communication user interface module 272 (purple) transceives data ... between user module 252 and communication module 254.”

(*Id.*, 33:33-38; *see also id.*, 30:50-53.)

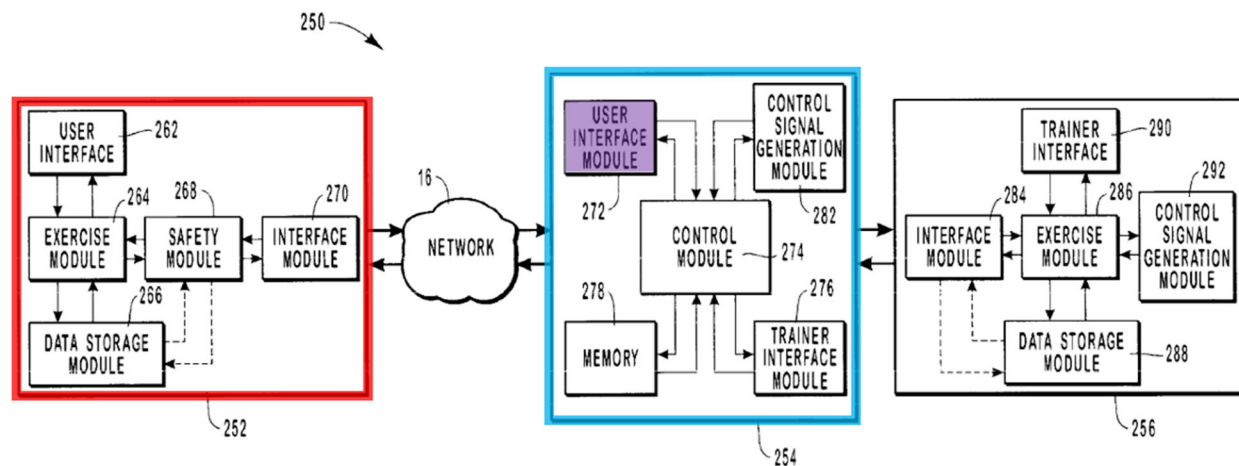


FIG. 11

(*Id.*, Fig. 11 (annotated).)

The transceived data includes athletic activity data. “[U]ser modules 252a-252n may take the form of various other devices ... includ[ing] treadmill 12.” (*Id.*, 28:67-29:3.) “Treadmill 12 ... includes one or more sensors, such as a belt speed sensor 230 and incline sensor 232.” (*Id.*, 25:10-12.) It also can include “other sensors that gather various other operating parameters, such as but not limited to, maximum pulse and heart rate, average pulse and heart rate, target heart rate, length of workout session, and the like.” (*Id.*, 25:17-20; *see also* 31:5-6, 31:30-35.)

Communication module 254 hosts remote athletic competitions between users. As depicted in Figure 12 (annotated below), its hardware and/or software modules include “an iFit.com website 300 [**red**][,]” (*id.*, 35:6-8, 35:16-17), which includes “personal training module 312 [**blue**] [and] competition module 314 [**green**] ...[,]” (*id.*, 35:32, 35:13-15.)

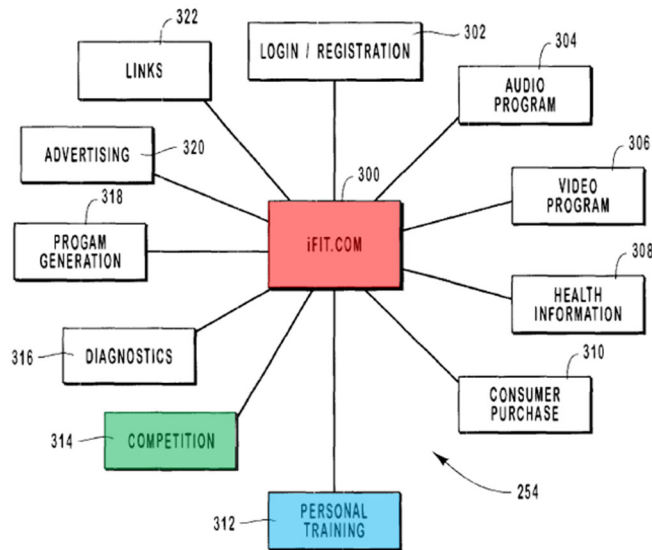


FIG. 12

(*Id.*, Fig. 12 (annotated).) Within iFit.com website 300, “[c]ompetition module 314 enables one or more individuals to engage in competitive exercise programming with one another” (*Id.*, 40:18-21.) That programming includes a “personalized race,” in which “two or more individuals ... race against the other, while viewing graphical representations of the distan[ce], time, and speed of the other competitors.” (*Id.*, 41:44-48.) The personalized race occurs in a virtual “private room of personal training module 312” (*Id.*, 41:43-46.)

4. Ellis

Ellis discloses “a system that can work with another system to provide a competition between multiple athletes.” (Ex. 1007, 3:31-32.) It discloses a “modular personal network (MPN)” consisting of “multiple individual network components (INCs), each of which may have one or more primary functions.” (*Id.*, 25:2-5.) The MPN includes “a control unit, which may be an INC containing a

processor and memory for controlling other INCs in the MPN.” (*Id.*, 4:32-5:1.)

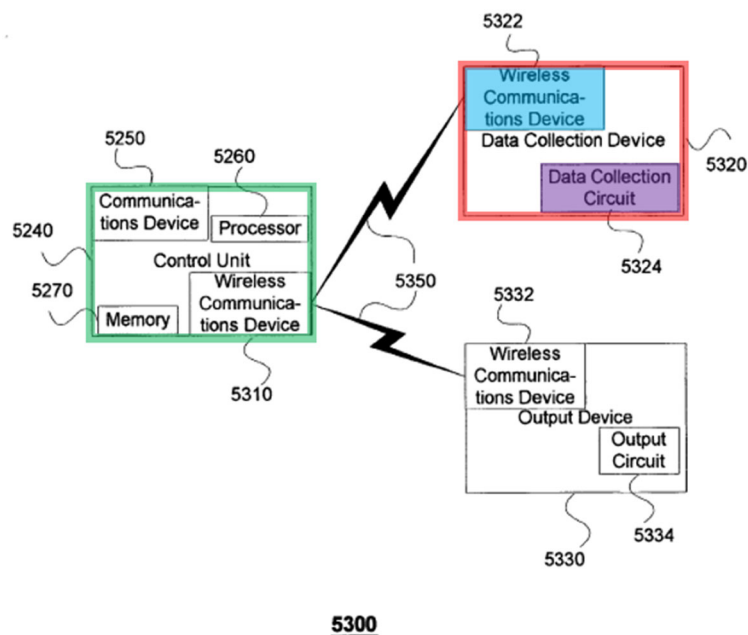
As depicted in Figure 53 (annotated below), other INCs within the MPN monitor

“athletic data”: “Data collection INC 5320 [red] may have wireless

communication device 5322 [blue] for sending collected data to control unit 5240

[green] ... It may also have data collection circuit 5324 [purple].” (*Id.*, 69:31-

70:2.)

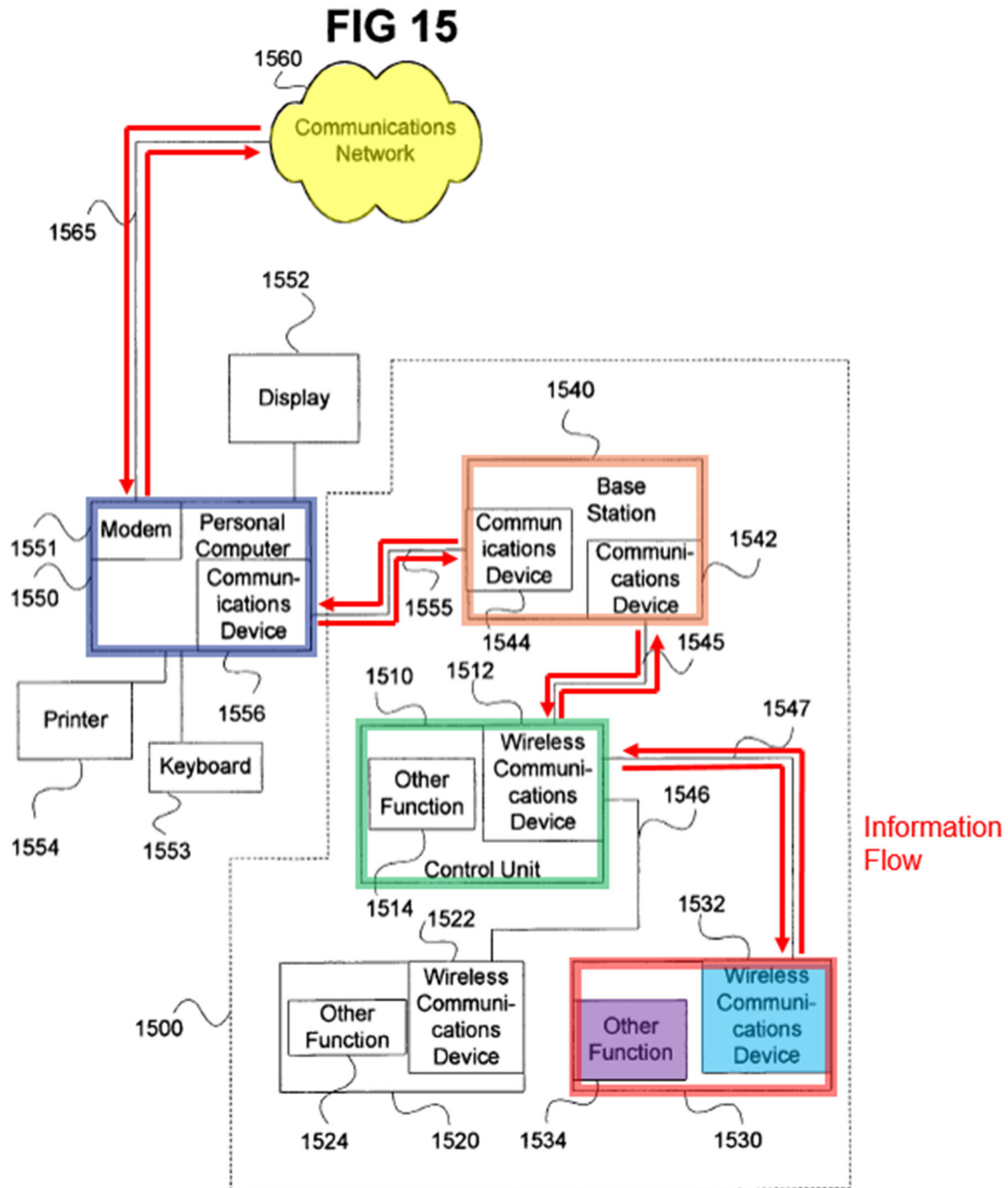


(*Id.*, Fig. 53 (annotated).)

For example, an INC may use an accelerometer to detect workout cadence. Ellis explains: “[A] control unit may collect the data from the accelerometer, and measure the frequency at which the data reaches its relative maximums and minimums. This may correspond to the rate at which the user is swinging his or

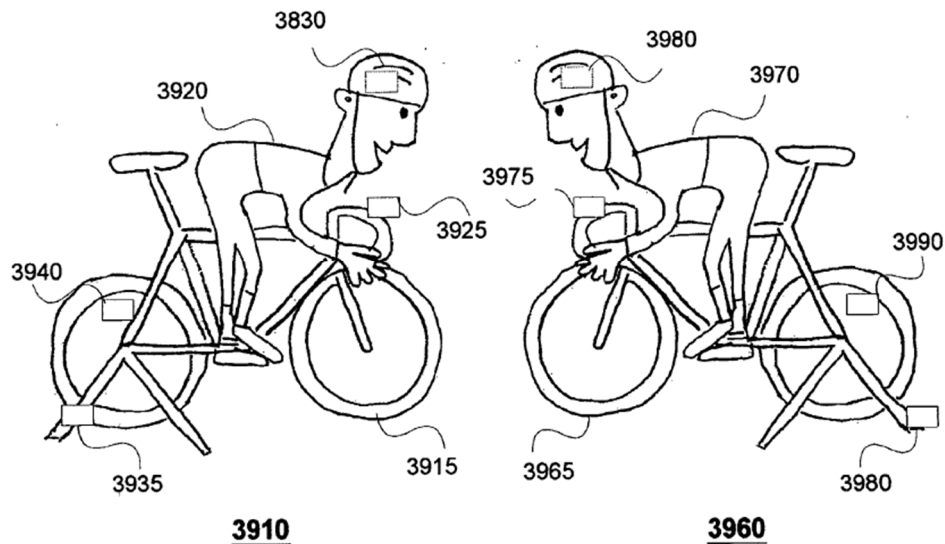
her arms ... which translates directly to cadence.” (*Id.*, 84:19-22.) Users can wear the accelerometer on their wrists. (*Id.*, 64:12-13, 84:12-18, Fig. 44.)

Ellis’ MPNs can “interface with other systems.” (*Id.*, 39:2.) In Figure 15 (annotated below), Ellis depicts control unit 1510 (**green**) communicating with base station 1540 (**orange**). (*Id.*, 39:11-12.) Base station 1540 communicates with personal computer 1550 (**navy**), which “may be configured to send or receive information from another computer using wide area network 1560 [**yellow**].” (*Id.*, 39:28-29; *see also id.*, 39:14-17.)



(*Id.*, Fig. 15 (annotated).) As shown above, there is bi-directional information flow between an INC measuring athletic activity data and “another computer accessed over the communications network.” (*Id.*, 40:9-10; *see also id.*, 39:30-40:14.)

Ellis also discloses virtual athletic competitions. As depicted below in Figure 39's bicycle competition, "[t]he two control units may ... compare the speeds of the two riders ... the display INCs may be used to provide feedback on the comparative progress on the simulated course of the two riders, for example notifying each rider of the comparative position of the other." (*Id.*, 58:22-26.)



(*Id.*, Fig. 39.) “The two MPNs may determine who wins the competition based on data gathered from the two stationary bicycles or other sensors.” (*Id.*, 57:28-29.)

III. CLAIM CONSTRUCTION

Although Petitioner believes no claim construction is necessary for the purposes of this Petition, Petitioner reserves the right to respond to any constructions advanced by Patent Owner.

IV. LEVEL OF ORDINARY SKILL

A POSITA for the technology of the '256 patent would have had (1) a bachelor's degree in engineering, computer science, industrial design, biomechanics, or a related field, and (2) at least two years of experience researching, developing, designing, and/or testing fitness or physiological sensors, wearable devices, physiological or biomechanical devices, remotely-controlled systems or interfaces, and/or network-based applications and/or equipment, or the equivalent experience or education. (*See* Ex. 1003, ¶¶ 43, 44.)

V. PRECISE REASONS FOR RELIEF REQUESTED

Pursuant to 37 C.F.R. § 42.104(b), Petitioner requests cancellation of claims 1-20 of the '256 patent based on the following references:

Prior Art Reference	Abbreviation
U.S. Patent No. 8,162,804	“Tagliabue” (Ex. 1004)
U.S. Patent Publication No. 2007/0239479	“Arrasvuori” (Ex. 1005)
U.S. Patent No. 6,458,060	“Watterson” (Ex. 1006)
International Publication No. WO 2002/067449	“Ellis” (Ex. 1007)

The statutory grounds for the challenge to each claim are set forth below. All statutory citations are pre-AIA. Tagliabue was filed on February 14, 2008 and is entitled to the February 14, 2007 filing date of U.S. Provisional Patent Application No. 60/889,753. (*See supra* § II.C.1.b.) Tagliabue qualifies as prior

art under at least section 102(e). Arrasvuori was filed and was published and publicly available by March 29, 2006 and October 11, 2007, respectively, and qualifies as prior art under at least sections 102(a) and (e). Watterson was filed August 18, 2000 and issued October 1, 2002 and is prior art under at least sections 102(a), (b), and (e). Ellis published August 29, 2002 and is prior art under at least sections 102(a) and (b).

Ground	35 U.S.C. §	Claims	Prior Art References
1	102	1-20	Tagliabue
2	102	1-4, 7, 8, 11-16	Arrasvuori
3	103(a)	1-4, 7, 8, 11-16	Arrasvuori
4	103(a)	13	Arrasvuori, Ellis
5	103(a)	1, 7, 8, 11-13, 15, 16	Watterson, Arrasvuori

Section 325(d) is inapplicable because the Petition does not raise substantially the same art or arguments in the same way as the examination of the '256 patent. *Advanced Bionics, LLC v. MED-EL Elektromedizinische Gerate GmbH*, IPR2019-01469, Paper 6, at 7-11 (P.T.A.B. Feb. 13, 2020) (precedential). Family members of Watterson and Ellis were disclosed during prosecution of the '256 patent, but not substantively discussed or applied against the claims. *See Amazon Inc. v. M2M Sols. LLC*, IPR2019-01204, Paper 14 at 16 (P.T.A.B. Jan. 23,

2020) (“reference that was neither applied against the claims nor discussed by the Examiner” weighs against denying institution under section 325(d)).

VI. GROUND 1: TAGLIABUE ANTICIPATES EVERY CLAIM

A. Claim 1

1. Element 1[pre]

A system comprising:

If limiting, Tagliabue discloses a system. (*See infra* §§ VI.A.2-VI.A.8.)

2. Element 1[A]

an athletic performance module configured to receive athletic activity data from a wirelessly-connected sensor worn on an appendage of a first user, wherein the first user is performing athletic activities at a first location; and

In Figure 5, Tagliabue discloses an “athletic data collection module 505” (red) corresponding to the claimed “athletic performance module.” (Ex. 1004, 11:45-47.) Module 505 is part of “athletic information collection and display device 501” (blue). (*Id.*)

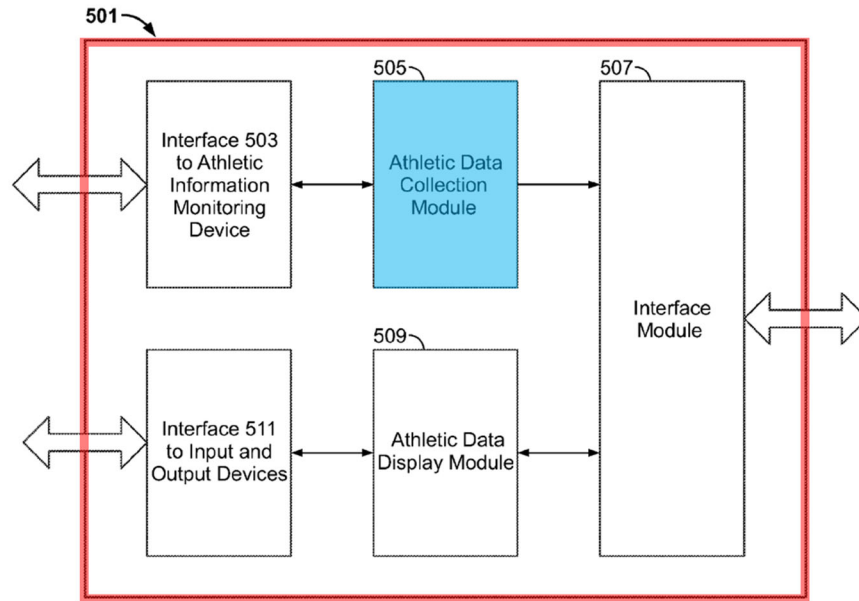
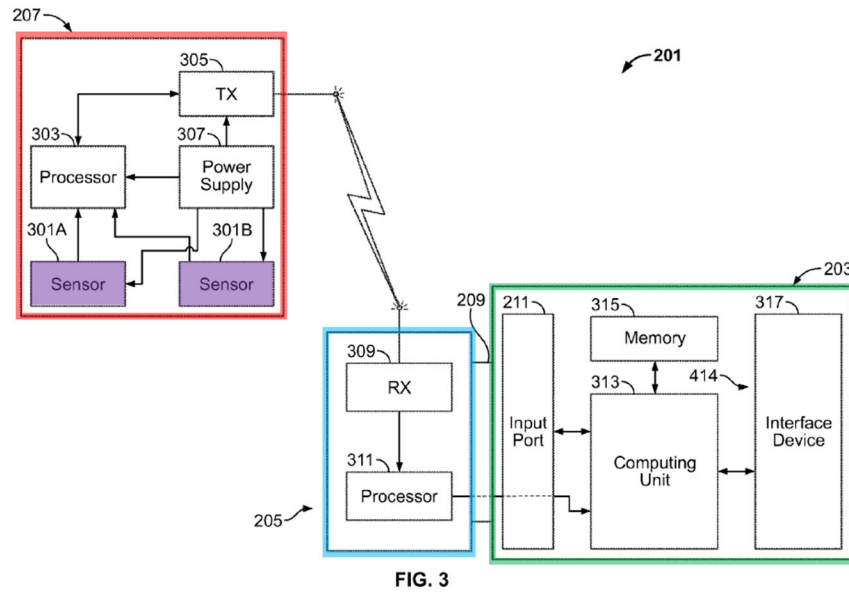


FIG. 5

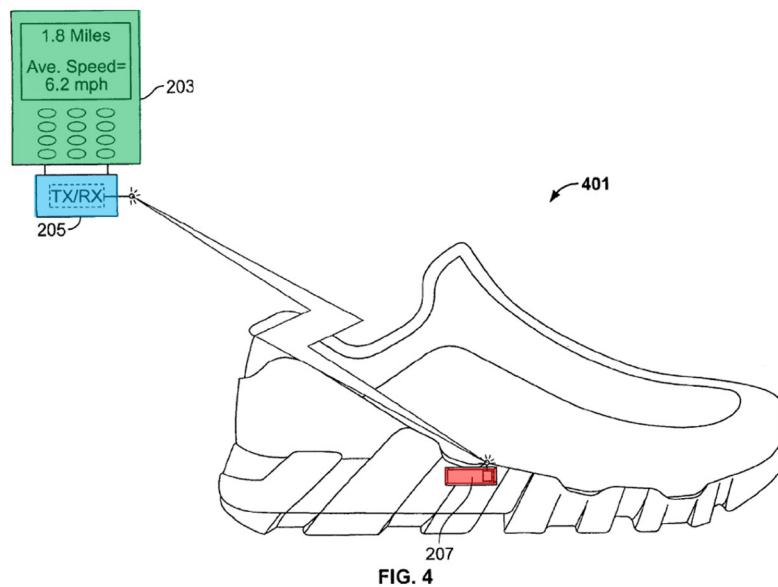
(*Id.*, Fig. 5 (annotated).)

Module 505 receives athletic activity data from a component of “athletic information monitoring device 201.” (*Id.*, 11:47-55.) Device 201, in turn, includes “athletic parameter measurement device 207 [red] [that] transmits signals to the electronic interface device 205 [blue] ... [that] provides the received information to the digital music player 203 [green].” (*Id.*, 7:32-38). Device 207 communicates wirelessly with Device 205, (*id.*, 9:25-31), and includes “one or more sensors 301 [purple] for measuring an athletic parameter associated with *a person wearing* or otherwise using the athletic parameter measurement device 207,” (*id.*, 7:39-43 (emphasis added).) Device 207 and/or its sensors 301A and 301B are the claimed “wirelessly-connected sensor.”



(*Id.*, Fig. 3 (annotated).)

A user wears Device 207 on an appendage. “[A]s shown in FIG. 4, the athletic parameter measurement device 207 may be located [in] the sole of a user’s shoe 401” (*Id.*, 7:50-52.)



(*Id.*, Fig. 4 (annotated).) Tagliabue also discloses incorporating Device 207 into a “watch.” (*Id.*, 11:12.) A user would wear a shoe on their foot and a watch on their wrist, which are both appendages. (Ex. 1008 at 86 (defining appendage: “2. *Biology* A part or organ, such as an arm, leg, tail, or fin, that is joined to the axis or trunk of a body”), 1942 (defining watch: “A small portable timepiece, especially one worn on the wrist”).)

Next, if Patent Owner contends this limitation requires real-time monitoring, Device 207 does so: “The athletic parameter measurement device 207 is carried or otherwise worn by a user to measure the desired athletic parameter while the user exercises.” (Ex. 1004, 7:47-50.) Finally, a user necessarily exercises at a “first location.”

3. Element 1[B]

a challenge module configured to:

Tagliabue teaches: “[A]thletic data display configuration device 601 [red] ... includes an athletic display configuration module 605 [blue]” (*Id.*, 13:11-12.)

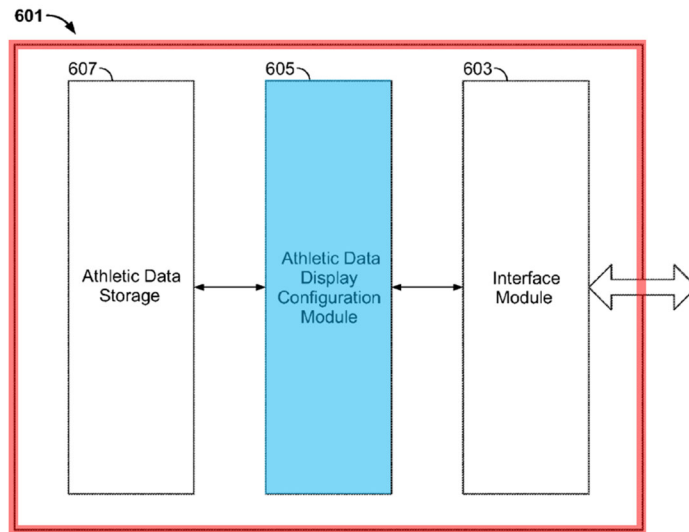


FIG. 6

(*Id.*, Fig. 6 (annotated).) Device 601 and its Module 605 correspond to the claimed “challenge module.” (*Infra* §§ VI.A.4-VI.A.8.)

4. Element 1[C]

receive information specifying a challenge, wherein the challenge includes a competition between the first user, and a second user performing athletic activities at a second location, different to, and remote from, the first location;

Athletic display configuration module 605 receives information specifying a challenge. Tagliabue discloses: “If a user wishes to establish a challenge regarding who can run a specified distance first, then the user activates the ‘Distance Race button 1303’” (red) in interface 1301 (blue). (Ex. 1004, 21:37-39.)

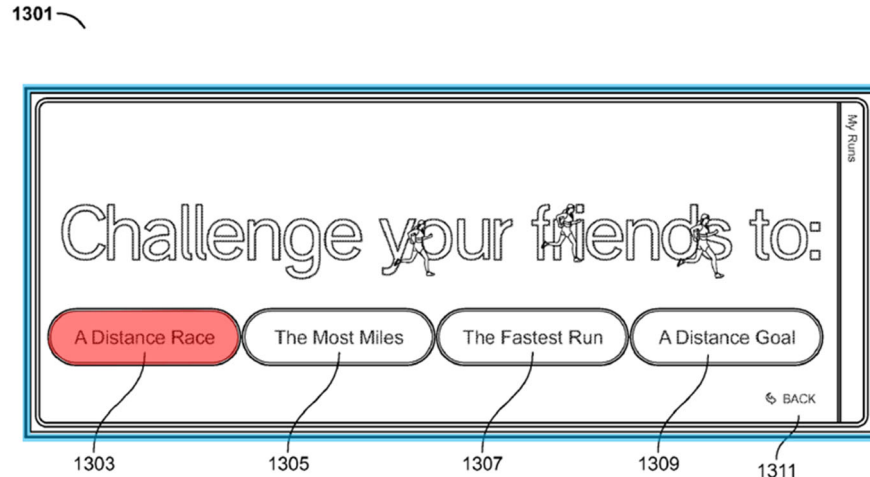


FIG. 13A

(*Id.*, Fig. 13A (annotated).) In response, “athletic data display configuration module 605 reconfigures user interface 1301 to include sub-interface 1313 [green].” (*Id.*, 21:39-41.)

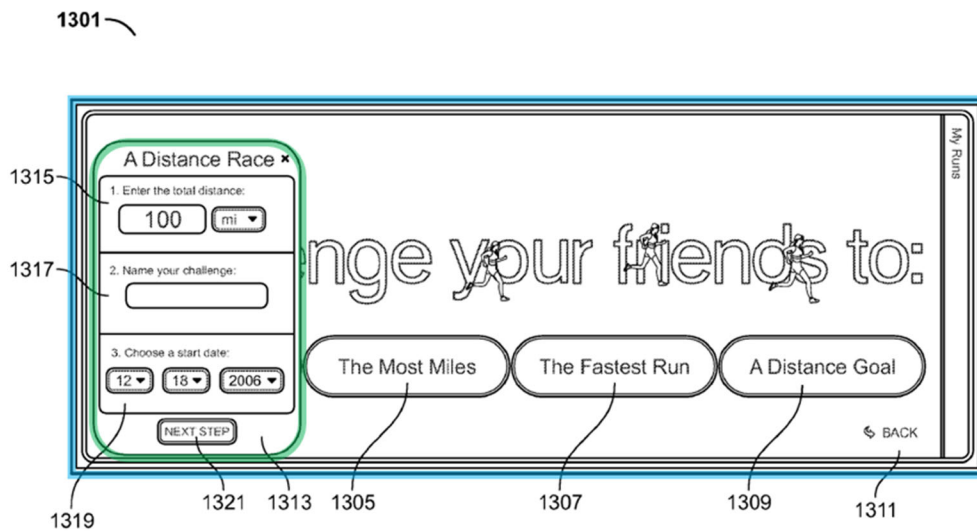


FIG. 13B

(*Id.*, Fig. 13B (annotated).) The fact that athletic data display configuration module 605 reconfigures interface 1301 in response to a user’s selection of “Distance Race button 1303” shows that it receives that selection.

Tagliabue also discloses that its users can be located remotely from one another. Device 601 receives data from each user's Device 501 "through a conventional network, such as the Internet." (*Id.*, 12:35-43.) For example, Tagliabue discloses "a network 701" where "a plurality of client devices 705 [blue] for collecting and/or displaying athletic data" transmit athletic activity data to athletic data display configuration device 601 (*red*). (*Id.*, 14:40-43; *see also id.*, 14:60-63.)

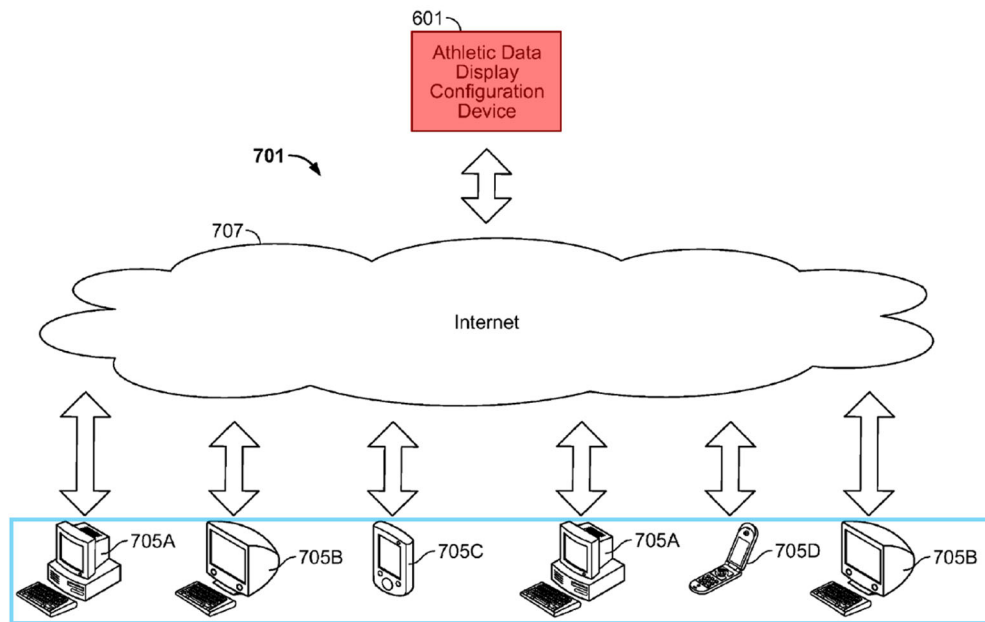


FIG. 7

(*Id.*, Fig. 7 (annotated).) Since computers can communicate over the Internet from anywhere on Earth, Tagliabue discloses that its users are located remotely from each other. (Ex. 1008 at 915 (defining Internet: "An interconnected system of networks that connects computers around the world").)

5. Element 1[D]

determine, from the received athletic activity data, a first amount of athletic activity performed by the first user;

Device 601 determines each user's athletic activity. For each user, it "aggregates the relevant data values in the collected athletic data." (Ex. 1004, 22:32-34.) For example, "if the challenge is a race to determine who can be the first to run 100 miles, for each participant the athletic data display configuration device 601 will sum the total distance value in each athletic data set collected for that participant" (*Id.*, 22:36-39.) That summed distance is "a first amount of athletic activity."

6. Element 1[E]

receive data from a second sensor indicating a second amount of athletic activity performed by the second user;

Tagliabue discloses receiving data from a second user. During a challenge, Device 601 "monitors the collected athletic data for each of the *participants*" (*Id.*, 22:32-33 (emphasis added).) That device receives data from Device 501, which receives data from Device 201, which contains Device 207. (*Id.*, 7:23-24, 12:35-39.)

7. Element 1[F]

determine whether the challenge has been met by the first user based on a comparison of the first amount of athletic activity performed by the first user and a second amount of athletic activity performed by the second user; and

Tagliabue discloses: “When a participant has a sum of his or her total distance values that matches or exceeds the specified challenge distance (and is the first invitee to do so), then the athletic data display configuration device 601 will identify that participant as the winner of the challenge.” (Ex. 1004, 22:39-43; *see also id.*, 23:32-36, 24:5-9, 24:45-49.) By confirming that the victor is the “the first invitee” to “match[] or exceed[] the specified challenge distance,” Device 601 compares multiple users’ athletic activity.

8. Element 1[G]

continuously generate and simultaneously communicate in real-time to the first user at the first location and the second user at the second location, an interface indicating whether the challenge has been met.

Tagliabue discloses notifying users whether a challenge has been met via a “special-purpose interface” (Ex. 1004, 22:45-50.) During the challenge, “the athletic data display configuration device 601 may additionally provide updates regarding the status of a participant relative to other participants.” (*Id.*, 22:54-56.) It “may configure and provide a user interface showing each participant’s progress toward the goal of the challenge using, e.g., bar graphs for each participant of the type previously described with regard to monitoring individual goals.” (*Id.*, 22:61-65.) As explained above, the competing users can be located remotely from each other. (*Supra* § VI.A.4.)

B. Claim 2

The system of claim 1, wherein the challenge is received from the second user.

Tagliabue discloses users inviting other users to participate in challenges.

(See Ex. 1004, 22:2-30.)

C. Claim 3

The system of claim 2, wherein the first user is prompted, by the challenge module, to accept the challenge.

Tagliabue discloses: “In response to the user activating the ‘Set Challenge’ button 1329, the athletic display configuration device 601 ... sends an email to each of the specified invitees ... contain[ing] ... an interactive prompt to join the challenge.” (Ex. 1004, 22:16-21.)

D. Claim 4

The system of claim 1, wherein the challenge comprises travelling a predetermined distance in a shortest amount of time.

Tagliabue discloses a “Distance Race,” which is “a challenge regarding who can run a specified distance first” (Ex. 1004, 21:37-39.)

E. Claim 5

The system of claim 1, wherein the challenge comprises travelling as far as possible within a predetermined time.

Tagliabue discloses a “Most Miles” race, which is “a challenge regarding who can run the most miles in a given period of time” (Ex. 1004, 22:67-23:2.)

F. Claim 6

The system of claim 1, wherein the challenge comprises travelling a predetermined distance in a predetermined time.

Tagliabue discloses a “Distance Goal” race, which is “a challenge regarding who can run a specified distance in a given period of time” (Ex. 1004, 24:14-16.)

G. Claim 7

The system of claim 1, wherein the challenge is defined in terms of a common unit used for multiple types of athletic activities.

Tagliabue discloses defining challenges in “miles.” (Ex. 1004, 22:35-36, 22:66-23:2.) Miles are a common unit used for multiple types of athletic activities. (Ex. 1001, 33:11 (“a common unit, for example miles run”).)

H. Claim 8

The system of claim 1, wherein the challenge is specified in terms of a unit in which the athletic activity is measured.

Tagliabue discloses defining challenges in terms of “miles.” (Ex. 1004, 22:35-36, 22:66-23:2.) It also discloses that Device 601 determines whether a user has run 100 miles, (*id.*, 22:35-41), from “the collected athletic data for each of the participants,” (*id.*, 22:32-33.) Thus, Tagliabue also discloses measuring user athletic activity in miles.

Additionally, Tagliabue discloses that Device 201 can include “accelerometers” that measure “total distance traveled.” (*Id.*, 8:45-53.) Tagliabue

incorporates by reference U.S. Patent No. 6,898,550 to Blackadar, (*id.*, 8:53-57, 9:4-6), which discloses a “foot-mounted unit 102 includ[ing] a solid-state accelerometer ...[,]” (Ex. 1009, 20:18-20.) Blackadar discloses using the accelerometer to detect distance in terms of “miles” by multiplying “foot contact times” by a constant. (*Id.*, 39:59-63; *see also id.*, 20:15-25, 26:4-7.) Thus, Tagliabue discloses that Device 201 can measure “total distance traveled” in miles using an accelerometer.

I. Claim 9

The system of claim 1, wherein the challenge includes a competition between a first athletic training facility and a second athletic training facility.

Tagliabue discloses “tournaments” between “entities 2620,” which include “gyms” and “fitness clubs.” (Ex. 1004, 31:37-43.) It depicts competing fitness clubs (**red**) in Figure 26:

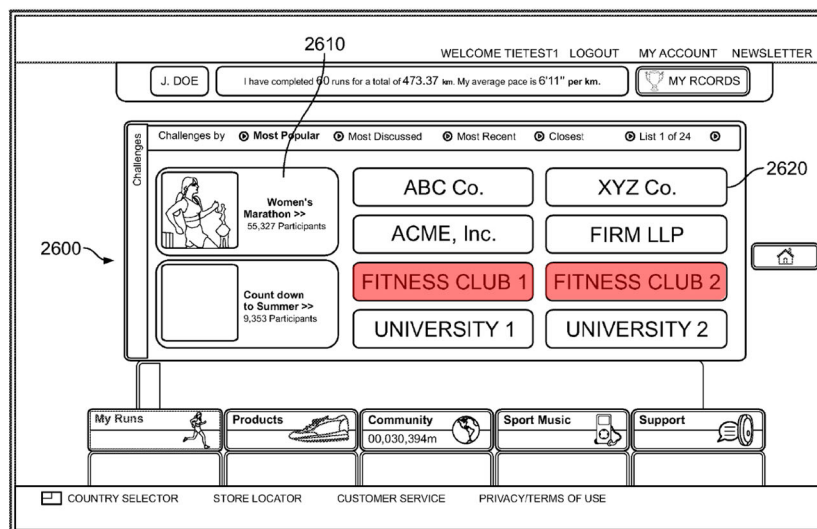


FIG. 26

(*Id.*, Fig. 26 (annotated).) Gyms and fitness clubs are athletic training facilities.

J. Claim 10

The system of claim 9, wherein the first and second athletic training facilities correspond to an athletic training facility provider.

Tagliabue discloses this additional limitation. As explained for claim 9, Tagliabue discloses competitions between “gyms” and “fitness clubs.” (*Supra* § VI.I.) “Gym” and “fitness club” encompass both individual gym and fitness club locations as well as gym and fitness club chains. (*See, e.g.*, Ex. 1001, 37:40-49 (distinguishing between “specific gym location[s] or branch[es]” and “gym chain[s]/ provider[s]”).) For example, “Gold’s Gym” refers to both individual “Gold’s Gym” franchises as well as the provider, Gold’s Gym International, Inc. Tagliabue’s disclosure of competitions between gym and fitness club chains meets claim 10 because “an athletic training facility provider” means “one or more” athletic training facility providers. *See KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351, 1356 (Fed. Cir. 2000).

K. Claim 11

1. Element 11[pre]

A method comprising:

If limiting, Tagliabue discloses a method. (*See infra* §§ VI.K.2-VI.K.6.)

2. Element 11[A]

receiving a prompt inviting a first user to participate in a challenge, wherein the challenge includes a competition between the first user performing athletic activities at a first location and a second user performing athletic

activities at a second location different to, and remote from, the first location;

Tagliabue discloses receiving a prompt. Once a user has “set” a challenge, “athletic data display configuration device 601 ... sends an email to each of the specified invitees ... [containing] the personal message and, e.g., an interactive prompt to join the challenge.” (Ex. 1004, 22:16-22.) “These types of email interactive prompts ... [were] well known in the art” (Ex. 1001, 22:26-29.)

Element 11[A]’s remaining limitations also appear in Element 1[C].

Tagliabue discloses them as explained above. (*Supra* § VI.A.4.)

3. Element 11[B]

determining an amount of athletic activity performed by the first user based on sensor data received from a sensor worn on an appendage of the first user; and

Element 11[B]’s limitations also appear in Elements 1[A] and 1[D].

Tagliabue discloses them as explained above. (*Supra* §§ VI.A.2, VI.A.5.)

4. Element 11[C]

receiving data from a second sensor indicative of an amount of athletic activity performed by the second user;

Element 11[C]’s limitations also appear in Element 1[E]. Tagliabue discloses them as explained above. (*Supra* § VI.A.6.)

5. Element 11[D]

determining whether the challenge has been met by the first user based on a comparison of the amount of athletic activity performed using the first user to the amount of athletic activity performed by the second user; and

Element 11[D]’s limitations also appear in Element 1[F]. Tagliabue discloses them as explained above. (*Supra* § VI.A.7.)

6. Element 11[E]

continuously generating and simultaneously communicating in real-time to the first user at the first location and the second user at the second location, an interface indicating whether the challenge has been met.

Element 11[E]’s limitations also appear in Element 1[G]. Tagliabue discloses them as explained above. (*Supra* § VI.A.8.)

L. Claim 12

The method of claim 11, wherein the sensor worn on the appendage of the first user comprises a location-determining sensor.

Tagliabue discloses that “athletic parameter measurement device 207 may be ... a Global Positioning Satellite (GPS) navigation device” (Ex. 1004, 10:27-29.)

M. Claim 13

The method of claim 11, wherein the sensor worn on the appendage of the first user comprises an accelerometer.

Tagliabue discloses that Device 207’s “sensors 301A and 301B may be accelerometers” (Ex. 1004, 7:39-44.)

N. Claim 14

The method of claim 11, wherein the challenge is received from the second user.

Claim 14 recites the same additional limitation as claim 2. Tagliabue discloses it as explained above. (*Supra* § VI.B.)

O. Claim 15

The method of claim 11, wherein the challenge is defined in terms of a common unit used for multiple types of athletic activities.

Claim 15 recites the same additional limitation as claim 7. Tagliabue discloses it as explained above. (*Supra* § VI.G.)

P. Claim 16

The method of claim 11, wherein the challenge is specified in terms of a unit in which the athletic activity is measured.

Claim 16 recites the same additional limitation as claim 8. Tagliabue discloses it as explained above. (*Supra* § VI.H.)

Q. Claim 17

The method of claim 11, wherein the challenge includes a competition between a first athletic training facility and a second athletic training facility.

Claim 17 recites the same additional limitation as claim 9. Tagliabue discloses it as explained above. (*Supra* § VI.I.)

R. Claim 18

The method of claim 17, wherein the first and second athletic training facilities correspond to an athletic training facility provider.

Claim 18 recites the same additional limitation as claim 10. Tagliabue discloses it as explained above. (*Supra* § VI.J.)

S. Claim 19

The method of claim 11, wherein the challenge includes a competition between a first athletic training facility provider and a second athletic training facility provider.

As explained for claim 10, Tagliabue's discloses tournaments between athletic training facility providers. (*Supra* § VI.J.)

T. Claim 20

The method of claim 17, wherein the first athletic training facility provider includes multiple athletic training facilities.

As explained for claim 10, Tagliabue's disclosure of "gym" and "fitness club" encompasses gym and fitness club chains. (*Supra* § VI.J.) Gym and fitness club chains included multiple athletic training facilities.

VII. GROUNDS 2 & 3: ARRASVUORI ANTICIPATES AND/OR RENDERS OBVIOUS CLAIMS 1-4, 7, 8, AND 11-16

A. Claim 1

1. Element 1[pre]

A system comprising:

If limiting, Arrasvuori teaches a system. (*See infra* §§ VII.A.2-VII.A.8.)

2. Element 1[A]

an athletic performance module configured to receive athletic activity data from a wirelessly-connected sensor worn on an appendage of a first user, wherein the first user is performing athletic activities at a first location; and

Arrasvuori discloses user "wireless nodes and/or computers" corresponding to the "wirelessly-connected sensor" and a computer server with software modules

corresponding to the “athletic performance module.” (Ex. 1005, ¶¶ 38-55, 90-99, Fig. 2.) It discloses transmitting data from the wireless nodes and/or computers to the computer server during “monitoring and feedback operations.” (*Id.*)

Wirelessly-connected sensor. In the first step of “monitoring and feedback operations,” Arrasvuori “[e]mploy[s] monitoring equipment” to collect athletic activity data about “real-world fitness tasks.” (*Id.*, ¶ 38, Fig. 2.)

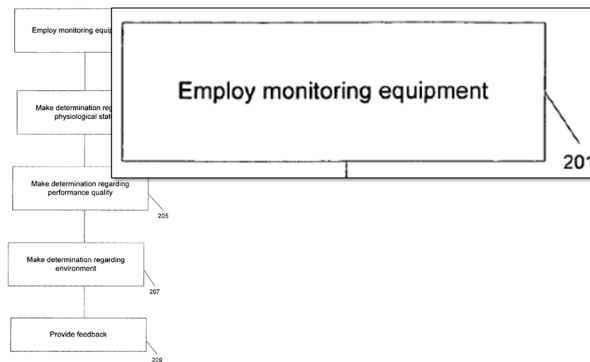


FIG. 2

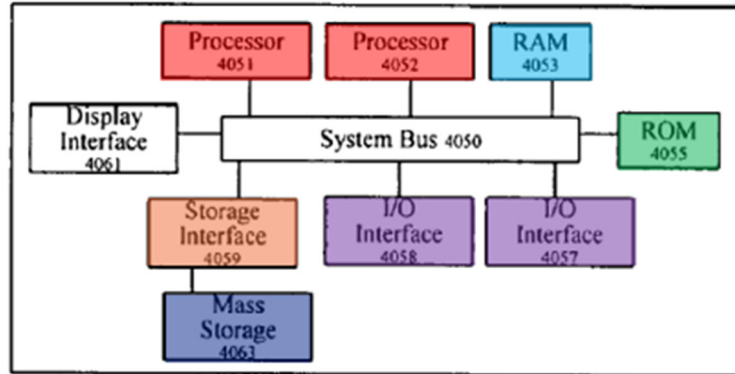
(*Id.*, Fig. 2 (enlarged).) The monitoring equipment includes “one or more sensors,” such as “Global Positioning System (GPS) hardware ... Radio Frequency Identification (RFID) tag interface hardware ... heart rate meter hardware ... electrocardiogram hardware ... pedometer hardware ... [or] skin conductance measuring hardware[.]” (*Id.*, ¶ 40.)

The monitoring equipment is “integrated into ... wireless nodes and/or other computers of users, and/or ... attached to bodies of users.” (*Id.*, ¶ 39.) “Users might ... wear their wireless nodes and/or other computers.” (*Id.*) For example, “computer ... and the like ... refer but are not limited to ... a computerized watch

....” (*Id.*, ¶ 90.) Watches are worn on wrists, which are appendages. (Ex. 1008 at 86 (defining appendage), 1942 (defining watch).)

Athletic performance module. The ’256 Patent describes an “athletic performance module” processing athletic activity data. (Ex. 1001, 32:24-43.) Separately, it describes an “athletic data collection module 505” that receives data from wirelessly connected sensors. (*E.g., id.*, 12:49-53.) It states: “The athletic data collection module 505 may be implemented by, for example, software instructions executed by a computing unit 113 of a computing device 101.” (*Id.*, 12:59-61.) It also states: “[C]omponents of various examples of the invention will be implemented using a programmable computing device executing firmware or software instructions, or by some combination of purpose-specific electronic circuitry and firmware or software instructions executing on a programmable computing device.” (*Id.*, 6:3-9.) Thus, “athletic performance module” encompasses at least software instructions executed on a computer.

Arrasvuori discloses an “athletic performance module.” It discloses a computer server containing executable software modules configured to receive athletic activity data from the wireless nodes and/or computers hosting the monitoring equipment. (Ex. 1005, ¶¶ 38, 55.) For example, Arrasvuori’s Figure 4 (cropped and annotated below) depicts a block diagram of a computer server “employable in various embodiments of the present invention.” (*Id.*, ¶ 91.)



(*Id.*, Fig. 4 (cropped and annotated).) Figure 4’s server includes “two processors 4051 and 4052 [red], random access memory 4053 [blue], read-only memory 4055 [green], input output (I/O) interfaces 4057 and 4058 [purple], storage interface 4059 [orange], and ... mass storage 4063 [navy].” (*Id.*, ¶ 91.) “Each of I/O interfaces 10077 [*sic*, 4057] and 10078 [*sic*, 4058] may, for example, be ... IEEE 802.11[standards] ... Bluetooth ... and/or other interface.” (*Id.*) IEEE 802.11 is a standard for wireless local area networking, including for wirelessly connecting a computer to a router that then connects to the Internet. (*Id.*, ¶ 37; Ex. 1003, ¶ 49.) Thus, the server is configured to wirelessly communicate with wireless nodes and/or other computers via I/O interfaces 4057 and 4058 during monitoring. (See Ex. 1005, ¶ 38.)

Arrasvuori’s server includes software modules that correspond to the claimed “athletic performance module.” Arrasvuori discloses “loading code onto the computer,” (Ex. 1005, ¶ 92), and the computer then “run[ning] one or more software modules designed to perform one or more of the above described

operations[,]” (*id.*, ¶ 93.) Those operations include, “[m]onitoring ... performed by ... servers” and “communication ... between a user wireless node and/or other computer and a server[.]” (*Id.*, ¶ 38; *see also id.*, ¶ 40.) Thus, the software module(s) are configured to receive athletic activity data from wireless nodes and/or computers hosting monitoring equipment.

Real-time monitoring. If Patent Owner contends this limitation requires real-time monitoring, Arrasvuori discloses it. The server and software modules perform “[f]eedback operations ... and/or might take into account various monitoring[,]” including providing “real-time feedback” (Ex. 1005, ¶ 49; *see also id.*, ¶¶ 51, 52, 93.) A POSITA would have understood that, to provide real-time feedback, Arrasvuori’s server and software modules monitor user data in real-time. (Ex. 1003, ¶ 69.)

First location. The server and software modules necessarily receive athletic activity data from a user at a “first location.” (*See also infra* § VII.A.4.)

3. Element 1[B]

a challenge module configured to:

The ’256 Patent describes hardware and software configured to perform the challenge module’s functions. (*See* Ex. 1001, 40:49-67.) “[A]thletic data display configuration device 601 ... includes an athletic display configuration module 605” (*Id.*, 13:50-51.) Module 605 can receive information specifying a challenge.

(*See id.*, 22:9-14.) Device 601 “monitors the collected athletic data for each of the participants,” (*id.*, 23:5-6), calculates each user’s progress toward the challenge, (*id.*, 23:6-12), “identif[ies] ... the winner of the challenge[,]” (*id.*, 23:15-16), and “notif[ies] each participant of the winner ... by displaying a special purpose interface ...[,]” (*id.*, 23:19-21). It can “provide a user interface showing each participant’s progress toward the goal of the challenge” (*Id.*, 23:34-36.) Thus, the claimed “challenge module” encompasses at least hardware and/or software performing the claimed functions. (*See id.*, 6:3-9.)

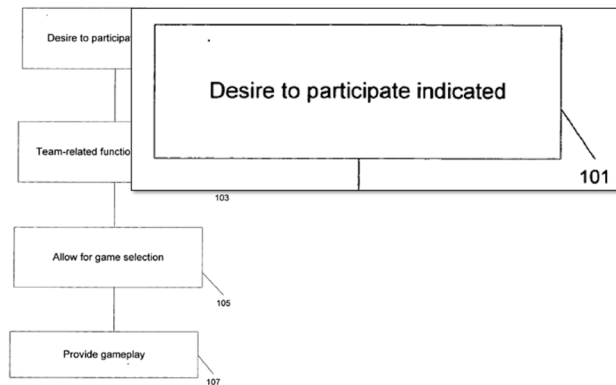
Arrasvuori’s server and software modules correspond to the claimed “challenge module.” Arrasvuori discloses that the server and software modules can receive a challenge from a user, determine the user’s athletic activity, receive athletic activity data from a second user, evaluate which user won a competition, and provide real-time feedback to multiple users. (*Infra* §§ VII.A.4-VII.A.8.) The computer server “may run one or more software modules designed to perform one or more of the above described operations.” (Ex. 1005, ¶ 93.)

4. Element 1[C]

receive information specifying a challenge, wherein the challenge includes a competition between the first user, and a second user performing athletic activities at a second location, different to, and remote from, the first location;

Receipt of challenge. The server receives information specifying a multiplayer challenge three times during “Game Initiation and Game Play Operations.” (Ex. 1005, ¶ 17.)

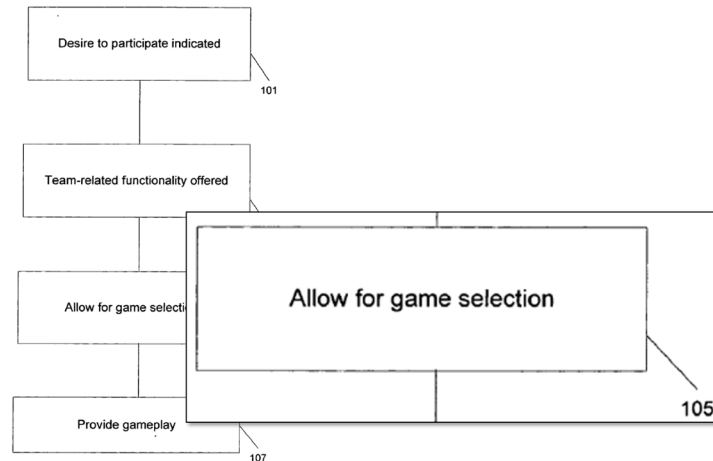
First, in step 101, “a user wishing to participate in a video game might indicate a desire to do so via her wireless node and/or other computer” (*Id.*)



(*Id.*, Fig. 1 (enlarged).) The video game “might ... be a multi-player video game ... wherein one or more players perform real-world fitness tasks” (*Id.*)

Arrasvuori teaches: “[V]arious of the above-discussed game initiation and game play operations might involve communication among one or more wireless nodes and/or other computers of users, and/or other wireless nodes and/or other computers (e.g., one or more servers).” (*Id.*, ¶ 37.) Thus, Arrasvuori’s server receives the user’s step 101 indication of a desire to participate. (Ex. 1003, ¶ 57.)

Second, in step 105, “the user might be able to select from one or more indicated games one or more games that she wished to play.” (Ex. 1005, ¶ 20.)



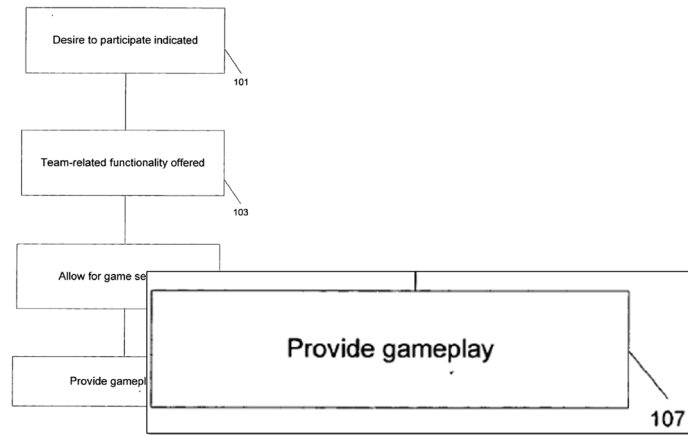
(*Id.*, Fig. 1 (enlarged).) The games include:

- “[A] medieval fantasy game [with] ... a number of stages. (*Id.*, ¶ 25.) One stage requires “a landmark be reached” by users “jogging and/or running ... a specified distance[.]” (*Id.*, ¶ 26; *see also id.*, ¶¶ 31, 51.)
- “[O]ne or more users might be requested to keep their heart rates within one or more specified ranges while performing real-world fitness tasks involving running, swimming, climbing stairs, and/or using exercise equipment.” (*Id.*, ¶ 29.)
- “[A] game-world triathlon competition involving real-world fitness tasks of swimming, running, and cycling.” (*Id.*, ¶ 36.)

Again, “various of the above-discussed game initiation and game play operations might involve communication among one or more wireless nodes and/or other computers of users, and/or ... one or more servers[.]” (*Id.*, ¶ 37.) Thus,

Arrasvuori’s server receives the user’s step 105 game selection. (Ex. 1003, ¶ 57.)

Third, Arrasvuori discloses the server receiving information specifying a challenge during gameplay of a simulated triathlon. (See Ex. 1005, ¶ 36.)



(*Id.*, Fig. 1 (enlarged).) During the triathlon, users also can “select the order in which they performed the fitness tasks ... Users might, for example, be able to indicate ... moving from one fitness task to another.” (*Id.*, ¶ 36.) A user’s selection of the running, swimming, or cycling challenge is “communicated from a user’s wireless node and/or other computer to a server.” (*Id.*)

Alternatively, if Patent Owner contends that Arrasvuori does not expressly disclose the server receiving a user's selection of any of the above challenges, it would have been obvious to configure the server to receive it. Arrasvuori discloses that its users compete in multiplayer video games. (*See id.*, ¶¶ 2, 13, 17, 24, 36.) A POSITA would have understood that the server can host those video games. (Ex. 1003, ¶ 60 (citing Ex. 1005, ¶¶ 36, 37).) A POSITA would have been motivated to configure Arrasvuori's server hosting the video games to receive the

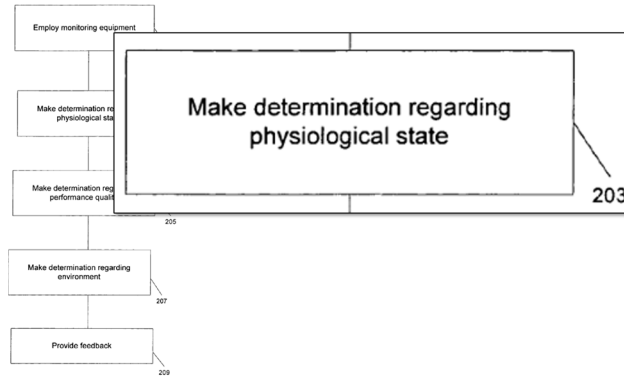
user's step 101, 105, and 107 selections so that the server knew which games or tasks to present to the user. (*See id.*, ¶ 61; *see also id.*, ¶¶ 59-60.) A POSITA would have reasonably expected this modification to succeed because the user wireless nodes already communicate with “one or more servers” during game initiation and game play operations. (*Id.*, (quoting Ex. 1005, ¶ 37).)

Remote competitors. Arrasvuori's users can be “dispersed throughout the world.” (Ex. 1005, ¶ 19.) Alternatively, Arrasvuori inherently discloses that competing users can be located remotely from each other. Arrasvuori's “game initiation and game play operations might involve communication among one or more wireless nodes and/or other computers of users, and/or other wireless nodes and/or other computers (e.g., one or more servers).” (*Id.*, ¶ 37.) Those computers can communicate via “the Internet.” (*Id.*) Computers can communicate via the Internet from anywhere on Earth. (Ex. 1008 at 915 (defining Internet).)

5. Element 1[D]

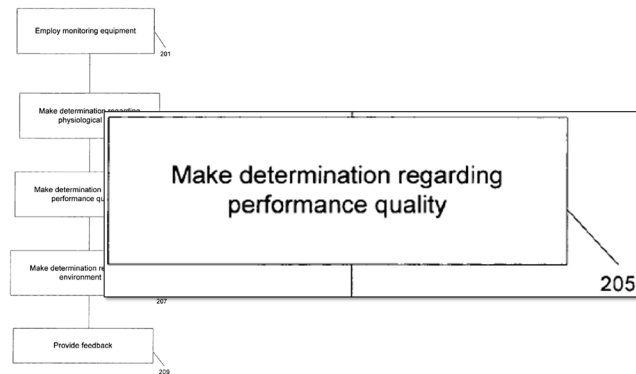
determine, from the received athletic activity data, a first amount of athletic activity performed by the first user;

Arrasvuori twice discloses that the server determines amounts of athletic activity from the received data. (*See* Ex. 1005, ¶¶ 38-47, Fig. 2.) First, the server can make “one or more determinations regarding the physiological state of a user performing a real-world fitness task” in step 203 of monitoring and feedback operations. (*Id.*, ¶ 42; *id.*, ¶¶ 41, 55.)



(*Id.*, Fig. 2 (enlarged).) For example, it can determine “whether or not the user had reached a target heart rate” (*Id.*, ¶ 42)

Second, the server can determine “how well the fitness task was performed” in step 205 of monitoring and feedback operations. (*Id.*, ¶ 43; *see also id.*, ¶¶ 41, 55.)



(*Id.*, Fig. 2 (enlarged).) For example, the server can determine “the speed with which the fitness task was completed” (*Id.*, ¶ 46.)

6. Element 1[E]

receive data from a second sensor indicating a second amount of athletic activity performed by the second user;

As discussed above, Arrasvuori teaches a server that receives data from sensors that monitor athletic activity by a user. (*Supra* § VII.A.2.) The server receives athletic activity data from multiple users’ sensors: “Monitoring might, for instance, relate to *users* performing real-world fitness tasks ... Monitoring might, for example, be performed by one *or more* wireless nodes and/or other computers (e.g., servers ...).” (Ex. 1005, ¶ 38 (emphasis added).)

7. Element 1[F]

determine whether the challenge has been met by the first user based on a comparison of the first amount of athletic activity performed by the first user and a second amount of athletic activity performed by the second user; and

The server determines whether a challenge has been met in one or more of steps 203, 205 and 209 of monitoring and feedback operations:

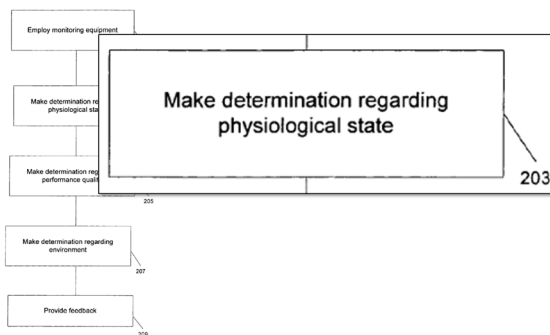


FIG. 2

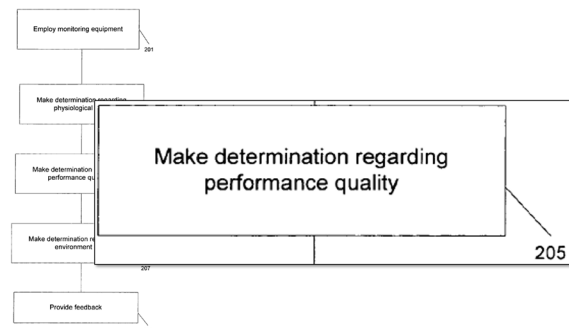


FIG. 2

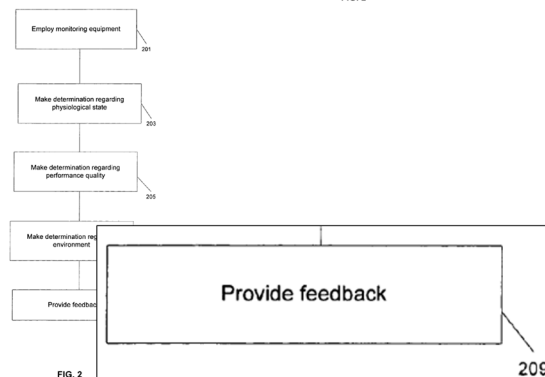


FIG. 2

(Ex. 1005, Fig. 2 (enlarged).)

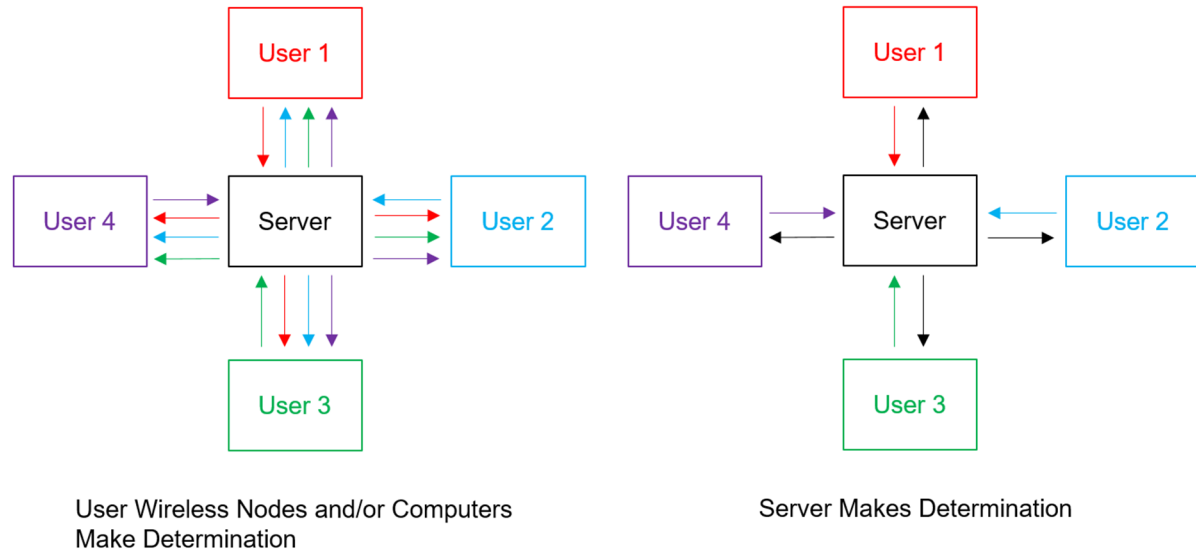
In steps 203 and 205, the server can determine each user's "physiological state[,]" (*id.*, ¶ 42), and "how well the fitness task was performed[,]" (*id.*, ¶ 43; *see also id.*, ¶¶ 41, 55.) In step 209, the server can translate its determinations into feedback in the form of leaderboards and other graphical representations of relative user performance. (*Id.*, ¶¶ 48-53.) These include depictions of "users that are performing and/or that have performed the real-world fitness task ... positioned relative to one another [and/or] a goal corresponding to the task." (*Id.*, ¶ 52.) Both forms of feedback indicate whether a challenge has been met based on a comparison of users' athletic activity and require a determination of the same.

Alternatively, if Patent Owner contends that Arrasvuori does not teach this limitation, then it would have been obvious to configure the server to determine whether a challenge was met. Arrasvuori discloses that both (1) user wireless nodes and/or computers or (2) the server can make determinations and provide feedback. (*Id.*, ¶¶ 41, 49.) Where, as here, an "ordinary artisan would ... be left with two design choices ... [e]ach of these two design choices is an obvious combination of prior art elements." *ACCO Brands Corp. v. Fellowes, Inc.*, 813 F.3d 1361, 1367 (Fed. Cir. 2016).

Additionally, a POSITA would have been motivated to configure the server to determine whether the challenge was met to conserve resources. (Ex. 1003, ¶

75.) The server, (Ex. 1005, ¶ 57), in the context of “Compensatory Operations,” (*id.*, ¶ 56), can already “[d]etermin[e] ... which user was to receive the higher score” between “two users perform[ing] a real-world fitness task of running a certain distance ...[,]” (*id.*, ¶ 72.) Configuring the server to do so in the context of monitoring and feedback operations avoids duplicating that function into each user wireless node and/or computer. (*See* Ex. 1003, ¶ 75.)

Second, this configuration also would reduce the amount of raw data moved through the system and processing power required by each wireless node and/or computer. (*Id.*, ¶¶ 75, 76.) If each wireless node and/or computer determined whether the challenge was met, then every user would have to receive every other user’s athletic activity data. (*Id.*, ¶ 75.) Alternatively, if the server determined whether the challenge was met, each wireless node and/or computer would only have to receive processed data from the server. (*Id.*) These scenarios are shown below.

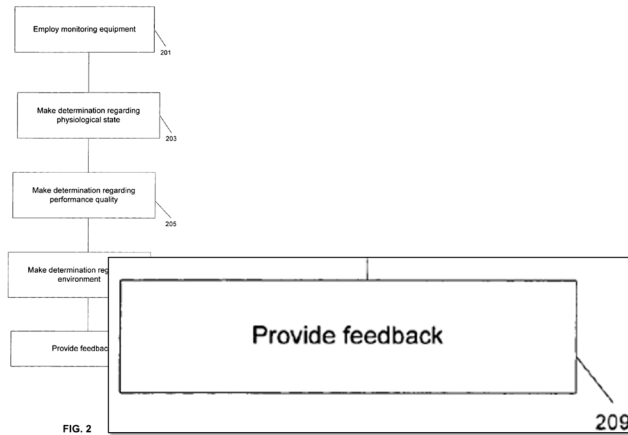


Finally, a POSITA would have expected this configuration to succeed. (*Id.*, ¶ 77.) As Dr. Lynch explains, “centralizing data processing at a server was well understood by 2008.” (*Id.*) Arrasvuori also already discloses that a server can perform monitoring and feedback operations, further confirming that it could be configured to determine whether a challenge was met. (*See, e.g.*, Ex. 1005, ¶¶ 38, 41, 49, 50.)

8. Element 1[G]

continuously generate and simultaneously communicate in real-time to the first user at the first location and the second user at the second location, an interface indicating whether the challenge has been met.

The server “generate[s] and simultaneously communicate[s]” whether a challenge has been met to users during step 209 of monitoring and feedback operations:



(Ex. 1005, Fig. 2 (annotated); *see also id.* ¶ 49.)

Generating the interface. The server generates the interface that it sends to the user wireless nodes and/or computers. Arrasvuori discloses: “[A] server might make leaderboards available for receipt by user wireless nodes and/or other computers, which in turn could provide leaderboard display to their users via GUIs and/or other interfaces.” (*Id.*, ¶ 50.) The phrase “make leaderboards available for receipt” and the verb “display” confirm that the server generates the leaderboards.

Arrasvuori also discloses: “[D]isplay might be provided wherein graphical indicators corresponding to users that are performing ... the real-world fitness task are positioned relative to one another [and/or] a goal corresponding to the task” (*Id.*, ¶ 52; *see also id.*, ¶¶ 49, 53, 55.) “Such display might ... be **presented** via one or more GUIs and/or other interfaces provided by wireless nodes and/or other computers of users.” (*Id.* ¶ 52 (emphasis added); *see also id.*, ¶ 51.) Arrasvuori’s use of “presented” coupled with its disclosure that “[f]eedback operations might ... be performed by ... servers” again confirms that the server generates the graphical

indicators. (*Id.*, ¶ 49; *see also id.*, ¶ 55; Ex. 1003, ¶ 72). Both leaderboards and a graphical interface showing relative positions of competitors indicate whether a challenge was met.

Alternatively, it would have been obvious to configure the server to generate the claimed interface. Arrasvuori discloses that either the user wireless nodes and/or the computer or the server perform the feedback step. (Ex. 1005, ¶ 49.) Where, as here, an “ordinary artisan would ... be left with two design choices ... [e]ach of these two design choices is an obvious combination of prior art elements.” *ACCO Brands*, 813 F.3d at 1367. Additionally, it would have been obvious to centralize processing of each competitor’s data at the server for the reasons discussed above. (*Supra* § VII.A.7.)

Communicating the interface. Under either of the express disclosure or obviousness theories detailed above, the server also simultaneously communicates the interface to multiple users at different locations in “real-time.” Arrasvuori explains the server can perform feedback operations and that, “in various embodiments, real-time feedback might be provided.” (Ex. 1005, ¶ 49.) For example, Arrasvuori discloses that “a server might make leaderboards available for receipt by user wireless nodes and/or other computers” (*Id.*, ¶ 50.)

As another example, Arrasvuori discloses that “*during performance* of a real-world fitness task, display might be provided wherein graphical indicators

corresponding to users that *are performing* ... the real world fitness task are positioned relative to one another, a goal corresponding to the task” (*Id.*, ¶ 52 (emphases added).) “Such display might ... be presented via [interfaces] provided by wireless nodes and/or other computers of users.” (*Id.*) A POSITA would have understood from these disclosures that the server communicates the interfaces to users as it generates them. (Ex. 1003, ¶ 72.)

Remote competitors. As explained above, the competing users can be located remotely from each other. (*Supra* § VII.A.4.)

B. Claim 2

The system of claim 1, wherein the challenge is received from the second user.

As explained above, Arrasvuori’s server receives information specifying a challenge from each user. (*Supra* § VII.A.4.) Thus, Arrasvuori’s server receives the challenge from multiple users.

Alternatively, if Patent Owner contends Arrasvuori does not disclose this limitation, it would have been obvious to configure the server to transmit challenges between users as explained for claim 11. (*Infra* § VII.G.2.) In that configuration, the server would receive the challenge from any user.

C. Claim 3

The system of claim 2, wherein the first user is prompted, by the challenge module, to accept the challenge.

Arrasvuori discloses prompts inviting users to participate in challenges. For example: “[I]n various embodiments, a user’s wireless node and/or other computer might ... present her with a portal for viewing games available for play” (Ex. 1005, ¶ 34.) That “user[’s] wireless node[] and/or other computer[] might act as [a] server[.]” (*Id.*, ¶ 37.) Because Arrasvuori’s “games” include inter-user athletic challenges, (*see supra* § VII.A.4), the server prompts a user to accept a challenge by presenting the user with a portal including such a challenge.

Alternatively, if Patent Owner contends Arrasvuori does not expressly disclose this limitation, it would have been obvious to configure the server to prompt users to accept challenges as explained for claim 11. (*Infra* § VII.G.2.)

D. Claim 4

The system of claim 1, wherein the challenge comprises travelling a predetermined distance in a shortest amount of time.

Arrasvuori discloses “a game-world triathlon competition involving real-world fitness tasks of swimming, running, and cycling.” (Ex. 1005, ¶ 36.) A triathlon is a contest of travelling a predetermined distance in the shortest amount of time. (*See, e.g.*, Ex. 1012, 2 (describing a triathlon race: “[s]wim a mile ... cycle ... for 24 miles ... run ... 6.2 miles”).)

E. Claim 7

The system of claim 1, wherein the challenge is defined in terms of a common unit used for multiple types of athletic activities.

Arrasvuori discloses using beats-per-minute as a common unit across multiple types of athletic activities. It discloses a challenge involving “one or more users keeping their heart rates within one or more specified ranges while performing ... running, swimming, climbing stairs, and/or using exercise equipment.” (Ex. 1005, ¶ 29.) Heart rate means “[t]he number of heartbeats per unit time, usually expressed as beats per minute.” (Ex. 1008, 810.)

Additionally, it would have been obvious to define other challenges in terms of miles. Arrasvuori discloses requiring “that a landmark be reached” involving “running a specified distance,” (Ex. 1005, ¶ 26), and a “game-world triathlon,” which is defined by distance run, swum, and cycled, (*id.*, ¶ 36; Ex. 1012 at 2.) Miles are one of a “finite number of identified, predicable solutions” for defining athletic races, *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 402 (2007), others of which include yards, meters, kilometers, seconds, minutes, and hours. (*See, e.g.*, Ex. 1012, 2.) A POSITA would have been motivated to define these challenges in terms of miles because miles are a common unit of measurement for athletic races. (Ex. 1001, 33:11; *see also* Ex. 1008, 1114 (defining mile: “4. *Sports* A race that is one mile long”).) Further, a POSITA would have been motivated to define these challenges in terms of miles because Arrasvuori’s monitoring equipment includes GPS hardware and pedometers, both of which can measure distance in miles. (Ex. 1005, ¶ 40; Ex. 1003, ¶ 67 (citing Ex. 1009, 39:59-63).)

F. Claim 8

The system of claim 1, wherein the challenge is specified in terms of a unit in which the athletic activity is measured.

As explained above, Arrasvuori's system measures heart rate, or BPM, (*supra* § VII.A.2), and specifies challenges in terms of the same, (*supra* § VII.A.4.)

Additionally, Arrasvuori discloses measuring distance, (*supra* § VII.A.2), and specifies challenges in terms of distance, (*supra* § VII.A.4.) Arrasvuori's monitoring equipment includes GPS hardware and pedometers, both of which could be used to measure distances in miles. (Ex. 1005, ¶ 40; Ex. 1003, ¶ 67.) As explained above, it would have been obvious to define challenges in miles. (*Supra* § VII.E.)

G. Claim 11

1. Element 11[pre]

A method comprising:

If limiting, Arrasvuori teaches a method. (*See infra* §§ VII.G.2-VII.G.6.)

2. Element 11[A]

receiving a prompt inviting a first user to participate in a challenge, wherein the challenge includes a competition between the first user performing athletic activities at a first location and a second user performing athletic activities at a second location different to, and remote from, the first location;

Arrasvuori discloses prompts: “[U]sers might be presented with real-world fitness tasks in the context of a game-world athletic competition.” (Ex. 1005, ¶ 36;

see also id., ¶¶ 18, 22, 25-29; Ex. 1003, ¶ 62.) “[I]n various embodiments, a user’s wireless node and/or other computer might ... present her with a portal for viewing games available for play” (Ex. 1005, ¶ 34.) Prompts were “well known known in the art.” (Ex. 1001, 23:2.)

Alternatively, it would have been obvious to configure a user’s wireless node to prompt a user to participate in a challenge. (*See* Ex. 1003, ¶¶ 62-64.) Arrasvuori discloses that “[t]he wireless node and/or other computer might, for instance, allow the users ... to invite one or more users to join one or more new and/or existing teams” (Ex. 1005, ¶ 18.) It would have been trivial to configure a wireless node to issue similar invitations to join challenges. (Ex. 1003, ¶ 64.)

A POSITA would have been motivated to adopt this configuration to shorten the waiting time between a user’s selection of a challenge and the start of the challenge. (*Id.*, ¶ 63.) For example, if a challenge required ten users, instead of waiting for nine other users to independently select the challenge, a user could issue invitations to other users. (*Id.*) Issuing invitations to other users would increase the likelihood that the other users would select the challenge and therefore decrease the time necessary to accrue ten users. (*Id.*)

Element 11[A]’s remaining limitations also appear in Element 1[C]. Arrasvuori discloses them as explained above. (*Supra* § VII.A.4.)

3. Element 11[B]

determining an amount of athletic activity performed by the first user based on sensor data received from a sensor worn on an appendage of the first user; and

Element 11[B]'s limitations also appear in Elements 1[A] and 1[D].

Arrasvuori discloses them as explained above. (*Supra* §§ VII.A.2, VII.A.5.)

4. Element 11[C]

receiving data from a second sensor indicative of an amount of athletic activity performed by the second user;

Element 11[C]'s limitations also appear in Element 1[E]. Arrasvuori

discloses them as explained above. (*Supra* § VII.A.6.)

5. Element 11[D]

determining whether the challenge has been met by the first user based on a comparison of the amount of athletic activity performed using the first user to the amount of athletic activity performed by the second user; and

Element 11[D]'s limitations also appear in Element 1[F]. Arrasvuori

discloses and/or renders them obvious as explained above. (*Supra* § VII.A.7.)

6. Element 11[E]

continuously generating and simultaneously communicating in real-time to the first user at the first location and the second user at the second location, an interface indicating whether the challenge has been met.

Element 11[E]'s limitations also appear in Element 1[G]. Arrasvuori

discloses and/or renders them obvious as explained above. (*Supra* § VII.A.8.)

H. Claim 12

The method of claim 11, wherein the sensor worn on the appendage of the first user comprises a location-determining sensor.

Arrasvuori's monitoring equipment can include "one or more sensors," including "GPS[] hardware" (Ex. 1005, ¶ 40.) The monitoring equipment can be integrated into a watch worn on a user's wrist. (*Supra* § VII.A.2.)

I. Claim 13

The method of claim 11, wherein the sensor worn on the appendage of the first user comprises an accelerometer.

Arrasvuori's monitoring equipment can include "one or more sensors." (Ex. 1005, ¶ 40.) It "might, for instance, include ... pedometer hardware" (*Id.*) A pedometer is "[a]n instrument that gauges the approximate distance traveled on foot by registering the number of steps taken." (Ex. 1008, 1296.) One type of pedometer includes an accelerometer. (Ex. 1009, 2:1-15.) As discussed above, the monitoring equipment can be integrated into a watch worn on a user's wrist. (*Supra* § VII.A.2.)

J. Claim 14

The method of claim 11, wherein the challenge is received from the second user.

Claim 14 recites the same additional limitation as claim 2. Arrasvuori discloses and/or renders it obvious as explained above. (*Supra* § VII.B.)

K. Claim 15

The method of claim 11, wherein the challenge is defined in terms of a common unit used for multiple types of athletic activities.

Claim 15 recites the same additional limitation as claim 7. Arrasvuori discloses and/or renders it obvious as explained above. (*Supra* § VII.E.)

L. Claim 16

The method of claim 11, wherein the challenge is specified in terms of a unit in which the athletic activity is measured.

Claim 16 recites the same additional limitation as claim 8. Arrasvuori discloses and/or renders it obvious as explained above. (*Supra* § VII.F.)

VIII. GROUND 4: CLAIM 13 IS OBVIOUS OVER ARRASVUORI IN VIEW OF ELLIS

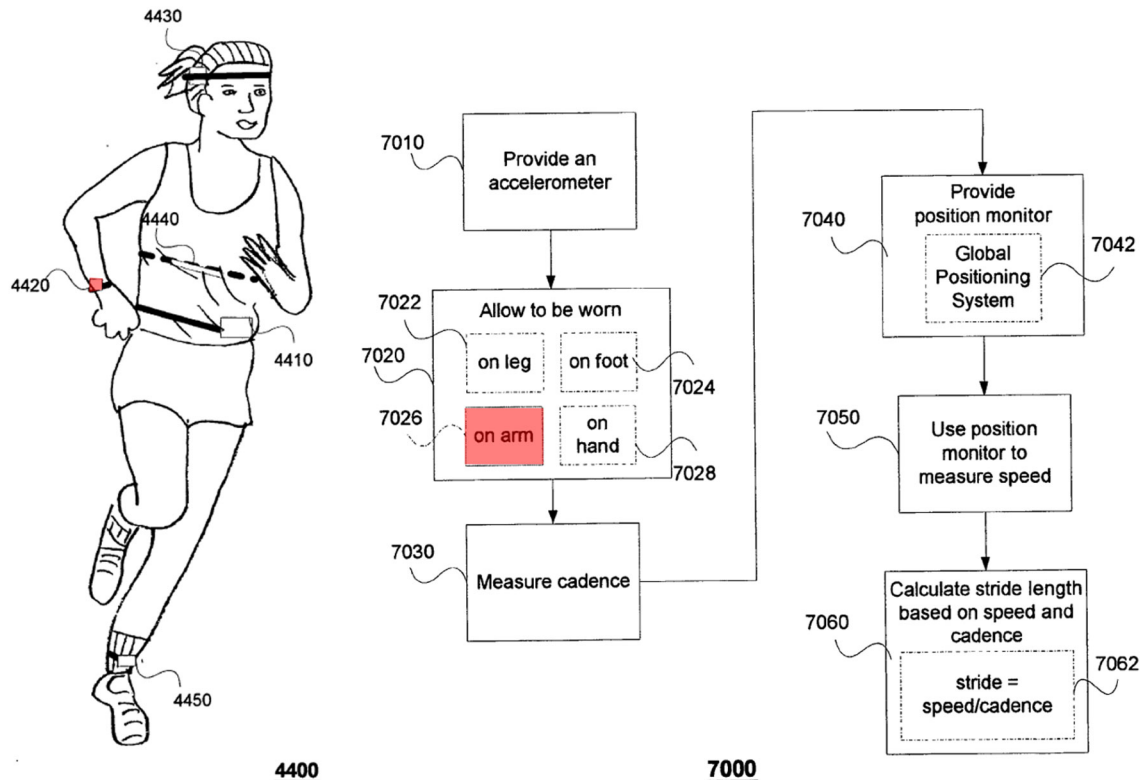
A. Claim 13

The method of claim 11, wherein the sensor worn on the appendage of the first user comprises an accelerometer.

If Patent Owner contends Arrasvuori does not disclose an accelerometer, claim 13 would have been obvious over Arrasvuori in view of Ellis. Specifically, it would have been obvious to add Ellis' accelerometer to Arrasvuori's computerized watch.

Arrasvuori and Ellis provide ample teaching, suggestion, and motivation for such a combination. Both references provide solutions for facilitating remote, real-time athletic competitions between users. (*See, e.g., supra* §§ II.C.2, II.C.4, VII.A-VII.L.) Both references also disclose sensors worn on users' wrists that wirelessly

transmit athletic activity data to other computers. (*See, e.g., supra* § VII.A.2; Ex. 1007, 64:12-13, 84:12-18, Figs. 44, 70.) Arrasvuori discloses a “computerized watch,” (Ex. 1005, ¶ 90), while Ellis discloses wrist-worn INC 4420 (red) containing an accelerometer, (Ex. 1007, 64:12-13; *see also id.*, 84:9-18.)



(Ex. 1007, Figs. 44, 70 (annotated).) Thus, Arrasvuori and Ellis are closely related in subject matter.

A POSITA would have understood that Arrasvuori and Ellis’ systems and methods are highly flexible and configurable. Arrasvuori’s disclosed embodiments “are merely provided to illustrate the invention and should not be construed as limitations of the invention’s scope.” (Ex. 1005, ¶ 98.) Arrasvuori states that its

monitoring equipment can include “one ***or more*** sensors.” (*Id.*, ¶ 40 (emphasis added).) Similarly, Ellis states, “other embodiments are possible ... includ[ing] uses, functions, components, and combinations thereof that may not be fully described.” (Ex. 1007, 105:3-5.) Because Ellis’ accelerometer is already integrated into an INC “worn on a wristband,” (*id.*, 64:12-13, Fig. 44), it would have been trivial to add it to Arrasvuori’s computerized watch, (Ex. 1003, ¶¶ 108, 109 (citing Exhibits 1010, 1011).) Thus, a POSITA would have reasonably expected the combination to succeed. (*Id.*)

A POSITA would have been motivated to add Ellis’ accelerometer to Arrasvuori’s computerized watch to provide an athlete with additional information about their performance. (*See id.*, ¶¶ 106, 107.) For instance, Arrasvuori discloses challenging a user with “[c]ertain exercise details,” (Ex. 1005, ¶ 29), and determining whether “a fitness task was performed in an acceptable manner and/or how well the fitness task was performed[,]” (*id.*, ¶ 43.) Ellis’s accelerometer provides a way to monitor those metrics. (Ex. 1007, 64:12-13, *see also id.*, 84:12-18.) Ellis discloses using data from an “accelerometer[] mounted on the arm” to calculate an athlete’s “cadence,” “form,” and stride length. (*Id.*, 64:16-17, 84:19-22, 84:29-30.)

IX. GROUND 5: CLAIMS 1, 7, 8, 11-13, 15, AND 16 ARE OBVIOUS OVER WATTERSON IN VIEW OF ARRASVUORI

A. Claim 1

1. Element 1[pre]¹

If limiting, Watterson teaches a “system 250.” (*E.g.*, Ex. 1006, 27:58-60.)

2. Element 1[A]

Athletic performance module. As explained in Ground 2, the claimed “athletic performance module” encompasses at least software instructions executed on a computer. (*Supra* § VII.A.2.)

Watterson’s “communication module 254” corresponds to the claimed “athletic performance module.” Communication module 254 is one of system 250’s “hardware and/or software modules” (Ex. 1006, 29:35-36; *see also id.* 27:54-60, 28:50-56.) It “may act as and take the form of a server, with associated hardware and/or software modules” (*Id.*, 30:50-52.) It “is capable of transmitting and receiving data from user modules 252a-252n.” (*Id.*, 29:31-33.) “[U]ser modules 252a-252n [red] communicate with communication module 254 [blue], via network 16 [green].” (*Id.*, 29:28-29; *see also id.*, 6:28-30 (“Network 16 ... may be a ... wireless network”).)

¹ Element labels for claim 1 correspond to the labels previously used for claim 1 in Sections VI.A and VII.A.

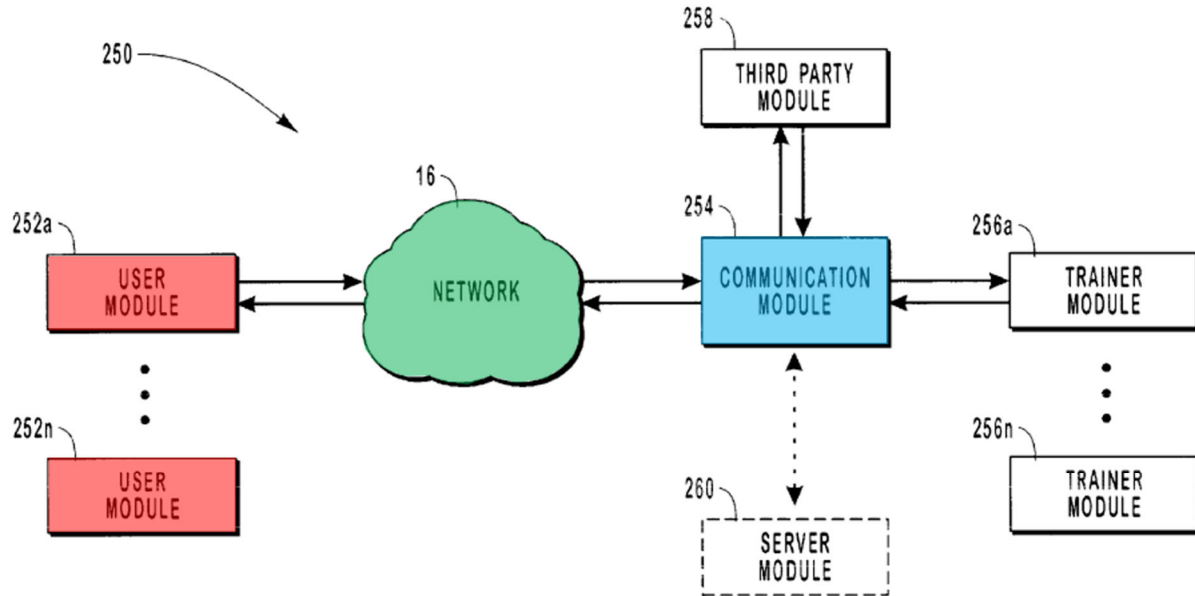


FIG. 10

(*Id.*, Fig. 10 (annotated).)

Alternatively, Watterson’s “communication user interface module 272” corresponds to the claimed “athletic performance module.” Communication user interface module 272 (purple) is the element of “communication module 254 ... that transceives data ... between user module 252 and communication module 254.” (*Id.*, 33:33-38; *see also id.*, 30:50-53.)

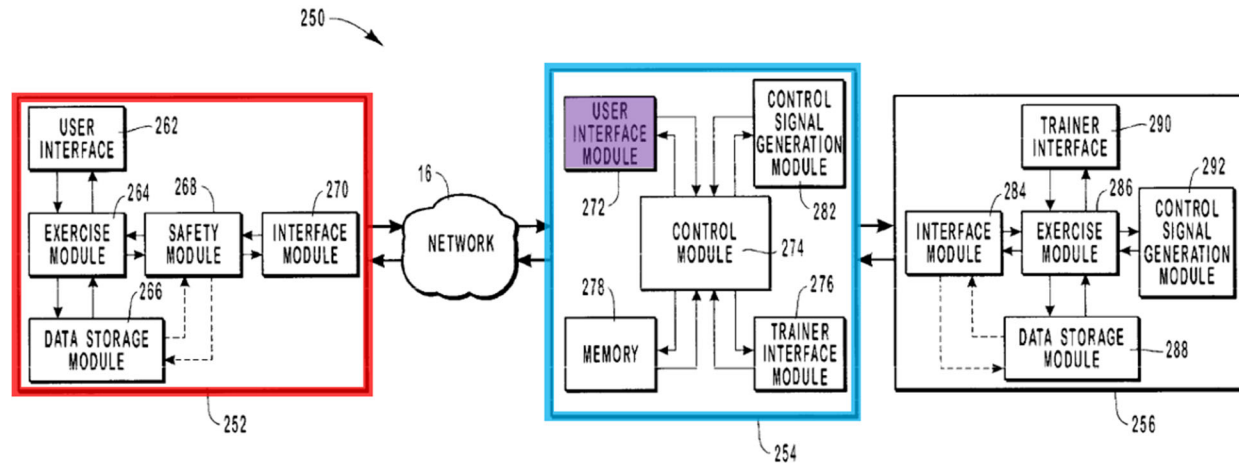


FIG. 11

(*Id.*, Fig. 11 (annotated).) It “may include various hardware and/or software modules” (*Id.*, 33:41-44.)

Wirelessly connected sensor. Watterson’s “pulse watch” corresponds to the claimed wirelessly connected sensor. (*See id.*, 19:6; *see also id.*, 18:62-19:7, 33:38-40.) It is one of treadmill 12’s “other sensors that gather various other operating parameters, such as but not limited to, maximum pulse and heart rate, average pulse and heart rate, target heart rate, length of workout session, and the like.” (*Id.*, 25:17-20; *see also id.*, 31:5-6, 31:30-35.) Treadmill 12 is one form of user modules 252a-252n. (*Id.*, 25:10-12.) User modules 252a-252n wirelessly transmit athletic activity data to communication module 254 and communication user interface module 272. (*See, e.g., id.*, 29:29-36, 32:48-65, 33:5-7, 33:32-38, Figs. 10, 11.)

Alternatively, it would have been obvious to use Arrasvuori's computerized watch, which included "heart rate meter hardware," as the claimed wirelessly connected sensor. (*See* Ex. 1005, ¶ 40; *see also id.*, ¶¶ 39, 90.) Computerized watches with sensors were well understood by the early-2000s. (*See, e.g., id.*; *see also e.g.*, Ex. 1003, ¶ 109; Ex. 1007, 17:4-5, 42:10-16, 64:10-19, 84:12-26, Figs. 19, 44, 70.) Swapping Arrasvuori's computerized watch for Watterson's pulse watch was a "mere substitution of one element for another known in the field" *KSR*, 550 U.S. at 416.

Worn on an appendage. Watches are worn on wrists, which are appendages. (Ex. 1008 at 86 (defining appendage), 1942 (defining watch).)

Real-time monitoring. If Patent Owner contends this limitation requires real-time monitoring, Watterson discloses it. Watterson discloses a "personalized training module 312," another part of communication module 254, (*id.*, 35:6-10, 35:26-34, Figs. 12, 17A), that hosts users "rac[ing] one against the other, while viewing graphical representations of the distance, time, and speed of the other competitors," (*id.*, 41:46-48.) In the combination set forth below, apparent speed is a function of actual velocity and heart rate. (*Infra*, § IX.A.5.) Because communication module 254 intermediates between individual user modules, it would have to receive each user's actual velocity and heart rate data in real time for competitors to view graphical representations of other competitors. (*See e.g.*,

id., 10:48-58, 29:30-36, 41:57-60, 42:56-64; Ex. 1003, ¶¶ 87, 88.) The same is true for communication user interface module 272, which is the part of communication module 254 that receives data from user modules 252a-252n. (See Ex. 1006, 33:33-37.)

First location. Communication module 254 and communication user interface module 272 necessarily receive athletic activity data from a user at a first location. (See also *infra* § IX.A.4.)

3. Element 1[B]

As explained above, the claimed “challenge module” encompasses at least hardware and/or software performing the claimed functions. (*Supra* § VII.A.3.)

Watterson’s communication module 254 and its hardware and/or software modules correspond to the claimed “challenge module.” Communication module 314’s hardware and/or software modules include “an iFit.com website 300 [red][,]” (Ex. 1006, 35:6-8, 35:16-17), which itself includes “personal training module 312 [blue] [and] competition module 314 [green] ...[,]” (*id.*, 35:32, 35:13-15.)

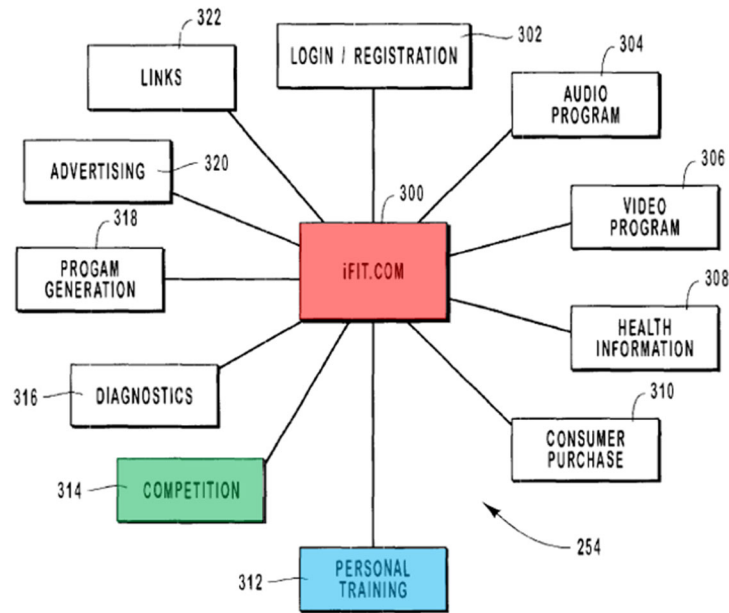


FIG. 12

(*Id.*, Fig. 12 (annotated).) As explained below, either these elements perform each of the challenge module’s claimed functions or it would have been obvious to modify them to do so. (*Infra* §§ IX.A.4-IX.A.7.)

4. Element 1[C]

Watterson’s competition module 314 receives information specifying an athletic challenge. “Competition module 314 enables one or more individuals to engage in competitive exercise programming with one another” (Ex. 1006, 40:18-21.) “[A] user selects the particular race types that they wish to engage in, as depicted by block 400 [red] [of Figure 17A].” (*Id.*, 40:30-31.)

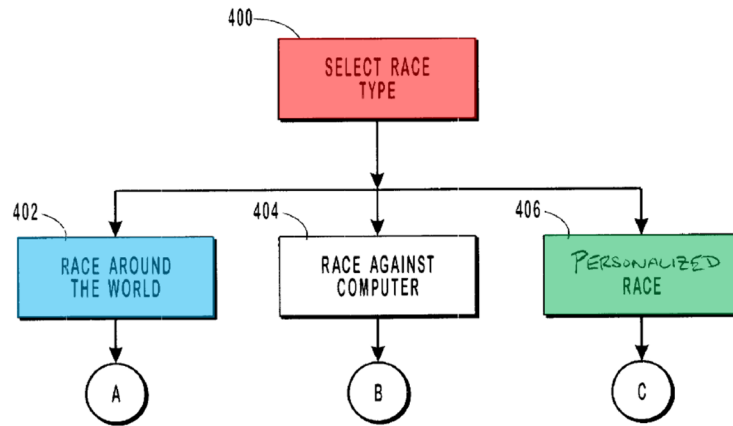


FIG. 17A

(*Id.*, Fig. 17A (annotated).) Both the “race around the world” (blue) and “personalized race” (green) modes are athletic competitions between users. (*Id.*, 40:37-47, 41:9-16, 41:42-48.)

Watterson discloses users competing from different and remote locations. “[C]ommunication module 254 may act as and take the form of a server,” (*id.*, 30:50-51), hosting the iFit website 300 and competition module 314, (*id.*, 35:6-7, 35:26-34.) User modules 252a-252n communicate with the server / communication module 254 via the Internet. (*See, e.g., id.*, 6:28-31, 29:28-29, 30:50-56; *see also* Ex. 1008 at 915 (defining Internet).) Thus, competing user modules 252a-252n can be “distantly located one with another, such as at a number of user’s homes.” (Ex. 1006, 28:61-66.)

5. Element 1[D]

This limitation is obvious over a combination of Watterson and Arrasvouri. In the combination, Watterson’s software normalizes competing users’ velocities

by their heart rates. (*See* Ex. 1003, ¶¶ 115-116.) Communication module 254 computing apparent velocity as a function of heart rate and actual velocity is a determination of “a first amount of athletic activity performed by the first user” based on the received heart rate data.

The combination. Arrasvuori’s discloses normalizing virtual performance according to competitor physical fitness levels: “[I]n the case where two users performing the real-world fitness task each traveled the same real-world distance within a certain elapsed time, the user associated with the lower fitness level might be depicted as having gone further.” (Ex. 1005, ¶ 60.) A POSITA would have combined this disclosure with Watterson’s personalized race by changing how Watterson’s software determined user speed during a personalized race so that a user’s apparent velocity equaled the multiple of the user’s actual speed and heart rate divided by a constant. (Ex. 1003, ¶¶ 115, 116.) Thus, if two users ran the same distance in the same amount of time, the user with the higher heart rate (and lower fitness level) would appear to travel further. (*Id.*)

Because Watterson’s communication module 254 intermediates between user modules 252a-252n during the personalized race, a POSITA would have tasked either communication module 254 or the user modules 252a-252n with the normalization calculation. (*See* Ex. 1006, 10:48-58, 29:30-36, 41:57-60, 42:56-64; Ex. 1003, ¶¶ 87, 88.) Where, as here, an “ordinary artisan would ... be left with

two design choices ... [e]ach of these two design choices is an obvious combination of prior art elements.” *ACCO Brands*, 813 F.3d at 1367.

Reasonable expectation of success. A POSITA would have reasonably expected the combination to succeed. (See Ex. 1003, ¶¶ 115-117.) A POSITA would have understood that Watterson and Arrasvuori’s systems and methods are highly flexible and configurable. Watterson discloses that “[t]he described embodiments are to be considered in all respects only as illustrative and not restrictive.” (Ex. 1006, 49:33-34.) It discloses that its competition module 314, which enables the personalized race, “may have various other configurations.” (*Id.*, 42:56-58.) Similarly, Arrasvuori’s disclosed embodiments “are merely provided to illustrate the invention and should not be construed as limitations of the invention’s scope.” (Ex. 1005, ¶ 98.) Modifying Watterson’s software to multiply and divide variables would have been trivial. (Ex. 1003, ¶ 117.)

Motivation to Combine. Watterson and Arrasvuori provide ample motivation for the combination. (See Ex. 1003, ¶¶ 111-114.) Watterson explains: “One common challenge with home exercise equipment is motivating the purchaser to use the device on a consistent and ongoing basis” (Ex. 1006, 1:26-28.) Its solution is athletic competitions: “[C]ompetitive exercise programming motivates the users to exercise on a more regular basis” (*Id.*, 40:23-24.)

But Watterson's solution is flawed. Watterson admits that some participants in a spin class, for example, cannot perform the same exercises as others: "The master may selectively choose groups of participants based on various criteria, such as participant's heart rates, and change those participants exercise program, while maintaining other participants at the original or different exercise level." (*Id.*, 49:7-11.) Watterson's athletic competitions are unlikely to motivate users who lack others with whom to compete. (*See id.*, 40:23-24.)

Arrasvuori solves this problem by normalizing each user's performance by their physical fitness level. (*See* Ex. 1005, ¶ 57.) For example, Arrasvuori describes normalizing movement of indicators of user position in a virtual race: "[I]n the case where two users performing the real-world fitness task each traveled the same real-world distance within a certain elapsed time, the user associated with the lower overall fitness level might be depicted as having gone further." (*Id.*, ¶ 60) Thus, Arrasvuori enables users to compete with one another regardless of their relative fitness levels. (*Id.*, ¶ 57.)

A POSITA would have looked to Arrasvuori for this solution because it is closely related in subject matter to Watterson. Both references relate to facilitating remote, real-time athletic competitions between users. (*See, e.g., supra* §§ II.C.2, II.C.3, VII.A-VII.L, A-G.) Both references also disclose and/or render obvious a computer receiving athletic activity data from wirelessly-connected sensors,

determining which user won a challenge, generating real-time feedback, and communicating that feedback to users. (*See supra* §§ VII.A.2-VII.A.8, 2-7.) And both references identify “heart rate” as a proxy for physical fitness. (*See* Ex. 1005, ¶ 84; Ex. 1006, 49:7-11.) Thus, it would have been obvious to modify Watterson’s personalized race as described above.

6. Element 1[E]

In Watterson’s personalized race, communication module 254 intermediates between user modules 252a-252n and therefore receives multiple users’ data from their sensors. (*See, e.g.*, Ex. 1006, 10:48-58, 29:30-36, 41:57-60, 42:56-64; Ex. 1003, ¶¶ 87, 88, 94.)

7. Elements 1[F] & 1[G]

Watterson discloses determining whether a challenge was met based on a comparison of user athletic activity, continuously generating an interface reflecting that comparison, and communicating it to users at different locations in real time. During a “live on live” personalized race, users “view[] graphical representations of the distan[ce], time, and speed of the other competitors.” (Ex. 1006, 41:44-48.) Specifically, users can view “a racing track that shows a relative position of each competitor one with another,” i.e., whether the challenge was met. (*Id.*, 42:4-5.)

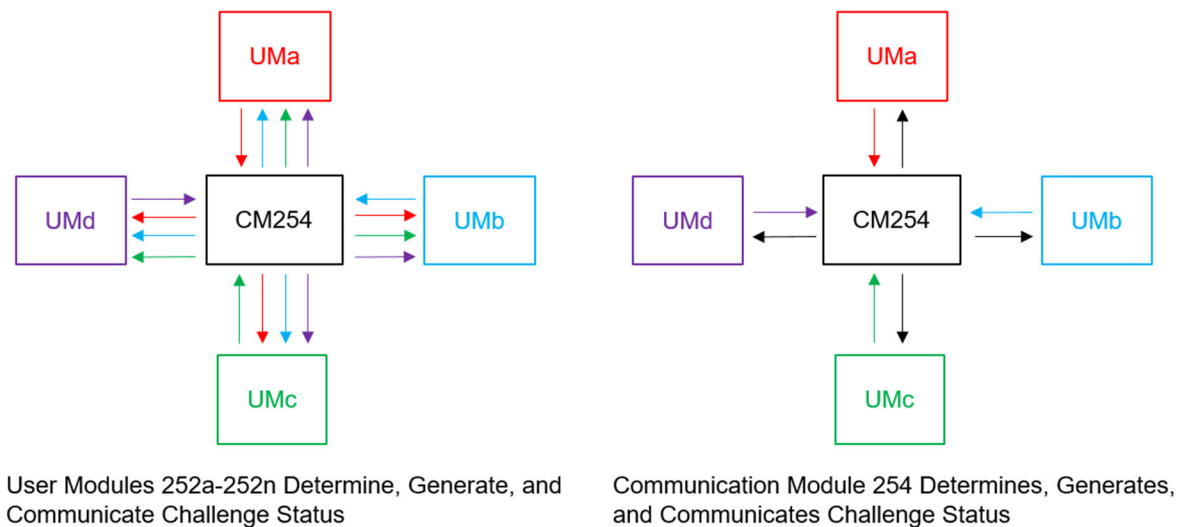
It would have been obvious to configure communication module 254 to conduct each of the determining, generating, and communicating steps. Because

communication module 254 intermediates between user modules 252a-252n during the personalized race, either communication module 254 or the user modules 252a-252n conducts each step. (*See id.*, 10:48-58, 29:30-36, 41:57-60, 42:56-64; Ex. 1003, ¶¶ 87, 88.) Where, as here, an “ordinary artisan would ... be left with two design choices ... [e]ach of these two design choices is an obvious combination of prior art elements.” *ACCO Brands*, 813 F.3d at 1367.

Additionally, a POSITA would have been motivated to configure communication module 254 to perform each of the determining, generating, and communicating steps to conserve resources. Competition module 314, within communication module 254, already compares user athletic performance, including “distance traveled by the user,” in the race around the world. (Ex. 1006, 40:48-57.) It then “deliver[s] comparison data to communication module 254 [which] ... deliver[s] a graphical representation of the user’s exercise, distance, times, speed, and other information compared against other competitors to the user” (*Id.*, 40:56-61.) Configuring communication module 254 to also compare user performance, generate a graphical representation, and communicate it to users during the personalized race would avoid duplicating those functions into user modules 252a-252n. (Ex. 1003, ¶ 98.)

This configuration would also reduce the amount of data moved through system 250 and the processing power required by each individual module 252.

(*Id.*, ¶ 99.) If user modules 252a-252n performed the determining or generating steps, every user would have to receive every other user's athletic activity data and then process the data into graphical interfaces. (*Id.*) Alternatively, if communication module 254 performed each step, each user module 252a-252n would only have to receive communication module 254's graphical representation summarizing user activity. (*Id.*) These scenarios are shown below:



A POSITA would have reasonably expected this configuration to succeed. (*Id.*, ¶ 100.) As Dr. Lynch explains, “centralizing data processing at a server was well-understood by 2008.” (*Id.*) Further, Watterson already discloses that communication module 254 can perform these functions in the race around the world embodiment, showing that a POSITA would configure it to do so for the personalized race embodiment. (Ex. 1006, 40:53-57, 40:58-61.)

Finally, as explained above, competing user modules 252a-252n can be “distantly located one with another, such as at a number of user’s homes.” (*Id.*, 28:61-66; *see also supra* § IX.A.4.)

B. Claim 7

It would have been obvious to define Watterson’s personalized race in miles. Miles are a common unit used for multiple types of athletic activities. (Ex. 1001, 33:11; *see also* Ex. 1008, 1114 (defining mile: “4. *Sports* A race that is one mile long”).) They are one of a “finite number of identified, predicable solutions” for defining athletic races, *KSR*, 550 U.S. at 402, others of which include yards, meters, kilometers, seconds, minutes, and hours, (*see, e.g.*, Ex. 1012, 2.) A POSITA would have been motivated to define the personalized race in terms of miles, specifically, because communication module 254 can measure distance in “miles,” (*see, e.g.*, Ex. 1006, 25:10-20, 40:40-47), and Watterson already defines its race around the world in “miles,” (*id.*, 40:44-47.)

C. Claim 8

As explained for Claim 7, it would have been obvious to define a personalized race in terms of miles. (*Supra* § IX.B.) Communication module 254 can measure distance in “miles.” (*See, e.g.*, Ex. 1006, 25:10-20, 40:40-47.)

D. Claim 11

1. Element 11[pre]²

If limiting, Watterson teaches a method. (*See infra* §§ IX.D.2-IX.D.6.)

2. Element 11[A]

The '256 patent admits that prompts were “well known known in the art.” (Ex. 1001, 23:2.) Watterson discloses receiving a prompt via a “calendar module 384,” shown below. “In the personalized race, two or more individuals schedule a live on live session, such as in the private room [red] of personal training module 312” (Ex. 1006, 41:43-46.) “[P]ersonal training module 312 includes a scheduling module 380 [blue] that enables various individuals to schedule times to ... optionally perform a live workout program.” (*Id.*, 39:12-14.) “Scheduling module 380 ... communicates with a calendar module 384 [green]” (*Id.*, 39:24-25.) “[C]alendar module 384 may automatically send a message [purple] to the user’s mailbox [yellow], thereby providing the user with information regarding the particular private room scheduled and a reminder of the schedule time.” (*Id.*, 40:12-16.) Figure 16 depicts “a schematic representation of

² Element labels for claim 11 correspond to the labels previously used for claim 11 in Sections VI.K and VII.G.

the various illustrative functional modules of personal training module 312”

(*Id.*, 39:10-12.)

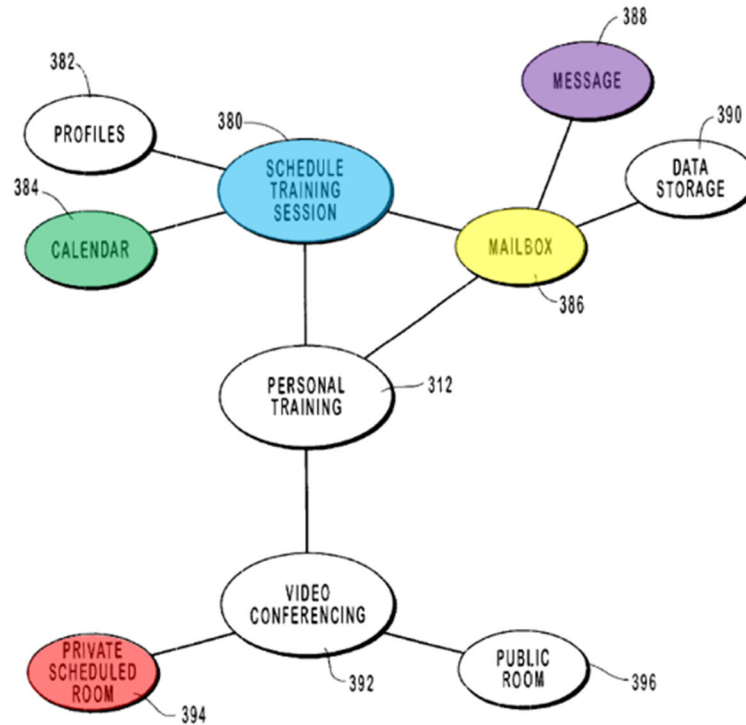


FIG. 16

(*Id.*, Fig. 16 (annotated).)

Watterson also discloses communication module 254 and iFit.com website 300 providing a user with a prompt: “[C]ommunication module 254 or iFit.com website 300 may deliver notifications of upcoming special group exercise session, or other information related to the user and/or exercising.” (*Id.*, 39:41-44.)

Element 11[A]’s remaining limitations appear in Element 1[C]. Watterson discloses them as explained above. (*Supra* § IX.A.4.)

3. Element 11[B]

Element 11[B]’s limitations appear in Elements 1[A] and 1[D]. Watterson discloses and/or renders them obvious as explained above. (*Supra* §§ IX.A.2, IX.A.5.)

4. Element 11[C]

Element 11[C]’s limitations appear in Element 1[E]. Watterson discloses them as explained above. (*Supra* § IX.A.6.)

5. Element 11[D]

Element 11[D]’s limitations appear in Element 1[F]. Watterson discloses and/or renders them obvious as explained above. (*Supra* § IX.A.7.)

6. Element 11[E]

Element 11[E]’s limitations appear in Element 1[G]. Watterson discloses and/or renders them obvious as explained above. (*Supra* § IX.A.7.)

E. Claims 12 & 13

A POSITA would have understood that computerized watches, such as Watterson’s pulse watch, often included multiple sensors. (*See, e.g.*, Ex. 1003, ¶ 109 (computerized watches with accelerometers were well known).) For example, Arrasvouri’s computerized watch could include “GPS hardware ... heart rate meter hardware ... [and] pedometer hardware” (Ex. 1005, ¶ 40; *see also id.*, ¶¶ 39, 90.) Ellis’ INCs, which could be wrist-worn computers, could include accelerometers, heart rate meters, and location-determining sensors. (*See, e.g.*,

Ex. 1007, 17:4-5, 42:10-16, 64:10-19, 84:12-26, Figs. 19, 44, 70.) Thus, Watterson's disclosure of a pulse watch meets these additional limitations.

Alternatively, in the configuration substituting Arrasvuori's computerized watch for Watterson's pulse watch, (*supra* § IX.A.2), Arrasvuori's computerized watch includes the claimed sensors, (*see* Ex. 1005, ¶¶ 39, 40, 90.)

F. Claim 15

Claim 15 recites the same additional limitation as claim 7. Watterson discloses and/or renders it obvious as explained above. (*Supra* § IX.B.)

G. Claim 16

Claim 16 recites the same additional limitation as claim 8. Watterson discloses and/or renders it obvious as explained above. (*Supra* § IX.C.)

X. MANDATORY NOTICES

A. Real Party-in-Interest

Pursuant to 37 C.F.R. § 42.8(b)(1), the real parties-in-interest in this proceeding are lululemon athletica inc., lululemon athletica canada inc., lululemon usa inc., and Curiouser Products, Inc. Only Petitioner has funded this Petition and has full and exclusive control over this proceeding.

B. Related Matters

Pursuant to 37 C.F. R. § 42.8(b)(2), Petitioner identifies *Nike, Inc. v. lululemon athletica inc. et al.*, S.D.N.Y. Case No. 1:22-cv-00082-AJN as a related matter. Patent Owner is asserting the '256 patent against Petitioner in that case.

Pursuant to 37 C.F.R. § 42.104(a), Petitioner certifies that the '256 patent is available for *inter partes* review. Petitioner also certifies that it is not barred or estopped from requesting an *inter partes* review challenging the patent claims on the grounds identified in this Petition.

C. Lead and Back-Up Counsel and Service Information

Pursuant to 37 C.F.R. § 42.8(b)(3), Petitioner identifies the following counsel (and a power of attorney accompanies this Petition).

Lead Counsel for Petitioner	Backup Counsel for Petitioner
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Pursuant to 37 C.F.R. § 42.8(b)(4), service information for lead and back-up counsel is provided above. Petitioner consents to electronic service by email to Lululemon-Nike-IPR@mofo.com.

The USPTO is authorized to charge any required fees, including the fee as set forth in 37 C.F.R. § 42.15(a) and any excess claim fees, to Deposit Account No. 03-1952 referencing docket no. 57931-00000.08.

XI. CONCLUSION

For the reasons set forth above, Petitioner requests judgment cancelling claims 1-20 of U.S. Patent No. 9,278,256.

Dated: November 9, 2022

Respectfully submitted,

/Diek O. Van Nort/

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Certification of Word Count (37 C.F.R. §42.24)

I hereby certify that this Petition for *Inter Partes* Review has 13,903 words (as counted by the “Word Count” feature of the Microsoft Word™ word-processing system), exclusive of “a table of contents, a table of authorities, mandatory notices under § 42.8, a certificate of service or word count, or appendix of exhibits or claim listing.”

Dated: November 9, 2022

By: /Diek O. Van Nort/
Diek O. Van Nort

Certificate of Service (37 C.F.R. §42.6(e)(4) and 42.205(a))

I hereby certify that the attached Petition for *Inter Partes* Review and supporting materials were served as of the below date by UPS, on the Patent Owner at the correspondence address indicated for U.S. Patent No. 9,278,256.

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Dated: November 9, 2022

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