

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

K/S HIMPP,

Petitioner

v.

BRAGI GmbH,

Patent Owner

Case No. IPR2023-00901

Patent No. 10,635,385

DECLARATION OF KAI JOHNSON

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I, Kai Johnson, declare as follows:

II. Introduction

1. I have been retained by Petitioners and their counsel, McKool Smith P.C. (“McKool Smith”), as an independent expert consultant in this proceeding regarding U.S. Patent No. 10,635,385 (“the ’385 Patent,” Ex. 1001). I have been asked to consider whether certain references disclose or suggest the limitations recited in Claims 1-16 of the ’385 Patent (“the Challenged Claims”).

2. I am being compensated for my work in this proceeding at a rate of \$350 per hour and receiving reimbursement for expenses incurred in the course of my work. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of this or any other proceeding. I have no other interest in this proceeding.

3. This declaration is directed to the Challenged Claims of the ’385 Patent and sets forth certain opinions I have formed, the conclusions I have reached, and the bases for each. The conclusions I present are based on my own judgment. I am not an employee of the Patent Owner, McKool Smith, the inventors of the ’385 Patent, or of any affiliated companies.

4. Based on my experience, knowledge of the art at the relevant time, and analysis of prior art references, it is my opinion that the Challenged Claims of the

'385 Patent are patentable over the alleged prior art references discussed below.

III. Qualifications

5. This section summarizes my educational background, career history, publications, and other relevant qualifications. My curriculum vitae is attached as Patent Owner's Exhibit 2021, which includes my detailed employment background, and professional experience.

6. I have a Bachelor of Science degree in Computer Science from the University of Wisconsin-Madison.

7. I am a consultant with over 32 years of business experience. I am currently the President of Sutton Abinger in San Diego, California, a consulting company focused on solutions for payment systems, security, transit, and mobile applications, through which I provide services to U.S. and international clients in the areas of payment systems, information security, cryptography, and mobile applications. I am also an Advisory Partner to Penser Consulting Ltd., a firm in London which provides consulting services related to mobile applications and the payments industry for clients in Europe, the Middle East, and Asia.

8. I was previously the Product and Technology Leader, Chief Architect, and Chief Security Officer for Softcard (formerly known as Isis), a joint venture among AT&T, T-Mobile, and Verizon Wireless to develop contactless mobile payments. Prior to that, I worked as a consultant to Verizon Wireless to develop

consumer data products and where I had the responsibility of launching the V CAST Music product in 2006 which allowed consumers to purchase, download, and play music on their mobile phones with Bluetooth headphones in direct competition with Apple's iTunes and iPod products.

9. From 1999 to 2004, I worked in London, UK for enCommerce (acquired by Entrust) and SchlumbergerSema (acquired by Atos Origin) on both pre- and post-sales engagements, where many of my clients were in the telecom and financial services industries, and where some of my responsibilities included business development in security applications for mobile phones.

10. I am a named inventor on the following six issued patents relating to wireless technologies involving mobile devices and contactless payments: U.S. Patent Nos. 9,563,891; 9,859,953; 10,075,213; 10,387,873; 10,390,199; and 11,132,668.

IV. Materials Reviewed and Considered

11. My findings contained in this declaration are based on my education, research, experience, and background in the field of computer and communication networks, and specifically, in relation to wireless communication systems, as well as on my investigation and study of prior art references and other documents disclosed in this declaration, including the following:

Exhibit No.	Description
1001	U.S. Patent No. 10,635,385 (“’385 patent”)
1002	Declaration of Brian W. Anthony, Ph.D.
1003	U.S. Patent No. 9,781,514 (“Hensen-Patent”)
1004	YouTube.com, <i>September 2015 – FreeWavz Demo</i> [https://www.youtube.com/watch?v=zHNZ7p5GnH4] (“Hensen-Video”)
1005	<i>User Manual: LG Heart Rate Earphones</i> (“LG-Manual”)
1006	U.S. Patent Appl. No. 2014/0189600 (“Lee”)
1007	Kickstarter.com, November 22 Progress Report (“Hensen-Kickstarter”) [https://web.archive.org/web/20150924011438/https://www.kickstarter.com/projects/freewavz/freewavzsmartearphones-with-built-in-fitness-mon/posts/1057132]
1008	U.S. Patent No. 9,161,131 (“Hensen-Parent”)
1009	U.S. Provisional Application No. 62/061,497 (“Hensen-Provisional”)
1010	Screenshots from Hensen-Video
1011	File History for U.S. Patent No. 10,635,385 (“’385 FH”)
1012	Twitter.com – Posts by FreeWavz [https://twitter.com/Freewavz]
1013	Twitter.com - October 2014 Snapshot of Posts by FreeWavz [https://web.archive.org/web/20141026181307/twitter.com/Freewavz]
1014	Kickstarter.com, <i>Pulse Oximetry Success + FreeWavz Testing + Factory Preparation</i> [https://www.kickstarter.com/projects/freewavz/freewavz-smartearphones-with-built-in-fitness-mon/posts/1349732]
1015	FreeWavz.com – Home Page [https://web.archive.org/web/20151004055203/http://www.freewavz.com/]
1016	FreeWavz.com – News Page [https://web.archive.org/web/20151006111823/http://www.freewavz.com/news/]
1017	FreeWavz.com – About Page [https://web.archive.org/web/20151008013534/http://freewavz.com/about/]
1018	Olympics.com – History of Triathlon [https://olympics.com/en/sports/triathlon/#discipline-history-of]
1019	LG.com – FR74 Product Page

Exhibit No.	Description
	[https://web.archive.org/web/20150507002217/http://www.lg.com/us/support-mobile/lg-FR74#]
1020	FCC.gov – FR74 FCC Application [https://apps.fcc.gov/oetcf/eas/reports/ViewExhibitReport.cfm?mode=Exhibits&RequestTimeout=500&calledFromFrame=N&application_id=5sSYi3UFjhWeKosDZgHTHQ%3D%3D&fcc_id=BEJ9QK-DMFR74]
1021	FCC.gov – FR74 User Manual (Attachment to FCC Application) [https://apps.fcc.gov/eas/GetApplicationAttachment.html?id=2186303]
1022	Kickstarter.com – FreeWavz Creator Bio [https://web.archive.org/web/20150912193027/https://www.kickstarter.com/projects/freewavz/freewavz-smart-earphones-with-built-infitness-mon/creator_bio]
1023	Internet Archive Declaration of Nathaniel E Frank-White
1024	U.S. Patent No. 9,392,946
1025	U.S. Patent No. 8,818,476

V. My Understanding of Certain Patent Law Principles

12. As a technical expert, I am not offering any legal opinions. Rather, I am offering technical assessments and opinions. In rendering my analysis, I have been informed by counsel regarding various legal standards for determining patentability. I have applied those standards in forming my technical opinions expressed in this declaration.

13. I understand that in this proceeding, Petitioners have the burden of proving that the Challenged Claims are invalid by a preponderance of the evidence. I understand that “preponderance of the evidence” means that a fact or conclusion is more likely true than not true.

14. The patent claims define the invention made by the inventors and define what the patent owner owns and what the owner may prevent others from using. I understand that an independent claim sets forth all the requirements that must be met to be covered by that claim. I further understand that a dependent claim does not itself recite all the requirements of the claim but refers to another claim and incorporates all the requirements of the claim to which it refers.

15. I understand that a patent cannot be invalidated based on one person's testimony alone without corroborating evidence, particularly documentary evidence. Moreover, I understand that corroboration is required of any witness whose testimony alone is asserted to invalidate a patent, regardless of his or her level of interest in relation to that patent. Accordingly, even if the testifying individual has no interest in the litigation, I understand that corroboration is still required.

16. In this declaration, I may use the phrase "prior art" when describing specific references. However, my use of this phrase should not be interpreted as agreement that the item(s) described qualify as prior art under the patent laws. I merely use this phrase to address the items labeled as "prior art" by Petitioner and its expert.

17. I understand that a claim in an issued patent is unpatentable as anticipated if the recited invention is described in a single prior-art reference that

discloses each limitation, either expressly or inherently.

18. It is my understanding that a claimed invention is unpatentable if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Obviousness, as I understand it, is based on the scope and content of the prior art, the differences between the prior art and the claim, and the level of ordinary skill in the art.

19. I understand that under 35 U.S.C. § 103, “[a] patent for a claimed invention may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”

20. I understand that a patent claim may be unpatentable as obvious over a single prior art reference or in view of a combination of prior art references. I understand that prior art references may also be combined with the knowledge of a person of ordinary skill in the art. I further understand that a person of ordinary skill in the art is presumed to know the relevant prior art. I understand that the obviousness analysis may take into account the inferences and creative steps that a

person of ordinary skill in the art would employ.

21. I understand that when evaluating obviousness, one must not consider whether the claimed invention would have been obvious to a layman or to an expert; not use hindsight when comparing the prior art to the claimed invention; and not consider what was learned from the teachings of the patent. In particular, I understand that it is improper to use the patent claims as a road map for selecting and combining items of prior art. In other words, one should avoid using the challenged patent as a guide through the prior art references, combining the right references in the right way so as to achieve the result of the claims at issue. Instead, one must put oneself in the place of a person of ordinary skill at the time the invention was made and consider only what was known before the invention was made.

22. I understand that obviousness should be considered in light of the problems known to the person having ordinary skill in the art at the relevant time and the complexity of the alternatives for solving the problem. That individual elements of the claimed invention are disclosed in the prior art is not alone sufficient to reach a conclusion of obviousness.

23. I also understand that when considering the obviousness of a patent claim, one must consider whether a teaching, suggestion, or motivation to combine

the references exists so as to avoid impermissibly applying hindsight when considering the prior art. I understand that a teaching, suggestion, or motivation may be found explicitly or implicitly: (1) in the prior art; (2) in the knowledge of those of ordinary skill in the art; or (3) from the nature of the problem to be solved. I also understand that the legal determination of the motivation to combine references allows recourse to logic, judgment, and common sense, but that any such motivation to combine references must still avoid the improper application of hindsight or reliance on the patentee's disclosure of his invention as found in the patent specification, drawings, and claims. In a similar vein, I understand that one should consider whether a person of ordinary skill in the art would have had a reasonable expectation of success in achieving the purported invention.

24. I further understand that certain factors may support or rebut the obviousness of a claim. I understand that such secondary considerations include, among other things, commercial success of the patented invention, skepticism of those having ordinary skill in the art at the time of the invention, unexpected results of the invention, any long-felt but unresolved need in the art that was satisfied by the alleged invention, the failure of others to make the alleged invention, praise of the alleged invention by those having ordinary skill in the art, and copying of the alleged invention by others in the field. I understand that there must be a nexus—a connection—between any such secondary considerations and the alleged invention.

I also understand that contemporaneous independent invention by others is a secondary consideration tending to show obviousness.

25. I understand that in determining whether a prior art reference would have been combined with other prior art or with other information within the knowledge of a person of ordinary skill in the art, the following are examples of approaches and rationales that may be considered:

- combining prior art elements according to known methods to yield predictable results;
- simple substitution of one known element for another to obtain predictable results;
- use of a known technique to improve similar devices in the same way;
- applying a known technique to a known device ready for improvement to yield predictable results;
- applying a technique or approach that would have been “obvious to try,” i.e., choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;

- numerical ranges disclosed in the prior art that overlap with numerical limitations set forth in the challenged claims;
- whether certain aspects of the patented subject matter were result-effective, such that a person of ordinary skill in the art would know that such element is determinative as to the effectiveness of the patent subject matter; and
- some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. I understand that this teaching, suggestion or motivation may come from prior art references or from the knowledge or common sense of one of ordinary skill in the art.

26. I have been informed by counsel that the Board construes claims according to the so-called “*Phillips*” standard. Under the *Phillips* standard, terms in a claim are given their ordinary and customary meaning, consistent with the patent’s specification, as understood by a POSITA. I have been informed by counsel that what is to be considered includes the claims, the patent specifications and drawings, and the prosecution history, including any art listed by the examiner or the Applicant. I have been informed by counsel that information external to the patent, including expert and inventor testimony and unlisted prior art, are to be considered

if ambiguities remain.

VI. Level of Ordinary Skill in the Art

27. It is my understanding that a person of ordinary skill in the art (“POSITA”) is a hypothetical person who analyzes the prior art without the benefit of hindsight. I have been instructed that the level of ordinary skill may be reflected by the prior art of record, and that a person of ordinary skill in the art to which the claimed subject matter pertains would have the capability of understanding the scientific and engineering principles applicable to the pertinent art. I have been instructed that there are multiple factors that may be considered in determining the level of ordinary skill in the art, including: (1) type of problems encountered in the prior art; (2) prior art solutions to those problems; (3) rapidity with which innovations are made; (4) sophistication of the technology; and (5) educational level of active workers in the field. I also understand that a POSITA is also a person of ordinary creativity, not an automaton. They would be able to fit the teachings of multiple patents together like a puzzle and have the capability of understanding the scientific and engineering principles applicable to the pertinent art.

28. As stated in the ’385 Patent, the “Technical Problem” to which the alleged invention is directed is “a software application which may execute on a computing device such as a mobile phone to allow a user to interact with [...] wireless ear pieces to improve functionality and user satisfaction” (Ex. 1001, 1:21-

24).

29. I have been asked to provide a definition for the level or ordinary skill in the art for a POSITA in the field of the '385 Patent at the time the priority application for the '385 Patent was filed. To that end, I have been asked to assume for purposes of this declaration that the '385 Patent is entitled to claim priority to November 13, 2015.

30. In my opinion, a POSITA in reference to the '385 Patent would possess (1) the equivalent of an undergraduate degree in Electrical Engineering or Computer Science or a related field; and (2) at least one year of experience in the field of wireless electronic devices and/or graphical user interfaces, particularly as those systems relate to software applications used to interface with wireless devices. It is also my opinion that this definition is flexible in the sense that additional education (*e.g.*, a PhD in Electrical Engineering) could substitute for professional experience or *vice versa*.

31. I consider myself to have at least the credentials of a POSITA, and I am capable of addressing the issues from the perspective of such a person. All of my opinions in this declaration are from the perspective of a POSITA, as I have defined it above and during the relevant time frame.

VII. Overview of the '385 Patent

32. The '385 Patent is titled "Method and apparatus for interfacing with

wireless earpieces.” As noted above, the alleged invention relates to “a software application which may execute on a computing device such as a mobile phone to allow a user to interact with [...] wireless ear pieces to improve functionality and user satisfaction” (Ex. 1001, 1:21-24)

33. The '385 Patent claims a system in independent Claim 1 and two methods in independent Claims 13 and 14. The system of Claim 1 is comprised of at least one wireless earpiece and a software application (Ex. 1001, Claim 1). The method of Claim 13 is directed to controlling a set of wireless earpieces by communicating user input between a software application and the wireless earpieces (Ex. 1001, Claim 13). The method of Claim 14 is directed to communicating data from a set of wireless earpieces and using the data to update the screen displays within a software application (Ex. 1001, Claim 14). Each of the independent claims requires that both the wireless earpiece(s) and software application must satisfy the relevant claim limitations.

34. The '385 Patent describes that the software application can display a visual representation of the earpiece(s) and that this visual representation of the earpieces is associated with a function or property of the earpiece(s) (Ex. 1001, 5:22-31).

35. The '385 Patent describes wireless earpieces that have physiological

sensors such as a pulse oximeter to measure heart rate or an inertial sensor to measure physical activity (Ex. 1001, 6:43-46). The '385 Patent describes the use of the software application to track physical activities such as running, biking, and swimming (Ex. 1001, 6:24-47).

36. The '385 Patent describes wireless earpieces that have light-emitting diodes ("LEDs") that can illuminate a portion of the earpieces that the patent calls a "corona" and that can convey information to the user about the earpiece. (Ex. 1001, 3:13-14, 3:63-67, and 4:46-54).

37. The '385 Patent describes that the visual representation of the earpieces in the software application is associated with the physical appearance of the earpieces, including aspects of the earpieces such as the lights in the wireless earpieces (Ex. 1001, 5:22-31). Further, the '385 Patent claims that the lights in the wireless earpieces and the corresponding visual representation of the wireless earpieces in the software application may be associated with the remaining battery life of the wireless earpieces (Ex. 1001, Claim 7).

38. The '385 Patent describes that the wireless earpieces may be controlled using various gestures that manipulate the earpieces using the hands: "a user may perform various actions through manipulation of the left ear piece using a set of gestures which may include a single tap, a double tap, a swipe, and/or a hold"; and

that the software application may display the gestures used to control the earpieces (Ex. 1001, 5:11-14).

39. The '385 Patent describes that the wireless earpieces may store audio files and playlists (Ex. 1001, 3:22-25, 5:50-52, and Claim 10).

40. The '385 Patent describes that the software application may run on a mobile device, that it can connect to the wireless earpieces (Ex. 1001, 6:29-30 and Claim 11), that it can send user input to the wireless earpieces (Ex. 1001, 1:61-2:5), and that it can receive data from the wireless earpieces and use this data to update the display on the mobile device (Ex. 1001, 2:6-16).

A. Claims and Elements of the '385 Patent

41. The following table lists the Claims and Elements of the '385 Patent and supplies the references that will be used for the Claims and Elements in this declaration.

CLAIMS

Claim	Elem.	Claim Text
1	1PRE	A system comprising:
	1A	at least one wireless ear piece comprising an ear piece housing and a wireless transceiver disposed within the ear piece housing;
	1B	a software application for executing on a computing device having a display associated therewith;

Claim	Elem.	Claim Text
	1C	wherein the software application configured to display one or more screen displays on a display of the computing device;
	1D	wherein the software application provides a user interface for use by a user of the at least one wireless ear piece to interact with the at least one wireless ear piece; and
	1E	wherein the user interface is configured to display a visual representation of the at least one wireless ear piece on at least one of the one or more screen displays, the visual representation indicative of a function or property of the at least one wireless ear piece communicated from the at least one wireless earpiece to the computing device.
2		The system of claim 1 wherein the at least one wireless earpiece comprises a physiological sensor.
3		The system of claim 2 wherein the software application provides for tracking one or more physical activities using the physiological sensor.
4		The system of claim 3 wherein the physical activities are selected from a set consisting of running, biking, and swimming.
5		The system of claim 1 wherein the representation visual representation includes lighting of the at least one wireless ear piece.
6		The system of claim 5 wherein the lighting is associated with the function or property of the at least one wireless ear piece.
7		The system of claim 6 wherein the property is remaining battery life.
8		The system of claim 1 wherein the user interface is further configured to display available gestures associated with controlling the at least one wireless ear piece.

Claim	Elem.	Claim Text
9		The system of claim 1 wherein the at least one wireless ear piece comprises onboard storage for storing audio files.
10		The system of claim 1 wherein the at least one wireless ear piece is configured to store at least one playlist of audio files.
11		The system of claim 1 wherein the software application provides for connecting the at least one wireless ear piece with the computing device.
12		The system of claim 11 wherein the computing device is a mobile device.
13	13PRE	A method for controlling a set of wireless ear pieces, the method comprising:
	13A	providing a software application for controlling the set of wireless ear pieces, the software application adapted to execute on a computing device;
	13B	using the software application on the computing device to display one or more screen displays on a display of the computing device and to receive input from the user into the mobile device, wherein at least one of the one or more screen displays display a visual representation of the set of wireless ear pieces;
	13C	communicating data associated with the input between the software application and at least one of the wireless ear pieces;
	13D	performing an action using at least one of the wireless ear pieces in response to receiving the data.
14	14PRE	A method for communicating data from a set of wireless ear pieces, the method comprising
	14A	providing a software application for communicating with the set of wireless ear pieces, the software application adapted to execute on a computing device

Claim	Elem.	Claim Text
	14B	using the software application on the computing device to display one or more screen displays on a display of the computing device, wherein at least one of the one or more screen displays display a visual representation of the set of wireless ear pieces
	14C	communicating data received from one or more of the wireless ear pieces to the computing device; and
	14D	updating the screen displays on the display of the computing device using the data.
15		The method of claim 14 wherein the data comprises physiological data.
16		The method of claim 15 wherein the physiological data is heart rate data.

42. As discussed below, the references to the Elements in this declaration intentionally differ from the references used in the Petition because Petitioner has improperly split some of the elements of the Claims. Where the references differ, I have also cited the Petition's references for clarity.

VIII. Claim Construction

43. I have been told that claim terms in an *inter partes* review proceeding are to be given their plain and ordinary meaning as understood by a person of ordinary skill in the art.

44. In my opinion, the plain and ordinary meanings of the Claim terms in the context of the Claims and specification of the '385 Patent would be clear to a

person of ordinary skill in the art and do not need explicit construction.

IX. Overview of the Alleged Prior Art

45. Petitioner relies on five instances of alleged prior art to support the arguments in the Petition: U.S. Patent No. 9,781,514 (“Hensen-Patent,” Ex. 1003); The YouTube.com, September 2015 – FreeWavz Demo video (“Hensen-Video,” Ex. 1004); User Manual: LG Heart Rate Earphones (“LG-Manual,” Ex. 1005); U.S. Patent Appl. No. 2014/0189600 (“Lee,” Ex. 1006); and the Kickstarter.com, November 22 Progress Report (“Hensen-Kickstarter,” Ex. 1007).

A. Overview of the ’514 Patent (aka Hensen-Patent)

46. Hensen-Patent is directed to “provid[ing] frequency equalized stereo audio to a hearing impaired user” (Ex. 1003, 2:22-23). Hensen-Patent has one independent claim, Claim 1, which is directed to “A stereo audio headphone apparatus” (Ex. 1001, 13:55).

47. Hensen-Patent describes “a master headphone unit comprising: a master housing to be independently carried behind an adjacent an ear canal of the user” (Ex. 1003, 13:56-58) and “a slave headphone unit comprising a slave housing to be independently carried behind another ear of the user” (Ex. 1003, 14:4-7). Hensen-Patent also describes, “a remote control unit operatively coupled to at least one of said master and slave headphone units” (Ex. 1003, 16:8-10).

48. Hensen-Patent describes that the master headphone unit may carry a

memory that may store stereo audio data (Ex. 1003, 4:65-5:8). Hensen-Patent describes that the input buttons on the master headphone unit may be used to skip to another song in the memory (Ex. 1003, 5:41-44) and that the remote control may also be used to skip to another song in the memory (Ex. 1003, 8:17-20).

49. The remainder of Hensen-Patent describes the physical, electrical, and electronic aspects of the headphone units relating to compensating for the user's hearing loss. These aspects of Hensen-Patent are not relevant to the scope of the '385 Patent.

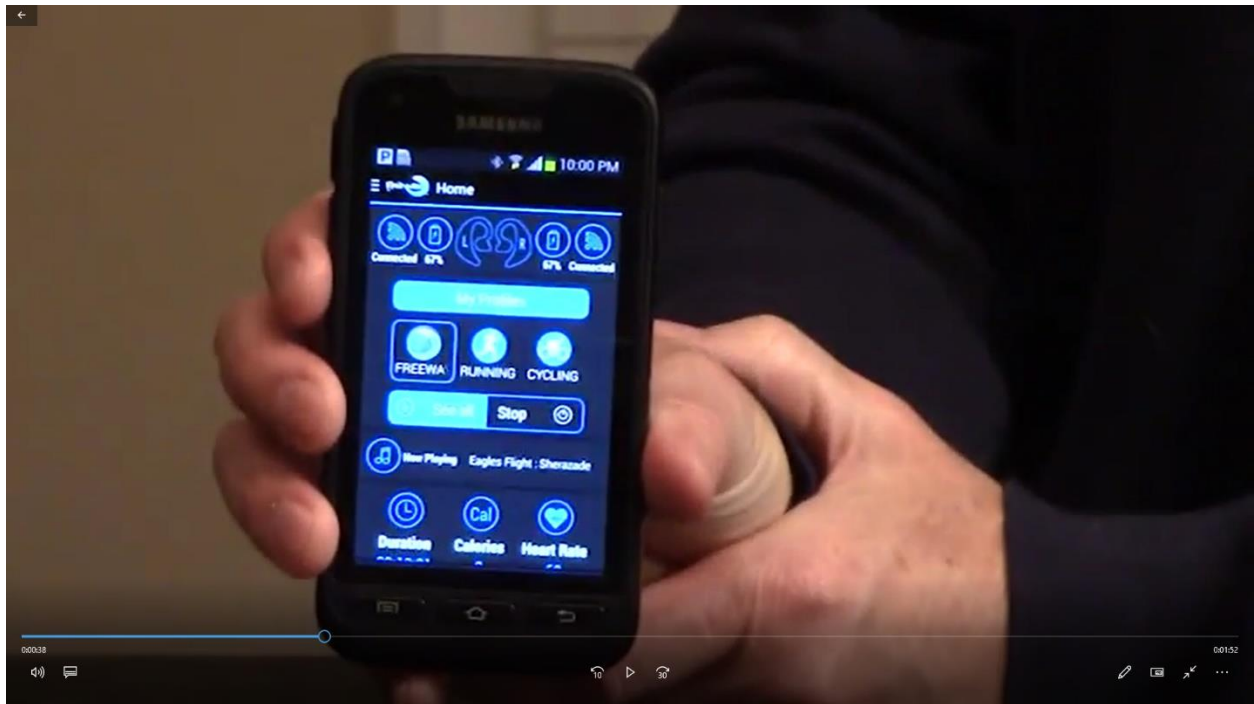
B. Overview of Hensen-Video

50. Hensen-Video (Ex. 1004) shows Dr. Eric Hensen wearing two apparatuses that appear to be headphone units as described in Hensen-Patent.

51. In the video, Dr. Hensen claims that the headphones are on, paired with each other, and paired with a smartphone. These claims are not directly substantiated by the video. Dr. Hensen claims to be listening to music in the headphones, but this claim is also not directly substantiated by the video. Dr. Hensen claims to have enabled the pulse oximetry function of the headphones, but this claim is also not directly substantiated by the video. (Ex. 1004, 0:09-0:30.)

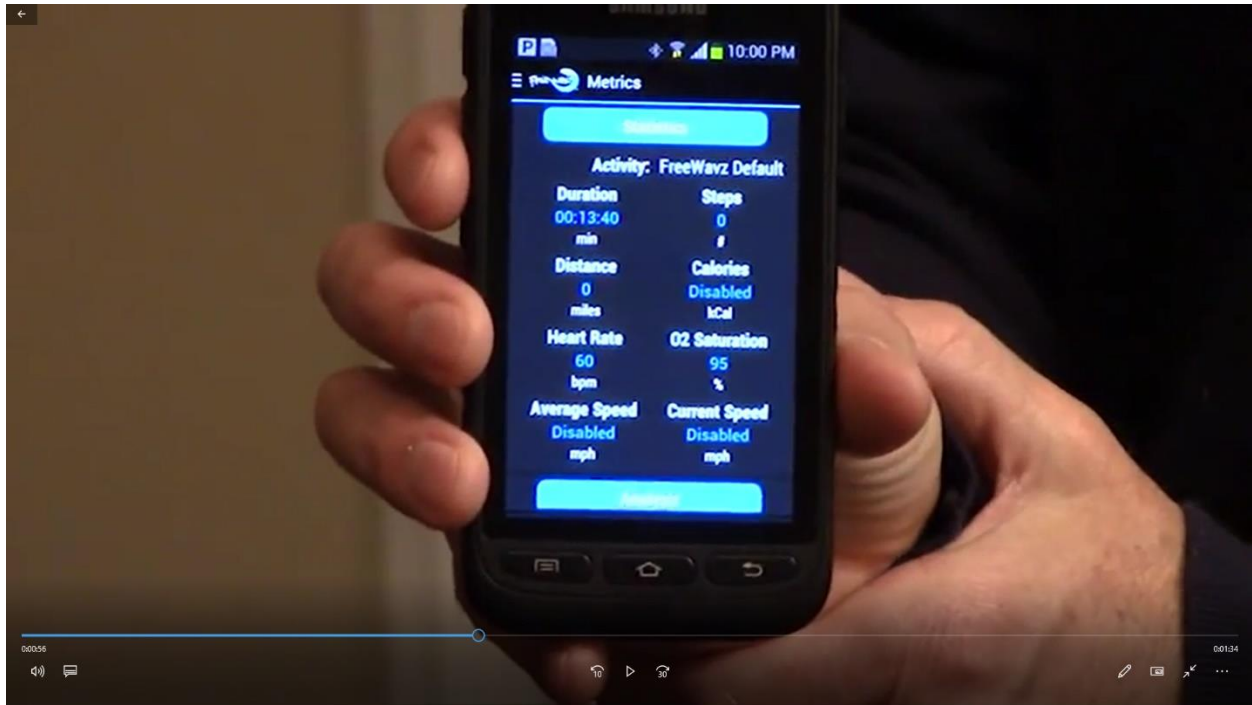
52. The video shows a "Home" screen of an application on the smartphone with various icons that appear to be related to the status of the headphones, a set of "Profiles," a "Now Playing" section with the name of a song, and icons apparently

relating to physiological measurements.



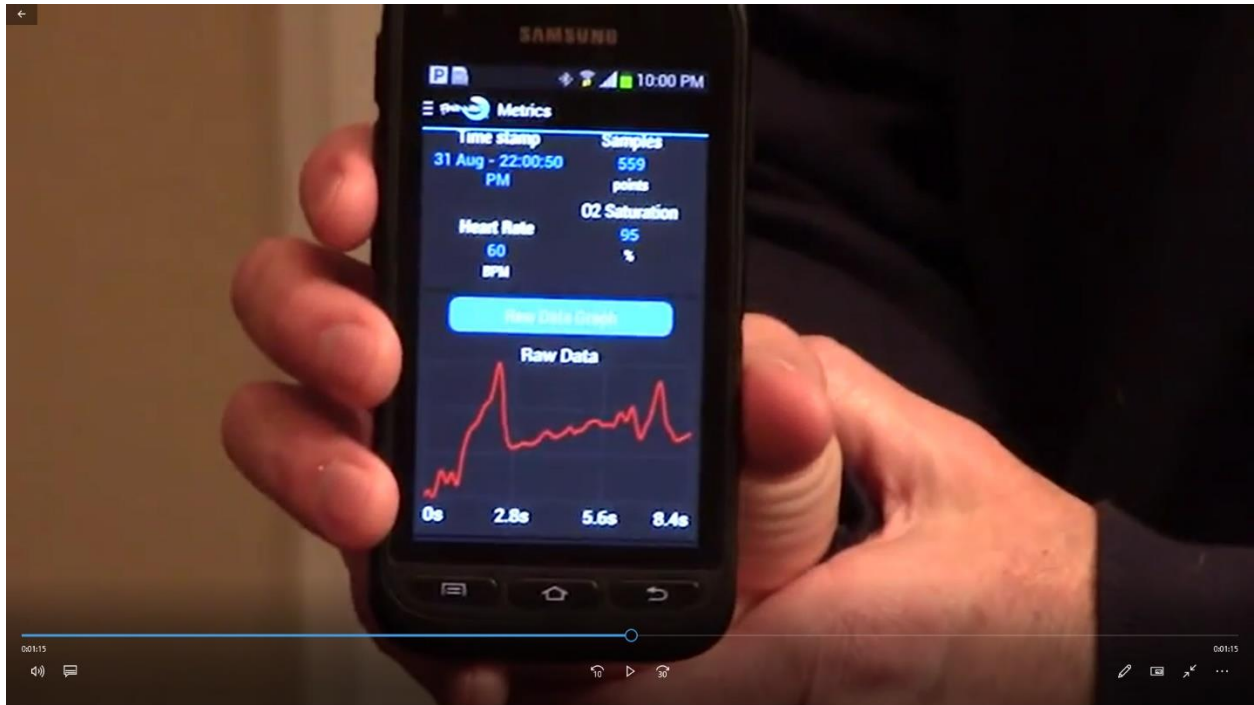
Hensen-Video at 0:38

53. The video shows a “Metrics” screen of the application on the smartphone which Dr. Hensen claims displays his heart rate and oxygen saturation. However, the displayed heart rate and oxygen saturation data never change while this screen is displayed.



Hensen-Video at 0:56

54. The video also shows a “Raw Data” section of the “Metrics” screen which shows a graph that Dr. Hensen says is “our waveform that's where our raw data is being obtained from that is the heart rate and the oxygen saturation.” The graph has no label and no units on the vertical axis, so it is unclear what this graph depicts. The horizontal axis of the graph is measured in seconds with a range of 0 to 8.4 seconds. The displayed heart rate and oxygen saturation data also do not change while this screen is displayed. This screen displays “559 points” as the number of “Samples” which appears to represent the number of data points captured by the application. The time displayed on the status bar of the smartphone at 1:15 in the video is 10:00 PM.

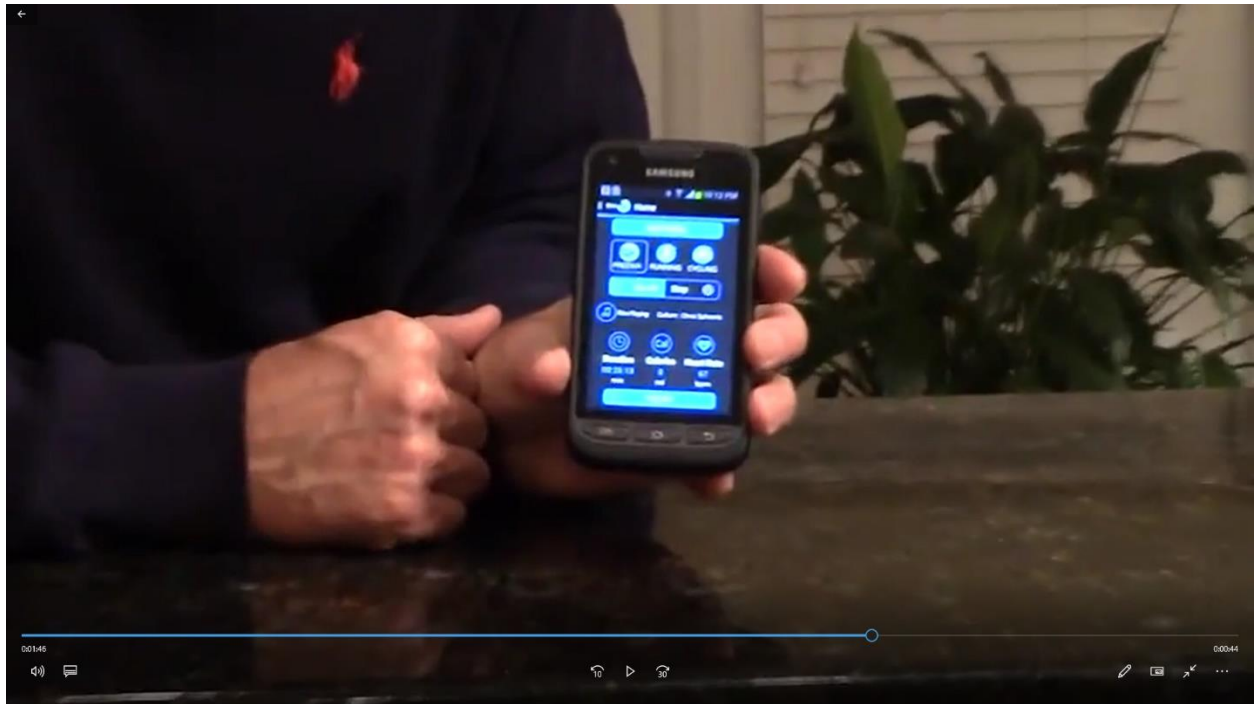


Hensen-Video at 1:15

55. At 1:32, Hensen-Video fades to a close-up of a Walgreens-branded pulse oximeter. The Walgreens pulse oximeter shows an oxygen saturation of 97% and a heart rate that varies in the range of 65-72 beats per minute with updates to the heart rate approximately once per second.

56. At 1:46, Hensen-Video shows the smartphone application again. This time the application shows a heart rate of 67 beats per minute and an oxygen saturation of 95%. Neither the heart rate nor the oxygen saturation changes while the smartphone application is visible. The smartphone application still shows the value of "559 points" under the heading of "Samples." The same graph of "Raw Data" is visible in the application with the same horizontal axis ranging between 0 and 8.4

seconds. The time displayed on the status bar of the smartphone at this point in the video is 10:12 PM.



Hensen-Video at 1:46

57. Dr. Hensen never says in the video that the data displayed in the application on the smartphone are received from the headphones (Ex. 1004). In fact, as will be described in detail below, the depictions in the video are not consistent with a functioning smartphone application that displays measured heart rate or oxygen saturation data.

C. Overview of LG-Manual

58. The “User Manual – LG Heart Rate Earphones” (Ex. 1005) is a document produced by LG for its FR74 model earphones.

59. LG-Manual describes the FR74 earphone package including a “Main set” which contains the battery and has a light and a button, the “Ear set” which has a wired remote with three buttons and wired earphones with a sensor in the right earphone to measure “heart rate, consumed calories, distance, speed, and pace.” The wired earphones connect to the “Main set” using a wired connector.

60. LG-Manual describes how the LG Fitness App may be used to record and save data captured by the earphones during a workout session.

D. Overview of Lee

61. U.S. Patent Appl. No. 2014/0189600 (“Lee”) is directed to “a display apparatus which is controlled by a user's motion, and draws the attention of a user to a motion guide when the guide regarding available motions is provided, while minimizing interference with the display apparatus, and a method for controlling a display apparatus thereof” (Ex. 1006, ¶0011).

62. Lee describes a display apparatus with a Graphical User Interface (“GUI”) with a “pointer” (*i.e.*, a graphical indication on the display) that “is moved according to a user’s motion” (Ex. 1006, ¶0012), and “a motion input device configured to receive a user’s motion” (Ex. 1006, ¶0018).

63. Lee describes that “the display apparatus **100** comprises a display **110**, a motion input device **120**, and a controller **130**.” (Ex. 1006, ¶0041, emphasis in original). Lee describes that “The motion input device **120** receives a user's motion.

Specifically, the motion input device **120** may photograph a user's motion and provide the photographed image signal (for example, successive frames) to the controller **130**. For example, the motion input device **120** may be realized as a camera unit consisting of a lens and an image sensor” (Ex. 1006, ¶0045, emphasis in original). Lee describes that “the controller **130** detects the location and the shape of an object from an image signal transmitted from the motion input device **120** using at least one of the shape, color, and motion of the object” (Ex. 1006, ¶0048, emphasis in original). Lee explains that “Herein, the object may be a user’s hand” (Ex. 1006, ¶0048).

64. Lee describes the user’s motions as “moving a hand left/right or up/down,” “clenching a hand” (Ex. 1006, ¶0036), “the slap motion of moving a spread hand in one direction at higher than a predetermined speed, the shake motion of shaking a hand left/right or up/down, the rotating motion of rotating a hand, the spread motion of spreading a clenched hand, and so on” (Ex. 1006, ¶0054).

65. Lee describes that the display apparatus may display “a guide regarding available motions in a motion task mode” (Ex. 1006, ¶0013).

E. Overview of Hensen-Kickstarter

66. Hensen-Kickstarter is a capture of a web page titled “FreeWavz: Smart Earphones with Built-in Fitness Monitoring” displayed on the Kickstarter web site in 2015, as recorded by the Internet Archive’s Wayback Machine.

67. Hensen-Kickstarter claims that, “We are also approaching shipment of our new, uniquely curved batteries. They are due to arrive in early December, just in time to be incorporated into our first 30 production test sets. These sets will be used for UL/CE and other certifications, additional evaluation, integration and on-ear tuning of our biometric algorithms, before we prepare for volume production in January.”

68. Hensen-Kickstarter claims that “The Android app is just about finished,” and shows “some sample page screen shots to demonstrate their appearance.”

X. The Alleged Prior Art Does Not Disclose or Suggest the Claims of the '385 Patent

69. In my opinion, the alleged prior art fails to disclose or suggest to a POSITA all of the Elements of the Challenged Claims of the '385 Patent.

70. The Petition improperly separates elements of the Claims in the '385 Patent and, as described in detail below, improperly applies the elements of the Claims to the prior art without considering the full context of the phrases. As noted above, because elements of the Claims are improperly separated in the Petition, the Petition's numbering of the elements of the Claims differs from my declaration.

A. Analysis of the Alleged Prior Art

71. Grounds 1-3 of the Petition rely on Hensen-Patent and Hensen-Video

in combination with LG-Manual and Lee. Grounds 4-6 of the Petition rely on Hensen-Patent and Hensen-Kickstarter in combination with LG-Manual and Lee. All the Grounds in the Petition rely either on Hensen-Video or Hensen-Kickstarter. However, as described below, neither Hensen-Video nor Hensen-Kickstarter show the things that the Petition claims they show.

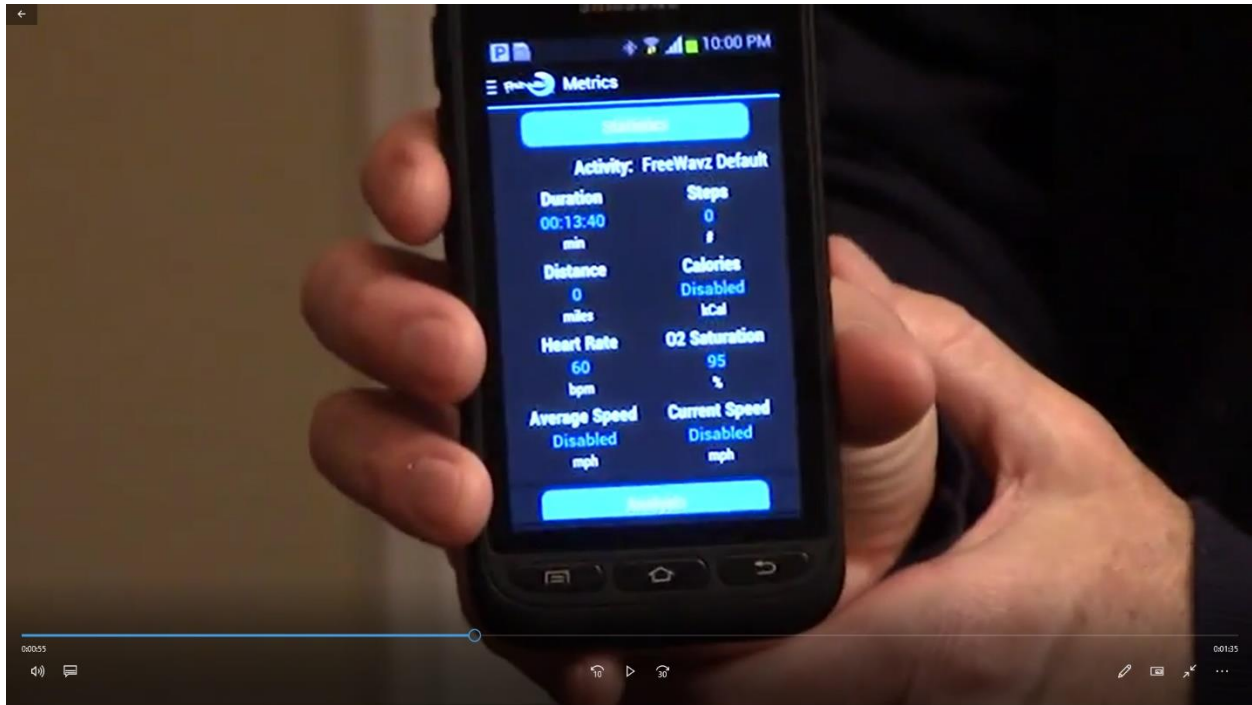
i. Hensen-Video Does Not Show a Functioning Smartphone Application

72. Hensen-Video was apparently created to advertise FreeWavz to potential customers, and perhaps more importantly since FreeWavz was a startup, to advertise FreeWavz to potential investors. Given that FreeWavz used the Kickstarter web site, these two groups effectively overlapped, as Kickstarter users typically provide money to startups in advance of a product being developed and in anticipation of being one of the first customers to receive the product when it is completed.

73. As such, Dr. Hensen had every motivation to present FreeWavz and its products in the most favorable light possible. Although startup founders such as Dr. Hensen have incentives to stretch the truth about their products to gain investors and customers, I assume for the sake of argument that Dr. Hensen's statements in Hensen-Video are completely true. Likewise, although it is possible to modify videos to show things that are not as they appear, I assume for the sake of argument that everything depicted in Hensen-Video is exactly as it appears.

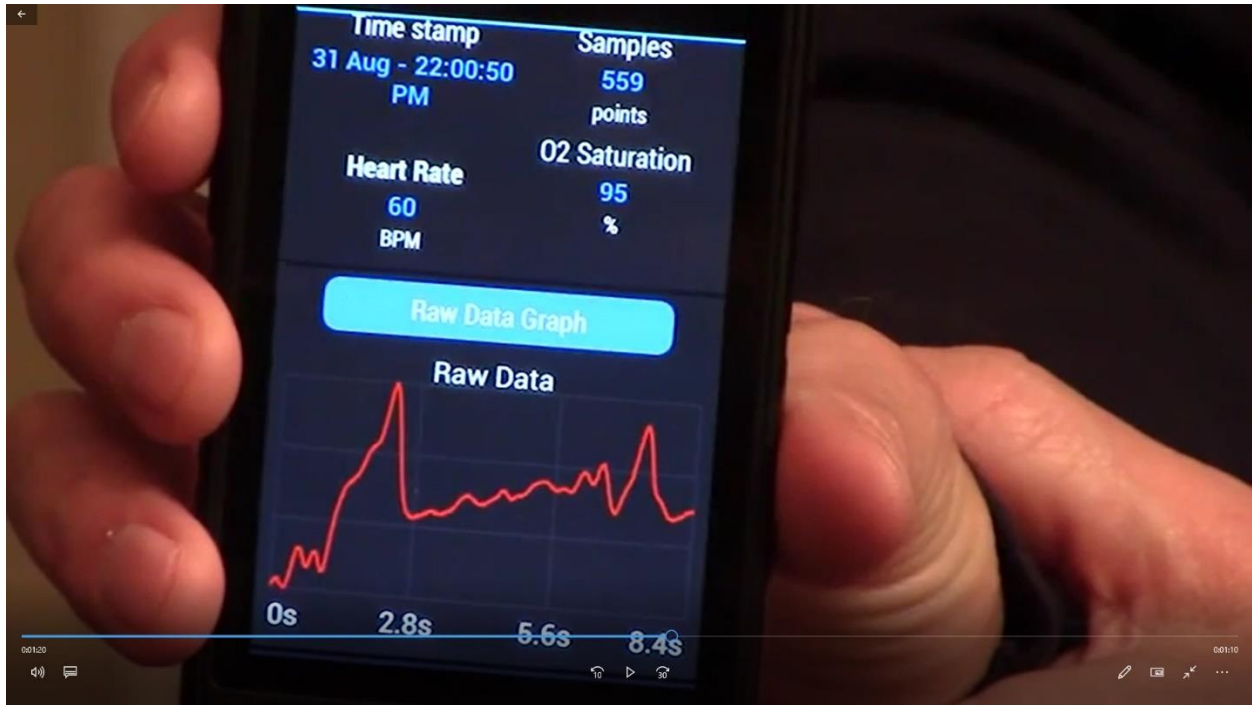
74. In the video, Dr. Hensen claims that the earpieces are on, paired with each other, and paired with a smartphone. Dr. Hensen claims to be listening to music in the earpieces. Dr. Hensen also claims to have enabled the pulse oximetry function of the earpieces. (Ex. 1004, 0:13 to 0:30.) I assume that these statements are true.

75. The video shows a “Metrics” screen of the application on the smartphone which Dr. Hensen says displays his heart rate and oxygen saturation (Ex. 1004 at 0:53 to 1:11). I assume Hensen’s statement to be true: that the display shows his heart rate and oxygen saturation. However, Dr. Hensen does not say that this data has been measured by the earpieces or received by the smartphone application from the earpieces. Dr. Hensen does not say when or how his heart rate and oxygen saturation data were obtained, but merely “that’s kind of consistently where I run as far as my heart rate is concerned, oxygen usually is normal between 95 and a hundred percent” (Ex. 1004 at 1:00 to 1:09).



Hensen-Video at 0:55

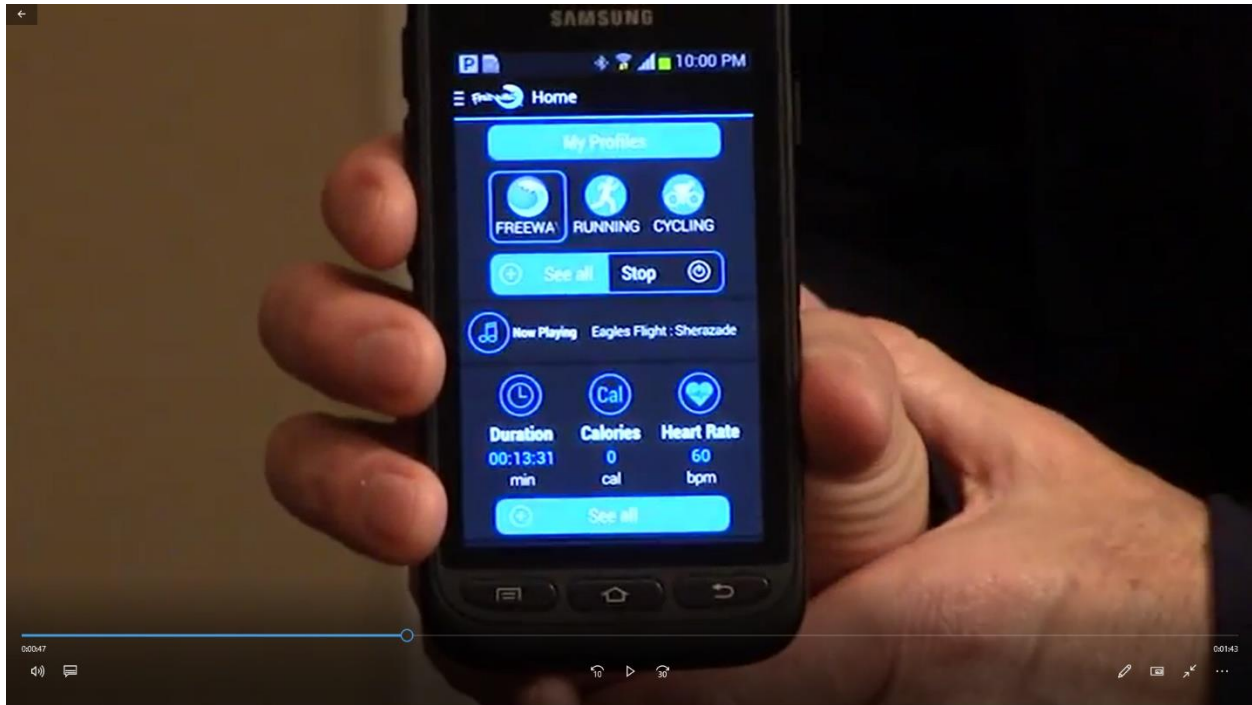
76. At 1:20, Hensen-Video shows a graph of “Raw Data,” which Dr. Hensen describes: “Next is I’m going to demonstrate the raw data that has been obtained. If you can see that red line, that is our waveform. That is where our raw data is being obtained from, that is, the heart rate and the oxygen saturation” (Ex. 1004 at 1:09 to 1:23). I assume Hensen’s statement to be true, that the graph shows a raw data waveform (implicitly of a pulse oximeter) and that the heart rate and oxygen saturation may be obtained from this raw data. Dr. Hensen does not say that this raw data was collected by the earpieces or that the raw data was received by the smartphone application from the earpieces. Dr. Hensen does not say when or how this raw data was collected.



Hensen-Video at 1:20

77. In my career, I have seen hundreds of smartphone applications in various stages of development from initial concepts, to early demonstrations, pre-release versions, and final release software. To a person of ordinary skill in the art in the development of smartphone applications, there are several notable aspects of the application displayed in Hensen-Video.

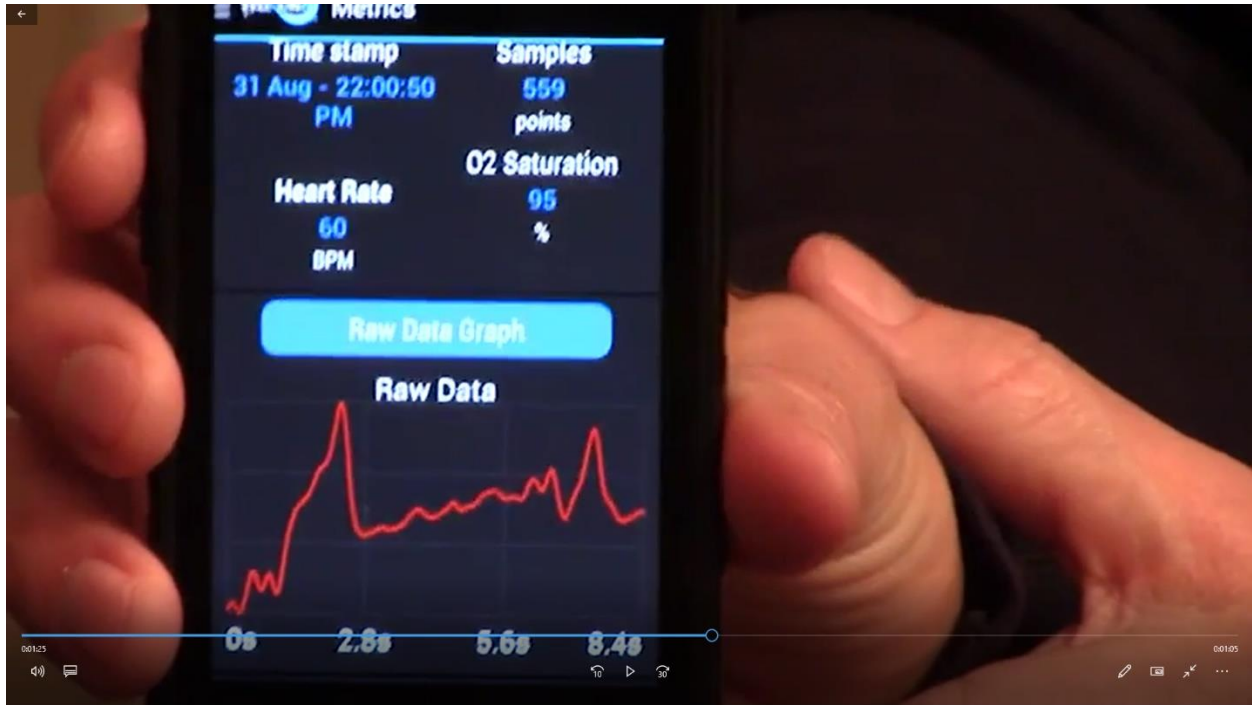
78. First, at 0:47, Hensen-Video shows a “Duration” with a value of hours, minutes, and seconds with the seconds incrementing in real time. This indicates that the video shows us software running on the smartphone with the capability of updating the screen in real time. It does not, however, confirm that all the apparent capabilities of this software are functional.



Hensen-Video at 0:47

79. Second, from 0:47 to 1:24, Hensen-Video shows us a “Heart Rate” value of “60 BPM,” both in the “Home” screen at 0:47 and in the “Metrics” screen starting at 0:55. That is, the heart rate value displayed in the application remains static at exactly 60 beats per minute for 37 seconds. However, when the video shows the heart rate measured by the Walgreens pulse oximeter, the value varies in the range of 65-72 beats per minute over six seconds (Ex. 1004, 1:32 to 1:38). As described above, the software application in Hensen-Video can update the display on the screen in real time, and if it could receive heart rate data in real time, it could also update the display of that data in real time. Judging from the example of the Walgreens pulse oximeter, it seems highly unlikely that a person’s heart rate

measured by a pulse oximeter would remain at exactly the same value for 37 seconds. Instead, Hensen-Video shows us that the heart rate data in the application is not updated in real time.

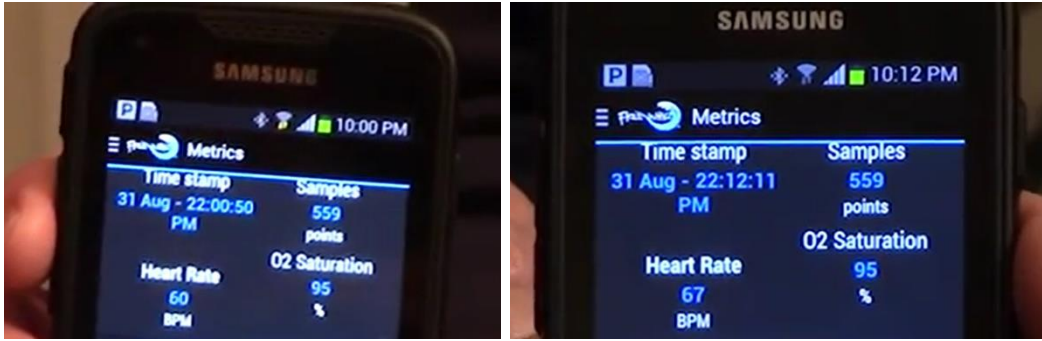


Hensen-Video at 1:25, displaying the same heart rate as at 0:47

80. Third, the “Raw Data” graph in Hensen-Video at 1:14 to 1:26 (as shown immediately above) has a horizontal scale that ranges from 0 to 8.4 seconds and a red line indicating the data associated with that time period. The red line indicating the data has at least 24 peaks and troughs. There are several ways that this red line could be drawn from the source data, but it would be reasonable to assume that at least 24 data points, corresponding to the at least 24 peaks and troughs, would be necessary to draw the red line as shown. Given the time scale of the “Raw Data”

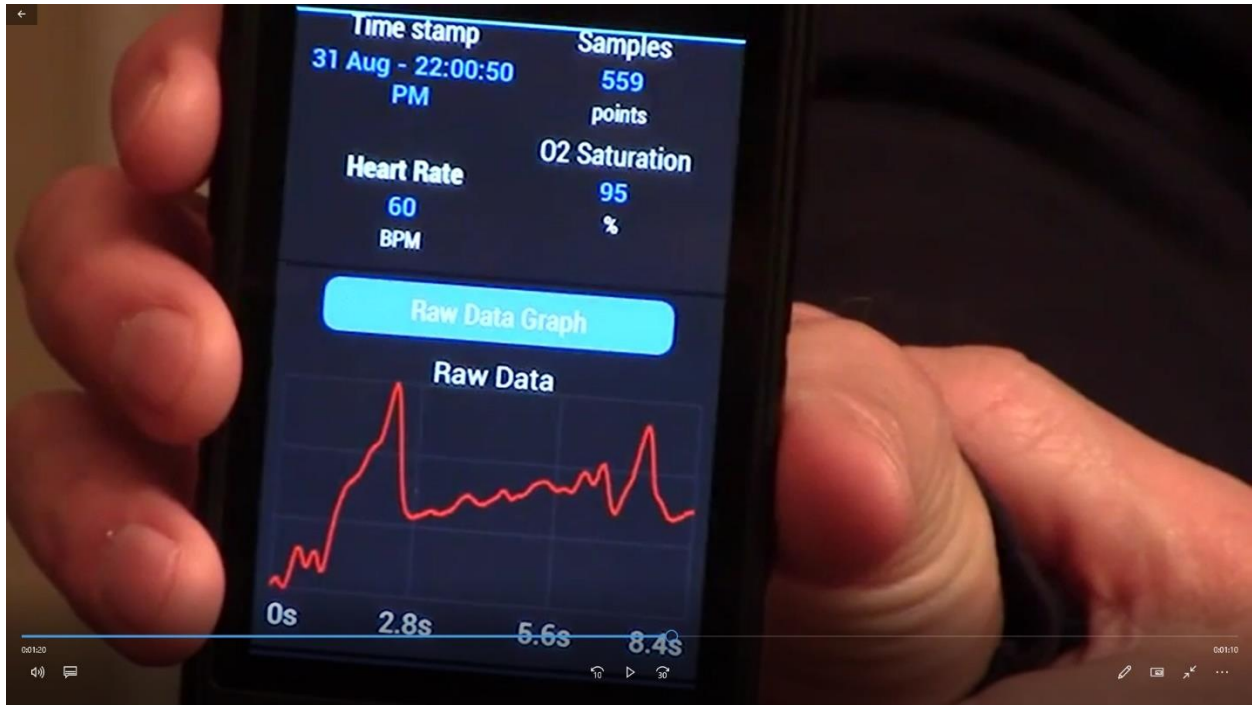
graph, this implies a minimum data sampling frequency of more than two data points per second. As described above, the software application in Hensen-Video can update the display on the screen in real time, and if it could receive raw data at a rate of more than two data points per second, it could also update the display of that data in real time. In fact, given the time scale of the “Raw Data” graph, any updates to the graph would cause the red line to quickly move in the span of a couple of seconds. However, the “Raw Data” displayed in Hensen-Video never changes. At a minimum, the fact that the “Raw Data” display does not change implies that the data is stale and does not reflect real-time data samples. But, as discussed below, there are other aspects of this display that indicate that portions of the display are static and inoperative.

81. At 1:17 in Hensen-Video the clock in the status bar at the top of the smartphone display says 10:00 PM. At 1:32 in Hensen-Video, the video has been cut to fade to a close-up of the Walgreens pulse oximeter. At 2:03 in Hensen-Video, the clock in the status bar at the top of the smartphone display says 10:12 PM. There is nothing in the video to suggest that this clock has been altered or tampered with in any way, so I assume that the times it shows are correct. The difference between elapsed time in the video and the apparent elapsed time shown by the smartphone clock is more than 11 minutes.

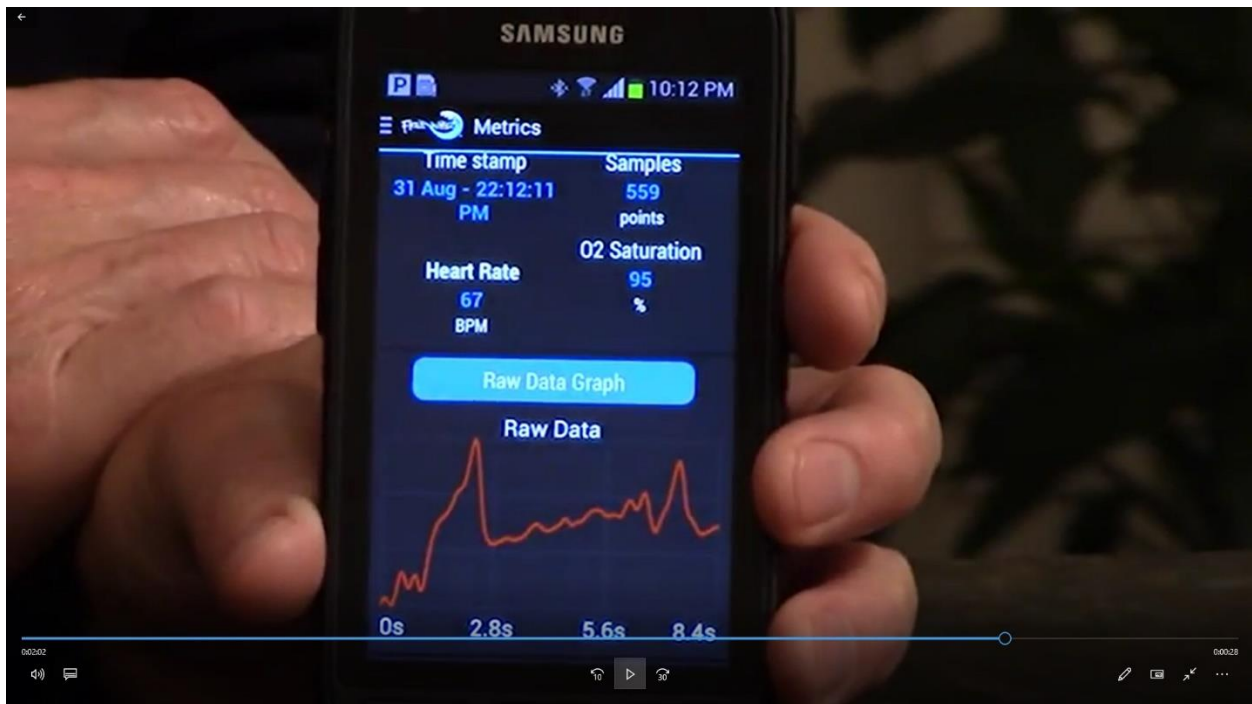


Hensen-Video at 1:17 (left) and 2:03 (right)

82. At 2:02, Hensen-Video shows the “Metrics” screen again, this time with a “Heart Rate” value of “67 BPM” instead of the “60 BPM” value shown previously at 1:20. However, the “Metrics” screen shows a “Samples” value of “559 points” at 2:02, which is exactly the same value as was shown previously at 1:20. The “Metrics” screen also shows exactly the same “Raw Data” graph as was shown previously at 1:20. The images below are screen captures of Hensen-Video at these two points.



Hensen-Video at 1:20



Hensen-Video at 2:02

83. If the smartphone application had received data that it could use to update the displayed heart rate, it must have had at least one more sample data point. However, the display of “Samples” remains static at “559 points” at both times in the video. Likewise, if the heart rate data is derived from the raw data waveform as stated by Dr. Hensen, the smartphone application must have received new and different raw data from which it could derive the heart rate. Given the elapsed real time of more than 11 minutes between the two displays, the entire graph of raw data should be new. However, the display of the “Raw Data” graph is exactly the same at both times in the video.

84. This is clear evidence that several aspects of the smartphone application shown in Hensen-Video are static and non-functional, which would be common in an early prototype of an application. First, the “Raw Data” graph is static and does not show data captured in real time. Second, the number of “Samples” is static and does not show data captured in real time. Third, if the raw data and sample data points are static, there can be no source data that the smartphone application could use to determine the heart rate. Therefore, the heart rate display is not produced from data received by the smartphone application in real time.

85. Based on these observations, I conclude that the smartphone application shown in Hensen-Video is not capable of receiving pulse oximetry data from the earpieces. This conclusion fits well with the previous observations about Hensen-

Video, particularly that the heart rate value never changes while it is displayed. In fact, the new heart rate value of 67 beats per minute displayed in Hensen-Video again remains static for at least 32 seconds (Ex. 1004, 1:45 to 2:17).

86. It is true that the heart rate displayed in Hensen-Video changes from 60 beats per minute at 1:20 to 67 beats per minute at 2:02. However, as noted above, there is a more than 11-minute gap of elapsed real time between these two points in Hensen-Video. It would have been trivial for the heart rate data in the smartphone application to be manually updated during this gap in the video. As noted above, while Dr. Hensen says that this is his heart rate, he never says that the data was captured by the earpieces or received by the smartphone application (*See Exhibit A*). As we see in the video, Dr. Hensen can measure his heart rate with the Walgreens pulse oximeter, so his heart rate data is available even if the smartphone application is not capable of receiving it from the earpieces.

87. The conclusion that the smartphone application shown in Hensen-Video is not fully functional and not capable of receiving data from the earpieces fits well with everything shown in the video. Even assuming that all Hensen's statements are true, Dr. Hensen says nothing in the video to contradict this conclusion. In fact, given that FreeWavz was an early-stage startup in need of funding at the time of the video, Dr. Hensen would have had every incentive to demonstrate an prototype application that was not fully functional while narrating in

a way that would imply that it did more than it was actually capable of, but while being careful not to make statements that were untrue.

88. In fact, FreeWavz never delivered a functional smartphone application, as shown by the comments on the FreeWavz Update #49, for example:

I don't know why you expect us to believe any of the lies you call updates. You lied in your original pitch since you did not have a prototype ready to go to market. You said you just needed money for the manufacturing. Well, you haven't spent a dime on manufacturing yet here you are looking for more money.

It's too late - you had a great idea which is why almost 1,600 people backed you. But the big players in the game are already on versions 2 or even 3 of their products in this space and they are better than you will ever be.

Thanks for ruining Kickstarter for so many of us.

Another hoot is I remember you had the nerve to talk junk about Bragi to my face, too. Well, they succeeded and you didn't. (Ex. 2024, p. 9).

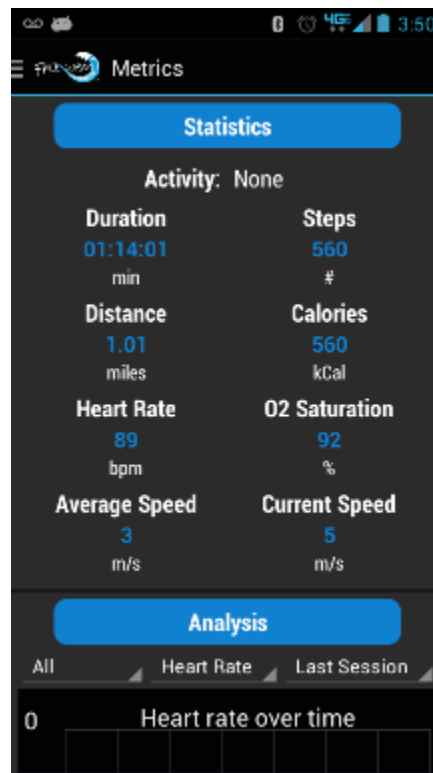
89. The Petition's statements regarding Hensen-Video in relation to Grounds 1-3 are analyzed below in detail in the context of the relevant Claims.

ii. Hensen-Kickstarter Does Not Show Screen Shots from a Functioning Smartphone Application

90. Hensen-Kickstarter shows "some sample page screen shots to demonstrate their appearance." The sample screen shots in Hensen-Kickstarter appear to have been captured from a smartphone similar to the one shown in Hensen-Video (Ex. 1007). However, there are inconsistencies in at least one of the screen shots that show that it cannot have been captured from a functioning smartphone

application.

91. The screen shot labelled “Metrics” in Hensen-Kickstarter (reproduced below) shows several statistics which are presumably related: a duration of 01:14:01, a distance of 1.01 miles, an average speed of 3 meters per second, and a count of 560 steps. If these statistics are interpreted as having been recorded by the smartphone application during the specified duration, their values are internally inconsistent and impossible to reconcile.



The “Metrics” screen shot from Hensen-Kickstarter

92. First, the statistics show a distance travelled of 1.01 miles and a count of 560 steps taken. If the steps counted were taken while walking the distance

recorded, each step would have to be more than 9.5 feet, which is an incredibly long stride for a human being. It might be plausible to explain this result if the distance was travelled partly by walking and partly by a form of transportation that did not require walking (e.g., wheeled transportation). However, the other discrepancies in this screen shot suggest that both these figures are fictitious.

93. Second, if the 1.01 miles were travelled over the duration of 01:14:01, that would imply an average speed of about 0.8 miles per hour, which is less than 1/3 of the average walking pace of a human being. That would imply walking at an extremely slow pace, or if some of the travel was wheeled, rolling at a snail's pace. However, the average speed shown in the screen shot is 3 meters per second, which is about 6.7 miles per hour. This is a fast running pace, somewhat faster than the average speed of a marathon runner. If the data in the "Metrics" screen were recorded from actual events, it would be impossible to have both an average speed of 0.8 miles per hour and an average speed of 6.7 miles per hour.

94. The obvious explanation for these irreconcilable facts is that the data displayed on the screens is exemplary and not recorded by a functional smartphone application. This would be common in the design of a smartphone application, where sample screens would be mocked up with sample data to illustrate the relative size and placement of elements on the screen. In fact, this is exactly what Hensen-Kickstarter says it shows: "some sample page screen shots to demonstrate their

appearance” (Ex. 1007).

95. There is no evidence in Hensen-Kickstarter that the “sample page screen shots” are from a functional smartphone application and given the discrepancies in at least one of the screens, there is no reason to assume that any of the screens are from a functional smartphone application. Instead, these screen shots are apparently non-functional mockups that “demonstrate the appearance” of a smartphone application that FreeWavz never delivered (*See* Ex. 2024).

96. The Petition’s statements regarding Hensen-Kickstarter in relation to Grounds 4-6 are analyzed below in detail in the context of the relevant Claims.

B. Ground 1

i. Claim 1

97. As discussed below, the Petition fails to show that the alleged prior art satisfies Elements 1D and 1E of Claim 1 of the ’385 Patent. So, the Petition has not shown by a preponderance of evidence that the combination of Hensen-Patent and Hensen-Video anticipates Claim 1 of the Challenged Claims.

ii. Element 1D: “wherein the software application provides a user interface for use by a user of the at least one wireless ear piece to interact with the at least one wireless ear piece;”

98. The Petition relies on the combination of Hensen-Patent and Hensen-Video in an attempt to show that the alleged prior art anticipates Element 1D of the Challenged Claims:

Hensen-Patent in combination with Hensen-Video discloses a software application for executing on a computing device (e.g., remote control device 51) having a display (e.g., display 53) associated therewith. The combination further discloses that the software application provides a user interface (e.g., a user interface of remote control device 51) for use by a user of the at least one wireless earpiece (e.g., headphone units 30 and 60) to interact with the at least one wireless earpiece. (Petition at p. 42, text coloring omitted).

99. However, Hensen-Video does not show that the software application in the video can interact with the earpieces in the video. As discussed above, the software application in Hensen-Video is not fully functional and cannot display heart rate data from the earpieces in the video. But, even if some aspects of the software application in Hensen-Video are functional, Hensen-Video still does not show that the software application can interact with the earpieces in the video.

100. Petitioner understands that the plain and ordinary meaning of allowing a user to interact with the earpieces means sending commands to the earpieces and receiving information from the earpieces: “Hensen-Patent discloses a remote control device with a display, where the remote control device allows a user to interact with the earpieces by sending commands to the earpieces and displaying information received from the earpieces” (Petition at p. 43, text coloring omitted, emphasis added).

101. Petitioner also understands that Hensen-Patent does not disclose a software application but merely “[a] stereo audio headphone apparatus” (Ex. 1003,

13:55) and “a remote control unit” (Ex. 1003, 16:8) because Petitioner uses this deficiency as part of the justification to combine Hensen-Patent and Hensen-Video (Petition at pp. 33-34). So, Petitioner clearly understands that Hensen-Patent alone is not sufficient to satisfy Element 1D of the Challenged Claims.

102. However, Hensen-Video does not show that the software application in the video allows a user to interact with the earpieces by sending commands to the earpieces and displaying information received from the earpieces. In fact, Hensen-Video never shows at any point that any command can be sent from the software application to the earpieces. Nor does the Petition argue that Hensen-Video shows sending commands to the earpieces. The Petition’s sole example of the software application displaying information received from the earpieces is that “the user (Dr. Hensen) is able to monitor the battery life of the earpieces” (Petition at p. 45). The Petition never provides an example from Hensen-Video that shows sending commands to the earpieces, nor could it as Hensen-Video never shows this.

103. Hensen-Patent does not disclose any software application as required by Element 1D of the Challenged Claims. Hensen-Video does not show a software application that can interact with the earpieces as required by Element 1D of the Challenged Claims. So, the Petition has not shown by a preponderance of evidence that the combination of Hensen-Patent and Hensen-Video anticipates Element 1D of the Challenged claims.

- iii. **Element 1E: “wherein the user interface is configured to display a visual representation of the at least one wireless ear piece on at least one of the one or more screen displays, the visual representation indicative of a function or property of the at least one wireless ear piece communicated from the at least one wireless earpiece to the computing device.”**

104. The Petition improperly splits this Element into two separate phrases (Petition’s claim elements 1E at p. 48 and 1F at p. 51) and attempts to show that the alleged prior art anticipates the individual portions of this Element. However, in doing so, the Petition fails to consider the claim terms in the full context of the claim.

105. At p. 51, the Petition argues that “Hensen-Video further discloses that the visual representation is indicative of a function or property of the at least one wireless earpiece communicated from the at least one wireless earpiece to the computing device (e.g., battery life).” But by splitting Element 1E into separate phrases, the Petition has omitted the antecedent for the term “visual representation,” which is “a visual representation of the at least one wireless ear piece.” (Ex. 1001, 7:30-36).

106. Read properly in its entirety, Element 1E of the Challenged Claims requires “a visual representation of the at least one wireless ear piece” and that this visual representation of the at least one wireless earpiece must be “indicative of a function or property of the at least one wireless ear piece communicated from the at least one wireless earpiece to the computing device” (Ex. 1001, 7:30-36). That is, merely displaying a function or property of the wireless earpiece in the user interface

is not sufficient to satisfy Element 1E of the Challenged Claims. To satisfy this Element, the visual representation of the wireless earpiece itself must indicate a function or property of the earpiece.

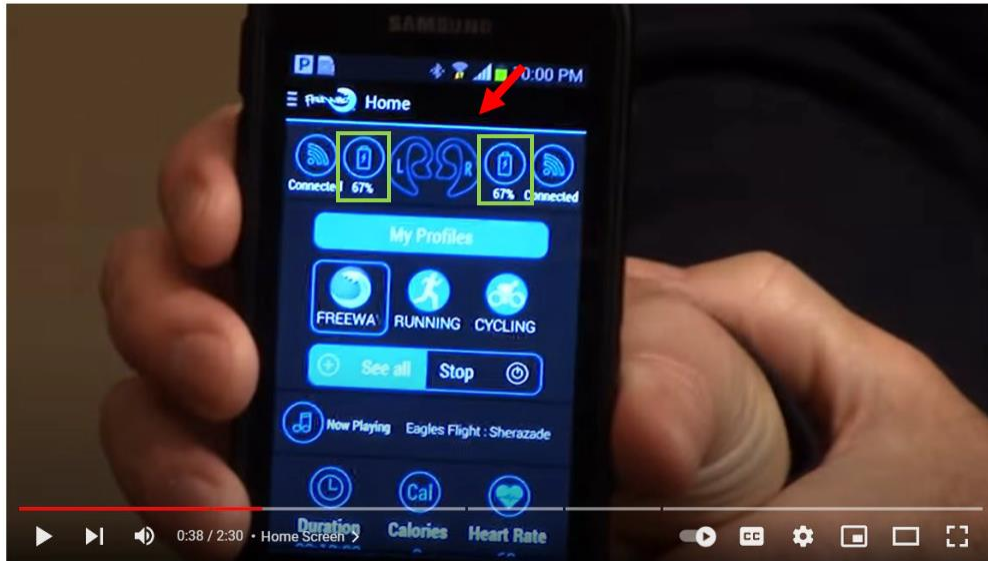
107. This is in fact the case in the '385 Patent (Ex. 1001), where Figures 4 and 5 show the user interface of the software application including a visual representation of both earpieces, and which show the lights on the left and right earpieces alternately lit or unlit. These lights are “a function or property of the wireless ear piece” because the earpieces “may be configured to convey different information using one or more of the LED (s) **20** based on context or mode of operation of the device” (Ex. 1001, 3:64-67, emphasis in original). The visual representations of the earpieces in Figures 4 and 5 clearly show these the lights in the earpieces. In the '385 Patent, the status of these lights is clearly synchronized between the software application and the earpieces themselves and so must be communicated from the earpieces to the software application:

In addition, portions of the left ear piece **102** are illuminated using one or more LEDs. This portion of the ear piece may be called a corona. Thus, a user using the mobile app may quickly and easily make the association between the left ear piece **102** which they are wearing and what is shown on the screen display. (Ex. 1001, 4:46-51, emphasis in original.)

108. Neither Hensen-Patent nor Hensen-Video shows a visual representation of the wireless earpiece indicative of a function or property of the wireless earpiece

as required by Element 1E of the Challenged Claims. Hensen-Patent does not disclose a “user interface [that] is configured to display a visual representation of the at least one wireless ear piece,” nor does Petition argue that it does. This deficiency is the motivation that Petitioner uses to combine Hensen-Patent with Hensen-Video in an attempt to satisfy Element 1E of the Challenged Claims.

109. However, Hensen-Video also does not show a visual representation of the wireless earpiece indicative of a function or property of the wireless earpiece as required by Element 1E of the Challenged Claims. The Petition says that “Hensen-Video’s user interface displays a visual representation of the left (L) and right (R) earpieces on the ‘home screen’ display,” but points to “an indication of the battery life of each of the earpieces” (Ppetition at p. 51) and emphasizes these things separately in a screen shot of Hensen-Video, reproduced here.



Petition at p. 52 citing Hensen-Video at 0:38 with Petitioner's annotations

110. First, the visual representations of the earpieces in Hensen-Video (as cited by the Petition) do not show functions or properties of the earpieces that have been communicated from the earpieces to the computing device as required by Element 1E of the Challenged Claims. The visual representations of the earpieces themselves merely show outlines of the earpieces labelled with "L" and "R," none of which are functions or properties of the earpieces that are communicated from the earpieces to the computing device.

111. Second, the battery life of the earpieces in Hensen-Video (as cited by the Petition) is not shown in the visual representations of the earpieces, but separate from and adjacent to the visual representations of the earpieces. Petitioner understands and emphasizes this distinction by pointing to the visual representations

of the earpieces with a **red arrow** and by enclosing the display of the battery life in **green boxes** (Petition at p. 52). Petitioner erroneously argues that a separate display of battery life adjacent to the visual representations of the earpieces satisfies Element 1E of the Challenged Claims (Petition at pp. 51-52), but Petitioner makes this error because Petitioner has improperly separated Element 1E into two phrases and has lost the antecedent for “visual representation,” which is the “visual representation of the at least one wireless ear piece.” The display of the battery life in Hensen-Video (as cited by Petitioner) is distinct and separate from the visual representation of the earpieces, and so it cannot satisfy Element 1E of the Challenged Claims.

112. The Petition makes some arguments about Claim 7 of the Challenged Claims in the context of Element 1E of the Challenged Claims (Petition at p. 53). I address these arguments below in the section relating to Claim 7.

113. As discussed above '385 Patent discloses and claims a software application executing on a computing device “wherein the user interface is configured to display a visual representation of the at least one wireless ear piece on at least one of the one or more screen displays, the visual representation indicative of a function or property of the at least one wireless ear piece communicated from the at least one wireless earpiece to the computing device.” Petitioner has not shown that the alleged prior art satisfies this limitation in its entirety because neither Hensen-Patent nor Hensen-Video, nor the two in combination, discloses a

computing device and software application with a user interface that displays a visual representation of a wireless earpiece in which the visual representation of the wireless earpiece indicates a function or property of the wireless earpiece that has been communicated from the wireless earpiece to the computing device. So, the Petition has not shown by a preponderance of evidence that the combination of Hensen-Patent and Hensen-Video anticipates Element 1E of the Challenged claims.

iv. Claim 2: “The system of claim 1 wherein the at least one wireless earpiece comprises a physiological sensor.”

114. Claim 2 is a dependent claim and depends on Claim 1 of the Challenged Claims. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1, as discussed above in relation to Claim 1, Petitioner has not shown that the alleged prior art anticipates Claim 2. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 1 (which it does not, as discussed above), to the extent that the Petition’s argument relies on Hensen-Video, the Petition does not show that the alleged prior art anticipates Claim 2.

115. The Petition’s argument in relation to Claim 2 relies in part on Hensen-Video. As described above in the analysis of the alleged prior art, Hensen-Video does not show a functional smartphone application. The Petition claims that “Like the pulse oximeter described in Hensen-Patent, Hensen-Video’s pulse oximeter measures physiological quantities including heart rate and oxygen saturation”

(Petition at p. 58). However, there is no evidence in Hensen-Video that the wireless earpieces shown in the video can measure heart rate and oxygen saturation. Dr. Hensen does not say that the wireless earpieces in the video can measure heart rate and oxygen saturation. Instead, Dr. Hensen says, “Right now I’m actually listening to some music and *I’ve also engaged the pulse oximetry*” (Petition at p. 58, citing Hensen-Video at 0:09-0:19, emphasis in original). The Petition incorrectly asserts that this statement means that the wireless earpieces in the video can measure heart rate and oxygen saturation. However, the phrase, “I’ve also engaged the pulse oximetry” does not conclusively support the Petition’s assertion. So, to the extent that the Petition’s argument relies on Hensen-Video, the Petition has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 2 of the Challenged claims.

v. Claim 3: “The system of claim 2 wherein the software application provides for tracking one or more physical activities using the physiological sensor.”

116. Claim 3 is a dependent claim and depends both on Claims 1 and 2 of the Challenged Claims. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1, as discussed above in relation to Claim 1, Petitioner has not shown that the alleged prior art anticipates Claim 3. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 1 (which it does not, as discussed above), the alleged prior art does not anticipate Claim 3.

117. The Petition argues that the combination of Hensen-Patent and Hensen-Video “discloses that the software application provides for tracking one or more physical activities using the physiological sensor (e.g., a pulse oximeter)” (Petition at p. 59). However, neither Hensen-Patent nor Hensen-Video shows tracking one or more physical activities using the physiological sensor. Even in combination, the alleged prior art does not satisfy Claim 3 of the Challenged Claims.

118. First, Hensen-Patent does not show “tracking one or more physical activities” as required by Claim 3, nor does Petitioner’s argument establish that it does. Satisfying this claim limitation requires that the software application of Claim 1 be able to track a physical activity using the physiological sensor in at least one wireless earpiece. A POSITA would understand that tracking a physical activity means recording data relating to the physical activity.

119. The Petition says that “Hensen-Patent discloses that the earpieces can include a pulse oximeter and can transmit pulse oximetry data from the pulse oximeter to the remote control device” (Petition at p. 60). Transmitting pulse oximetry data from the pulse oximeter to the remote control device is not “tracking one or more physical activities” because the data is merely transmitted and not recorded.

120. The Petition says that “Hensen-Patent discloses that the wireless

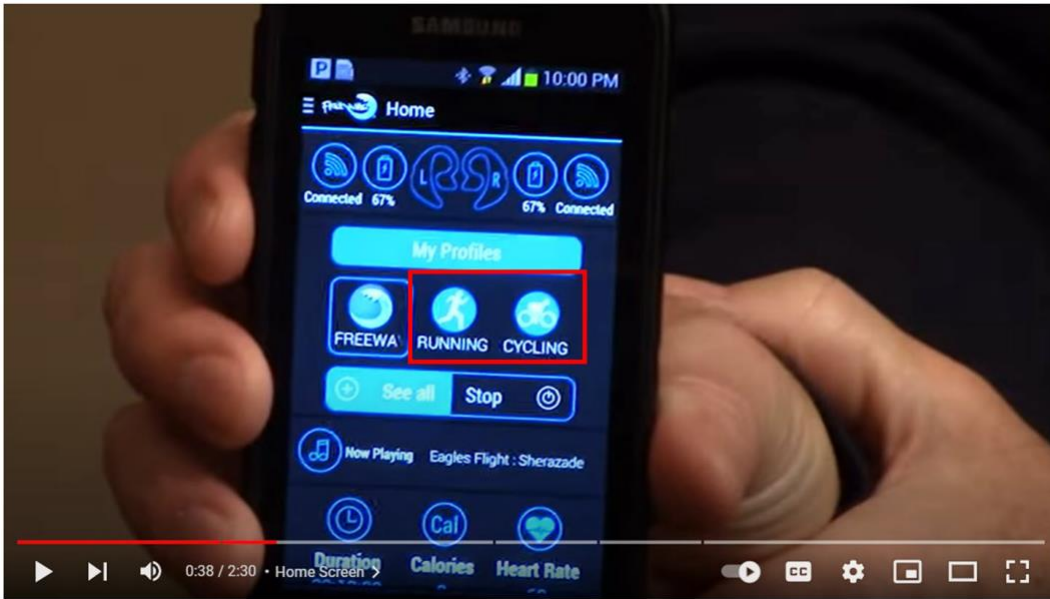
earpiece system is intended to be used while the user participates in a variety of physical activities, including running, cycling, and swimming” (Petition at p. 61). Using a wireless earpiece while participating in a variety of physical activities is not “tracking one or more physical activities” because the earpiece system may be used for purposes other than collecting data from a physiological sensor (*e.g.*, listening to music) and because even if the physiological sensor is measuring data, merely using the earpiece system is not recording data relating to the physical activity.

121. Second, Hensen-Video does not show that “the software application provides for tracking one or more physical activities using the physiological sensor” as required by Claim 3. As discussed above in relation to Claim 1, the software application shown in Hensen-Video is not fully functional and cannot receive data from the wireless earpieces. As such, the software application shown in Hensen-Video cannot track a physical activity using the physiological sensor in the wireless earpieces.

122. However, even if we assume for the sake of argument that the software application shown in Hensen-Video can receive data from the physiological sensor (which it cannot), Hensen-Video still does not show that the software application can be used to track a physical activity. In its argument regarding Claim 3, Petition makes unsupported assertions about what is shown in Hensen-Video and relies on these unsupported assertions for its argument.

123. The Petition claims that “Hensen-Video discloses that the earpieces include a physiological sensor (e.g., a pulse oximeter) and send pulse oximetry data to the remote control device” (Petition at p. 62, text coloring omitted) and relies on this quote from Hensen-Video to support its claim: “I’m currently wearing both the right and left units. I’ve already turned them on. *I’ve paired them with each other and also paired with the source device*, in this case, a smartphone. I’m going to go ahead and show a few functions that are currently running. Right now I’m actually listening to some music and *I’ve also engaged the pulse oximetry*” (Petition at p. 62, emphasis in original, text coloring omitted). However, the statement “I’ve also engaged the pulse oximetry” does not mean that the earpieces are able to send pulse oximetry data to the smartphone application. Even if we take this statement at face value and assume it to be completely true, at most it means that the wireless earpieces have a pulse oximetry sensor and that the pulse oximetry sensor is turned on (*i.e.*, “engaged”). The Petition’s assertion that this statement means that the earpieces can send pulse oximetry data to the smartphone application purely conjectures and is not supported by the evidence in Hensen-Video.

124. The Petition claims that “Hensen-Video discloses that the software application is intended to be used while the user participates in a variety of physical activities” (Petition at p.62). Petition points to Hensen-Video at 0:38 to support this assertion. Petitioner’s screen shot of the video is reproduced below.



Petition at p. 63 citing Hensen-Video at 0:38 with Petitioner's annotation

125. As discussed above in the analysis of the alleged prior art, the software application shown in Hensen-Video is not fully functional. At no point in Hensen-Video does Dr. Hensen interact with the icons in the “My Profiles” section of the smartphone application display (Ex. 1004), nor does Dr. Hensen mention the “My Profiles” section of the smartphone application display (See Exhibit A). Hensen-Video does not show, and we cannot know whether this aspect of the smartphone application is functional. The Petition’s assertion that the software application can be used while the user participates in a variety of physical activities is purely conjecture and not supported by the evidence in Hensen-Video.

126. Referring to Hensen-Video, the Petition claims that “the software application running on the remote control device provides for tracking one or more

physical activities using the data from the pulse oximeter” and asserts that “the software application provides for tracking heart rate during a physical activity using the pulse oximeter” (Petition at p. 63). The Petition also claims that “The software application also provides for tracking oxygen saturation during the physical activity using the pulse oximeter” (Petition at p. 64).

127. As discussed above in the analysis of the alleged prior art, the software application shown in Hensen-Video is not fully functional and is not capable of receiving pulse oximetry data from the earpieces. However, even if the software application were able to receive pulse oximetry data from the earpieces (which it is not), the Petition does not show that the smartphone application “provides for tracking one or more physical activities using the physiological sensor” as required by Claim 3 of the Challenged Claims (Ex. 1001, 7:39-41).

128. First, the Petition points to the heart rate value of 60 beats per minute displayed in the smartphone application as an example of “tracking heart rate during a physical activity using the pulse oximeter” (Petition at p. 63). The screen shot of Hensen-Video that the Petition uses to support this argument is reproduced below.

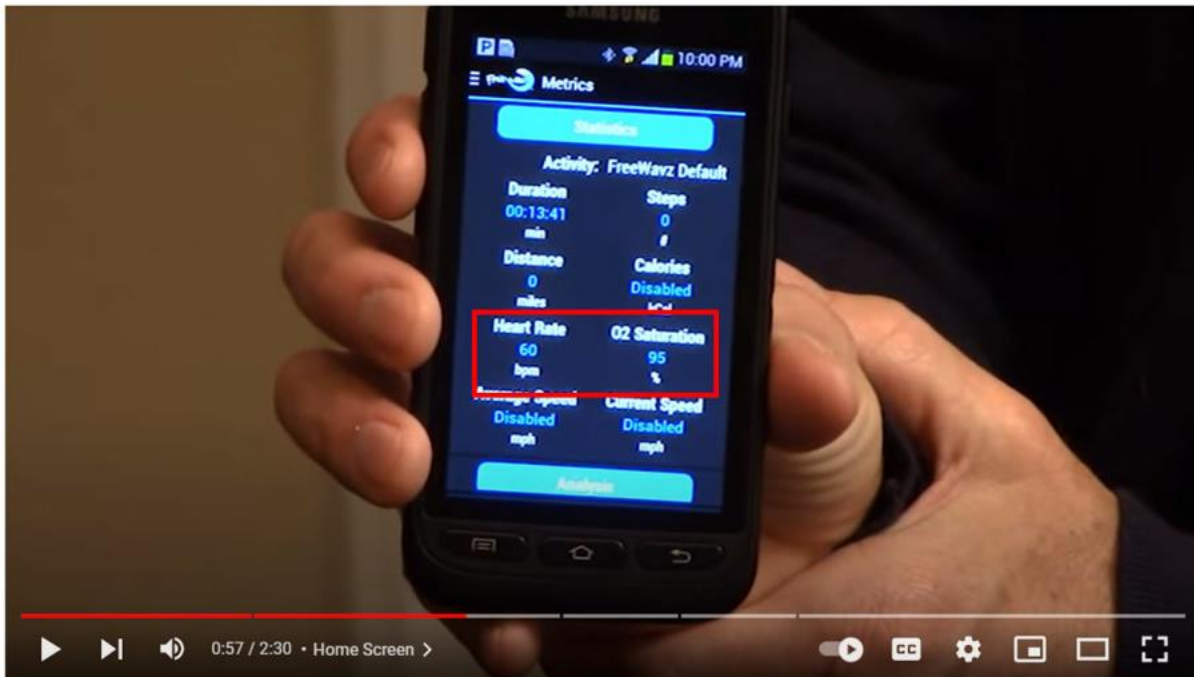


Petition at p. 63 citing Hensen-Video at 0:47 with Petitioner's annotation

129. As discussed above, a POSITA would understand that tracking a physical activity means recording data relating to the physical activity. Even if we assume that the heart rate data displayed in the smartphone application in Hensen-Video has been measured using data from the earpieces (which it has not been, as discussed above), displaying a single value for the heart rate is not tracking a physical activity as required by Claim 3. The Petition does not argue, and Hensen-Video does not show that the smartphone application is capable of recording heart rate data at all.

130. Second, the Petition points to the oxygen saturation value of 95% displayed in the smartphone application as an example of “tracking oxygen saturation during the physical activity using the pulse oximeter” (Petition at p. 64).

The screen shot of Hensen-Video that the Petition uses to support this argument is reproduced below.

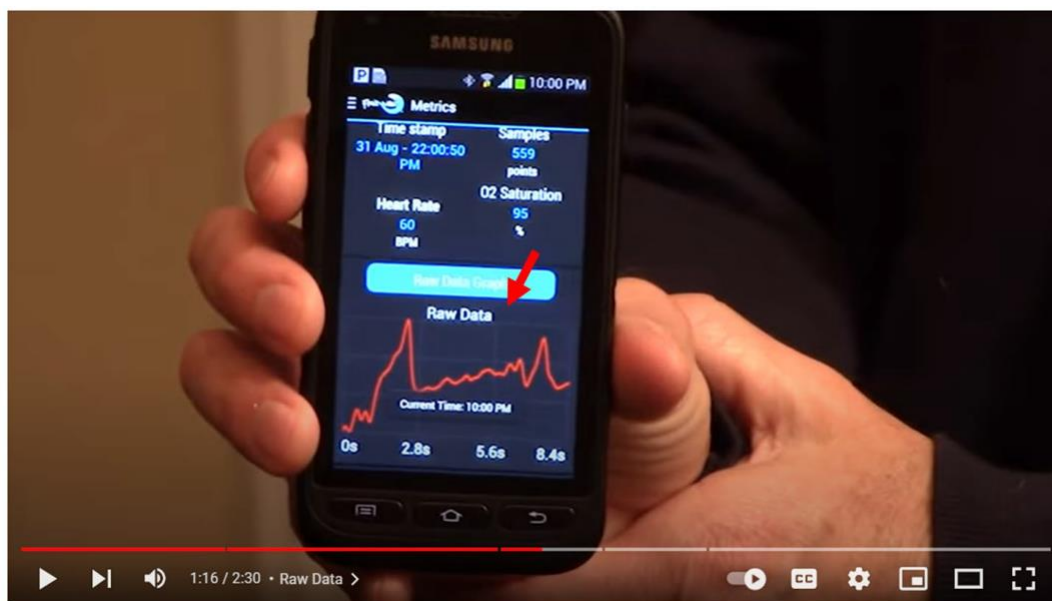


Petition at p. 64 citing Hensen-Video at 0:57 with Petitioner's annotation

131. Even if we assume that the oxygen saturation data displayed in the smartphone application in Hensen-Video has been measured using data from the earpieces (which it has not been, as discussed above), displaying a single value for the oxygen saturation is not tracking a physical activity as required by Claim 3. The Petition does not argue, and Hensen-Video does not show that the smartphone application is capable of recording oxygen saturation data at all.

132. Third, the Petition points to the “Raw Data” graph shown in the smartphone application in its argument that “the software application also provides

for tracking these quantities—heart rate and oxygen saturation—over time using a waveform representation of data from the pulse oximeter” (Petition at p. 65). The screen shot of Hensen-Video that the Petition uses to support this argument is reproduced below.



Petition at p. 65 citing Hensen-Video at 1:16 with Petitioner’s annotation

133. As discussed above in the analysis of the alleged prior art, Hensen-Video does not show that the “Raw Data” displayed in the smartphone application has been measured by the pulse oximeter in the earpieces. Nor does Hensen-Video show that the “Raw Data” is live or even recent. In fact, Hensen-Video shows that the “Raw Data” displayed in the smartphone application is completely static and does not change over the more than 12-minute period during which the video was recorded, which is remarkable given that the scale of the “Raw Data” is measured in

fractions of a second. As discussed above in the analysis of the alleged prior art, Hensen-Video also shows that the heart rate value displayed in the smartphone application is not derived from the “Raw Data” because the heart rate value changes while the “Raw Data” does not. In fact, Hensen-Video does not show in any way that the “Raw Data” has been recorded by the smartphone application.

134. Furthermore, the Petition’s citations of Hensen-Video do not show that the heart rate value, oxygen saturation value, or “Raw Data” are associated with “one or more physical activities” as required by Claim 3 of the Challenged Claims (Ex. 1001, 7:39-41). The screen shot of Hensen-Video at 0:47 (above) shows the heart rate value alone and does not associate it with any physical activity. The screen shot of Hensen-Video at 0:57 (above) shows the oxygen saturation value alone and does not associate it with any physical activity. The screen shot of Hensen-Video at 1:16 (above) shows the “Raw Data” alone and does not associate it with any physical activity. As described above, merely displaying data from a physiological sensor is not tracking a physical activity as required by Claim 3 of the Challenged Claims.

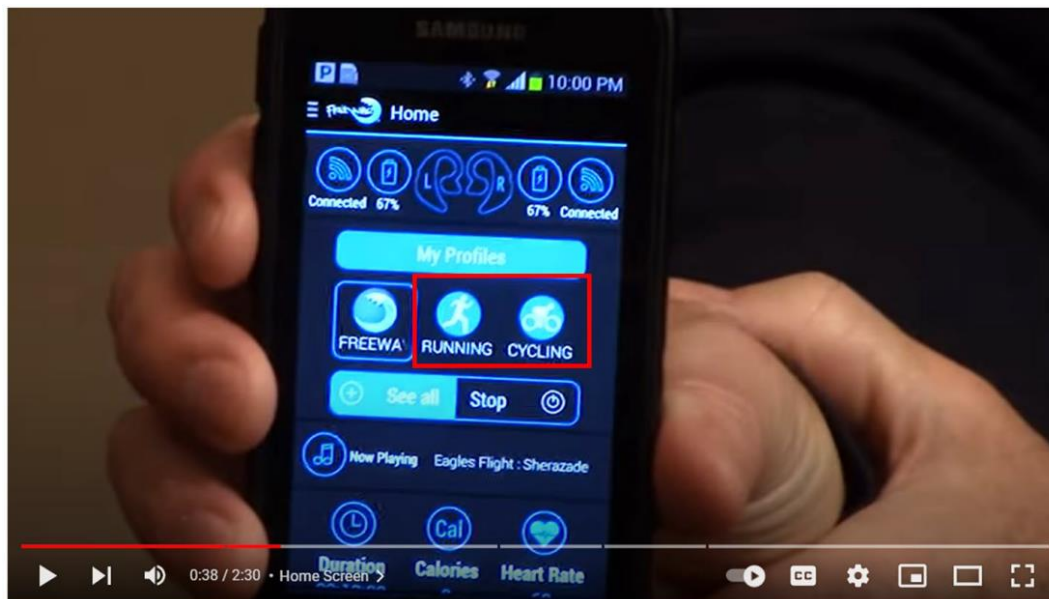
135. Petitioner has not shown that the alleged prior art satisfies this claim in its entirety because neither Hensen-Patent nor Hensen-Video, nor the two in combination, disclose “[a] software application [that] provides for tracking one or more physical activities using the physiological sensor” (Ex. 1001, 7:39-41). So, the Petition has not shown by a preponderance of evidence that the combination of

Hensen-Patent and Hensen-Video anticipates Claim 3 of the Challenged Claims.

vi. Claim 4: “The system of claim 3 wherein the physical activities are selected from a set consisting of running, biking, and swimming.”

136. Claim 4 is a dependent claim and depends on Claim 1, 2, and 3 of the Challenged Claims. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1, 2, and 3, as discussed in the respective sections above, Petitioner has not shown that the alleged prior art anticipates Claim 3. Even if we assume for the sake of argument that the alleged prior art anticipates Claims 1, 2, and 3 (which it does not, as discussed above), to the extent that the Petition’s argument relies on Hensen-Video, the Petition does not show that the alleged prior art anticipates Claim 4.

137. The Petition refers to Hensen-Video in its argument regarding Claim 4: “Hensen-Video discloses that the software application provides an interface for selecting the activities to be tracked (in the example shown below, running and cycling).” The Petition’s screen shot of Hensen-Video is reproduced below.



Petition at p. 67 citing Hensen-Video at 0:38 with Petitioner's annotation

138. However, Dr. Hensen never mentions this annotated portion of the smartphone application in the video (See Exhibit A), and Hensen-Video never shows any interactions with this annotated portion of the smartphone application (Ex. 1004). Therefore, there is no evidence that in Hensen-Video that this annotated portion of the smartphone application provides an interface for selecting the activities to be tracked, and so the Petition's assertion about this annotated portion of the smartphone application is completely unfounded.

139. The Petition does not show that the physical activities of running and biking (*i.e.*, cycling) can be selected in the alleged prior art. So, the Petition has not shown by a preponderance of evidence that the combination of Hensen-Patent and Hensen-Video anticipates Claim 4 of the Challenged Claims.

vii. Claim 9: “The system of claim 1 wherein the at least one wireless ear piece comprises onboard storage for storing audio files.”

140. Claim 9 is a dependent claim and depends on Claim 1 of the Challenged Claims. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1, as discussed above in relation to Claim 1, Petitioner has not shown that the alleged prior art anticipates Claim 9.

viii. Claim 10: “The system of claim 1 wherein the at least one wireless ear piece is configured to store at least one playlist.”

141. Claim 10 is a dependent claim and depends on Claim 1 of the Challenged Claims. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1, as discussed above in relation to Claim 1, Petitioner has not shown that the alleged prior art anticipates Claim 10. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 1 (which it does not, as discussed above), the alleged prior art does not anticipate Claim 10.

142. The Petition claims that Hensen-Patent discloses that the earpieces store at least one playlist: “Hensen-Patent further discloses that the stored audio files include at least one playlist of audio files—for example, storing a playlist allows the user to ‘skip’ to another song in the playlist” (Petition at p. 69). The Petition cites Hensen-Patent to support this argument: “For example, if the stereo audio source is a memory having stereo audio (music) stored thereon, a selected one of the input devices 37 may be for *skipping to another song*, or fast-forwarding through a song”

(Petition at pp. 69-70, citing Ex. 1003, 5:41-44, Petitioner’s emphasis).

143. Playlists in portable digital music players were well known at the time of the patent. In the original iPod user manual published in 2002, Apple described playlists as “songs you’ve organized into lists” (Ex. 2023). This description would fit well with a POSITA’s understanding of a playlist at the time of the ’385 Patent. In this context, there are two defining aspects of a playlist. First, a playlist is a “list,” which is an ordered sequence of songs. Second, a playlist is a list of songs selected and “organized” by the user. That is, the user decides which songs are in the playlist and determines the sequence of songs in the playlist.

144. The Petition’s citation from Hensen-Patent does not show that Hensen-Patent discloses the wireless earpiece is configured to store at least one playlist as required by Claim 10. The Petition’s citation merely shows that the audio files stored in the earpiece of Hensen-Patent are in an ordered sequence: “a selected one of the input devices 37 may be for *skipping to another song*” (Petitioner’s emphasis). Nothing in the Petition suggests that the user can decide which songs are in this sequence or that the user can determine how these songs are sequenced. And indeed, nothing in Hensen-Patent shows that the user can decide which songs are in this sequence or that the user can determine how these songs are sequenced.

145. The Petition relies solely on Hensen-Patent to satisfy Claim 10, but

does not show that Hensen-Patent fully satisfies Claim 10: “The system of claim 1 wherein the at least one wireless ear piece is configured to store at least one playlist” (emphasis added), and so Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 10 of the Challenged Claims.

ix. Claim 11: “The system of claim 1 wherein the software application provides for connecting the at least one wireless ear piece with the computing device.”

146. Claim 11 is a dependent claim and depends on Claim 1 of the Challenged Claims. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1, as discussed above in relation to Claim 1, Petitioner has not shown that the alleged prior art anticipates Claim 11. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 1 (which it does not, as discussed above), the alleged prior art does not anticipate Claim 11.

147. The Petition refers to Hensen-Video in its argument relating to Claim 11: “Referring to the screenshot below, Hensen-Video discloses a software application that provides for connecting (e.g., pairing) the at least one wireless earpiece (e.g., right and left headphone units) with the computing device (e.g., smartphone computing device)” (Petition at p. 70, text coloring omitted). The Petition’s screen shot of Hensen-Video is reproduced below.



Petition at p. 70 citing Hensen-Video at 0:17 with Petitioner's annotations

148. The Petition quotes Dr. Hensen to support its argument: “I’ve paired [the earpieces] with each other and also paired with the source device, in this case, a smartphone” (Petition at p. 70, citing Hensen-Video at 0:09-0:19, text coloring omitted). However, this quote from Dr. Hensen is from the very beginning of the video and nothing in the preceding nine seconds of the video shows how the wireless earpieces were paired with the smartphone. If the wireless earpieces are paired with the smartphone, Dr. Hensen has paired them prior to the start of the video. Therefore, there is no evidence in the video to show that the software application provides for connecting the wireless earpieces to the computing device as required by Claim 11.

149. Furthermore, Dr. Hensen does not say that the wireless earpieces are paired with or connected to the smartphone application. He says, “I’ve paired them with each other and also paired them with the source device, in this case, a

smartphone” (Ex. 1004 at 0:14 to 0:19, emphasis added). That is, Dr. Hensen states that the wireless earpieces are paired with the smartphone, not the smartphone application. Once again, there is no evidence in the video to show that the software application provides for connecting the wireless earpieces to the computing device as required by Claim 11.

150. In its argument relating to Claim 11, the Petition does not show that the software application in Hensen-Video provides for connecting the wireless earpieces with the computing device as required by Claim 11. So, the Petition has not shown by a preponderance of evidence that the combination of Hensen-Patent and Hensen-Video anticipates Claim 11 of the Challenged Claims.

x. Claim 12: “The system of claim 11 wherein the computing device is a mobile device.”

151. Claim 12 is a dependent claim and depends on Claim 1 and Claim 11 of the Challenged Claims. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1 and Claim 11, as discussed in the relevant sections above, Petitioner has not shown that the alleged prior art anticipates Claim 12.

xi. Claim 13: “A method for controlling a set of wireless ear pieces, the method comprising: [...]”

152. Claim 13 of the Challenged Claims is a method claim directed to the steps of a process. The Petition claims that “Hensen-Patent discloses a method for controlling a set of wireless earpieces” (Petition at p. 72). However, Hensen-Patent

has only one independent claim and that claim is directed to an apparatus: “A stereo audio headphone apparatus comprising: a master headphone unit comprising: [...]” (Ex. 1003, 13:55-56). Hensen-Patent discloses a second apparatus, a “remote control unit,” in its dependent claim 14: “The stereo audio headphone apparatus according to claim 1. further comprising a remote control unit operatively coupled to at least one of said master and slave headphone units” (Ex. 1003, 16:8-11, emphasis in original), but this is also not a method. The specification of Hensen-Patent does disclose a single method, but this “method aspect is directed to a method for compensating for hearing loss of a user,” (Ex. 1003, 3:49-50) which is outside the scope of the Challenged Claims. Contrary to the Petition’s claim, Hensen-Patent does not disclose “a method for controlling a set of wireless ear pieces” as required by Claim 13 of the Challenged Claims.

153. The Petition does not argue that Hensen-Video discloses a “a method for controlling a set of wireless ear pieces” as required by Claim 13 of the Challenged Claims. Indeed, Hensen-Video never shows that user input into the software application is communicated to the wireless earpieces (Ex. 1004). The Petition acknowledges this deficiency by claiming that a combination of Hensen-Patent and Hensen-Video is necessary to satisfy Claim 13 (Petition at p. 75). However, since Hensen-Patent also does not disclose a method for controlling a set of wireless earpieces, this combination is not sufficient to satisfy Claim 13 of the Challenged

Claims. Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 13 of the Challenged Claims.

xii. Claim 14: “A method for communicating data from a set of wireless ear pieces, the method comprising: [...]”

154. The Petition makes an error in its arguments regarding the preamble of Claim 14 and Element 14A. Claim 14 is directed to communicating data from a set of wireless earpieces, but the Petition repeats its arguments from Claim 13 in relation to the preamble of Claim 14 and Element 14A: “Hensen-Patent discloses a method for controlling a set of wireless earpieces,” and “Hensen-Patent in combination with Hensen-Video discloses providing a software application for controlling the set of wireless earpieces” respectively (Petition at p. 77, emphasis added). Therefore, the Petition does not argue that the alleged prior art anticipates communicating data from a set of wireless earpieces as required by Claim 14. The Petition cites the Declaration of Dr. Anthony in these arguments, which makes the same errors almost verbatim (Ex. 1002, ¶¶120-121). The Petition’s arguments in relation to Claim 14 and Element 14A are not directed to the subject of Claim 14, and so Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 14 of the Challenged Claims.

155. However, even if these errors in the Petition were corrected, Petition still would not show that the alleged prior art anticipates Claim 14 of the Challenged

Claims.

156. Claim 14 of the Challenged Claims is a method claim directed to the steps of a process. The Petition claims that “Hensen-Patent in combination with Hensen-Video discloses communicating data received from one or more of the wireless earpieces to the computing device.” (Petition at p. 78). However, as discussed above regarding Claim 13, Hensen-Patent is directed to two apparatuses and Hensen-Patent discloses only a single method which is outside the scope of the Challenged Claims. Therefore, Hensen-Patent does not disclose a method that satisfies Claim 14.

157. As discussed above in the analysis of the alleged prior art and in relation to Claim 3, the smartphone application in Hensen-Video is not fully functional and Hensen-Video never shows that the smartphone application is capable of receiving data from the wireless earpieces. As such, Hensen-Video also does not show communicating data from a set of wireless earpieces as required by Claim 14.

158. Further, the Petition does not argue that Hensen-Video shows communicating data from a set of wireless earpieces as required by Claim 14. The Petition relies solely on Hensen-Patent to establish the alleged prior art relating to communicating data from a set of wireless earpieces and refers to Hensen-Video only in the context of using a smartphone application to communicate the data:

“Hensen-Patent in combination with Hensen-Video discloses that the remote control device can include a software application running on a smartphone computing device” (Petition at p. 79).

159. The combination of Hensen-Patent and Hensen-Video is not sufficient to satisfy Claim 14 of the Challenged Claims because none of the alleged prior art shows “[a] method for communicating data from a set of wireless ear pieces” as required by Claim 14. Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 14 of the Challenged Claims.

xiii. Claim 15: “The method of claim 14 wherein the data comprises physiological data.”

160. Claim 15 is a dependent claim and depends on Claim 14 of the Challenged Claims. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 14, as discussed in the section immediately above, Petitioner has not shown that the alleged prior art anticipates Claim 15. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 14 (which it does not, as discussed above), to the extent that the Petition’s argument relies on Hensen-Video, the Petition does not show that the alleged prior art anticipates Claim 15.

161. The Petition’s argument in relation to Claim 15 refers to the same portion of Hensen-Video as the Petition’s argument for Claim 2 and makes essentially the same argument as in relation to Claim 2. As discussed above in

relation to Claim 2, the evidence in Hensen-Video does not conclusively support the Petition's assertion. So, to the extent that the Petition's argument relies on Hensen-Video, the Petition has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 15 of the Challenged claims.

xiv. Claim 16: "The method of claim 15 wherein the physiological data is heart rate data."

162. Claim 16 is a dependent claim and depends on Claim 14 and Claim 15 of the Challenged Claims. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 14 and Claim 15, as discussed in the related sections above, Petitioner has not shown that the alleged prior art anticipates Claim 16. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 14 and Claim 15 (which it does not, as discussed above), to the extent that the Petition's argument relies on Hensen-Video, the Petition does not show that the alleged prior art anticipates Claim 15.

163. The Petition's argument in relation to Claim 16 relies in part on Hensen-Video. As described above in the analysis of the alleged prior art, Hensen-Video does not show a functioning smartphone application. The Petition refers to Hensen-Video to support its argument in relation to Claim 16: "I'm going to go ahead and show all, and *you can see not only my heart rate but my oxygen saturation at 95%*. And that's kind of consistently where I run as far as my heart

rate is concerned. Oxygen usually is normal between 95 and 100 percent.” (Petition at p. 85, citing Hensen-Video at 0:48-1:09, emphasis in original). The Petition incorrectly asserts that this statement means that the wireless earpieces in the video can communicate heart rate data to the smartphone application. However, Dr. Hensen does not say that the heart rate value shown in Hensen-Video has been received by the smartphone application from the wireless earpieces (*See Exhibit A*). There is no evidence in Hensen-Video to conclusively support the Petition’s assertion (Ex. 1004). So, to the extent that the Petition’s argument relies on Hensen-Video, the Petition has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 16 of the Challenged claims.

C. Ground 2

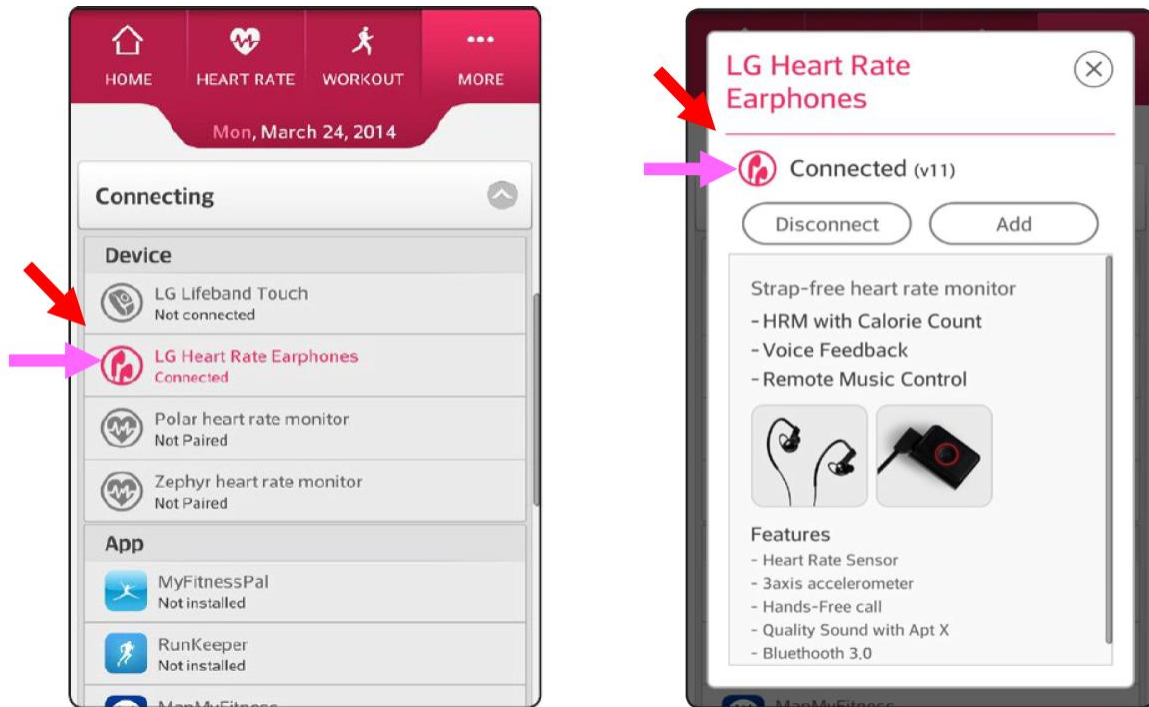
i. Claim 5: “The system of claim 1 wherein the representation visual representation includes lighting of the at least one wireless ear piece.”

164. Claim 5 is a dependent claim that depends on Claim 1. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1, as discussed above, Petitioner has not shown that the alleged prior art anticipates Claim 5. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 1 (which it does not, as discussed above in the section regarding Claim 1), the alleged prior art does not anticipate Claim 5.

165. Claim 5 refers to “lighting of the at least one wireless ear piece.” The antecedent for the phrase “at least one wireless ear piece” is found in Element 1A:

“at least one wireless ear piece comprising an ear piece housing and a wireless transceiver disposed within the ear piece housing” (Ex. 1001, 7:19-21). That is, Claim 5 requires the physical wireless earpiece to be lighted, *i.e.*, illuminated, as with a light-emitting diode (“LED”). The wireless earpieces of the ’385 Patent can be illuminated with LEDs, *e.g.*: “portions of the left ear piece **102** are illuminated using one or more LEDs” (Ex. 1001, 4:46-47, emphasis in original).

166. The Petition cites LG-Manual as alleged prior art for Claim 5: “LG-Manual similarly discloses a visual representation of **left and right earpieces** (e.g., an icon showing a silhouette of the earpieces) and further discloses that the visual representation includes **lighting** the earpieces (i.e., coloring them pink) when they are connected” (Petition at p. 87, text coloring in original). Petitioner’s diagram in support of this argument is reproduced below.

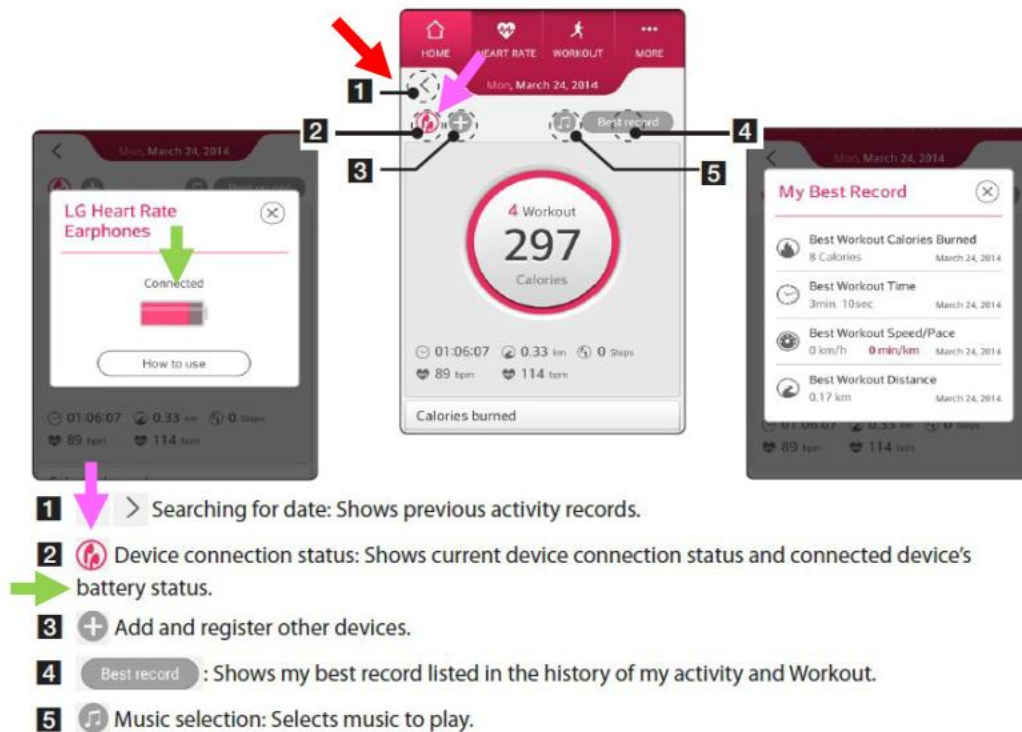


Petition at p. 87 citing LG-Manual at p. 36 with Petitioner's annotations

167. The Petition makes two errors in its argument. First, the Petition conflates the concepts of “highlighting” as in a change in color of an element in a visual user interface with “lighting” as in illumination. A POSITA would clearly understand the difference between these two concepts. Second, the Petition refers to the “lighting” of the visual representation the user interface to satisfy Claim 5. However, as discussed above, Claim 5 requires the illumination of the physical wireless earpiece. Merely changing the color of an element in a visual user interface is not “lighting,” nor does it correspond to the illumination of a physical wireless earpiece.

168. The Petition repeats both errors in its argument that “LG-Manual

further discloses that the **lighting** of the earpieces is associated with **battery life**” (Petition at p. 88, text coloring in original). Petitioner’s diagram in support of this argument is reproduced below.



Petition at p. 88 citing LG-Manual at p. 24 with Petitioner’s annotations

169. Once again, merely changing the color of an element in a visual user interface is not “lighting,” nor does it correspond to the illumination of a physical wireless earpiece.

170. The Petition relies on these erroneous arguments as the basis for its justification to combine LG-Manual, Hensen-Patent, and Hensen-Video. However, since LG-Manual does not show “lighting of the at least one wireless ear piece” as

required by Claim 5, there is no motivation to combine LG-Manual with Hensen-Patent and Hensen-Video. Petitioner understands that Hensen-Patent and Hensen-Video alone or in combination do not satisfy Claim 5 and selected LG-Manual in an attempt to compensate for their deficiencies. However, as described above, LG-Manual does not show the “lighting of the at least one wireless ear piece” as required by Claim 5 and so Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 5 of the Challenged Claims.

ii. Claim 6: “The system of claim 5 wherein the lighting is associated with the function or property of the at least one wireless ear piece.”

171. Claim 6 is a dependent claim that depends on Claim 1 and Claim 5. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1 or Claim 5, as discussed above in the related sections, Petitioner has not shown that the alleged prior art anticipates Claim 6. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 1 and Claim 5 (which it does not, as discussed above), the alleged prior art does not anticipate Claim 6.

172. Claim 6 requires that “the lighting is associated with the function or property of the at least one wireless ear piece” (Ex. 1001, 48-50). The antecedent for “the lighting” is in Claim 5: “lighting of the at least one wireless ear piece.” As discussed above in relation to Claim 5, this refers to the illumination of a physical wireless earpiece. The antecedent for “the function or property of the at least one

wireless ear piece” is in Element 1E: “wherein the user interface is configured to display a visual representation of the at least one wireless ear piece on at least one of the one or more screen displays, the visual representation indicative of a function or property of the at least one wireless ear piece communicated from the at least one wireless earpiece to the computing device” (Ex. 1001, 30-36). Therefore, Claim 6 requires that the illumination of a physical wireless earpiece is associated with a function or property of the wireless earpiece communicated from the wireless earpiece to the computing device, and that the visual representation of the wireless earpiece in the user interface is indicative of that function or property of the wireless earpiece.

173. The Petition’s entire argument in relation to Claim 6 is: “As explained above for claim 5, the combination of Hensen-Patent, Hensen-Video, and LG-Manual discloses that the lighting is associated with the function or property (e.g., battery life) of the at least one wireless earpiece” (Petition at p. 91). However, as discussed above, neither Hensen-Patent, Hensen-Video, LG-Manual nor the combination of the three shows “lighting of the at least one wireless ear piece” as required by Claim 5. Therefore, the combination of the alleged prior art cannot satisfy the requirement in Claim 6 that the illumination of the wireless earpiece is associated with a function or property of the wireless earpiece as required by Claim 5. So, Petitioner has not shown by a preponderance of evidence that the alleged prior

art anticipates Claim 6 of the Challenged Claims.

iii. Claim 7: “The system of claim 6 wherein the property is remaining battery life.”

174. Claim 7 is a dependent claim that depends on Claim 1, Claim 5, and Claim 6. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1, Claim 5, or Claim 6, as discussed above in the related sections, Petitioner has not shown that the alleged prior art anticipates Claim 7. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 1, Claim 5, and Claim 6 (which it does not, as discussed above), the alleged prior art does not anticipate Claim 7.

175. As discussed above in relation to Claim 3, Petitioner erroneously argues that a separate display of battery life adjacent to the visual representations of the earpieces satisfies Element 1E of the Challenged Claims (Petition at pp. 51-52), but Petitioner makes this error because Petitioner has improperly separated Element 1E in to two phrases and has lost the antecedent for “visual representation,” which is the “visual representation of the at least one wireless ear piece.”

176. Petitioner continues this error in reference to Claim 7 by pointing to the prosecution of the '385 Patent and conflating the visual representation of a wireless earpiece including lighting of the one wireless earpiece with the numerical representation of remaining battery life in the user interface:

In fact, during prosecution of the '385 patent, the applicant expressly identified battery life as a property of an earpiece that satisfies Element [1F]. See Ex-1011-FH, [PDF229] (Appeal Brief at 8) (citing Specification 8:16-17 as supporting limitation [1F]; this passage describes Figure 6 and states: “Underneath the ‘L’ is textural [sic: textual] information in the form of a **numerical representation 124 of remaining battery life for the left ear piece**”); see also Ex-1001-USP385, Claim 7 (“The system of claim 6 wherein the property is remaining battery life”) (Petition at p. 53, emphasis in original, text coloring omitted; note that Petitioner’s limitation 1F is the second half of Element 1E of the Challenged Claims)

177. However, in citing the file history of the '385 Patent, the Petition fails to refer to the remainder of the argument in favor of allowing Claim 7 (then claim 8) which centers on whether the prior art shows “displaying a visual representation of the at least one wireless earpiece on a screen of the computing device, wherein the visual representation includes lighting associated with the function or property of the at least one wireless earpiece and wherein the property is the remaining battery life” (Ex. 1011, Appeal Brief at p. 50). The argument that was ultimately accepted in allowing Claim 7 (then claim 8) did not refer to the “numerical representation 124 of remaining battery life” as suggested by the Petition, as this is separate from the visual representation of the wireless earpiece.

178. Claim 7 refers to “the property.” The antecedents for “the property” are found in Claim 6 and Claim 1. As discussed above, Claim 6 ultimately requires that the illumination of a physical wireless earpiece is associated with a function or property of the wireless earpiece communicated from the wireless earpiece to the

computing device, and that the visual representation of the wireless earpiece in the user interface is indicative of that function or property of the wireless earpiece. Claim 7 refines Claim 6 to specify that “the property” is “remaining battery life,” so Claim 7 requires that the illumination of a physical wireless earpiece is associated with the remaining battery life of the wireless earpiece communicated from the wireless earpiece to the computing device, and that the visual representation of the wireless earpiece in the user interface depicts the illumination of the wireless earpiece to indicate the remaining battery life.

179. The entirety of the Petition’s argument in relation to Claim 7 is “The combination of Hensen-Patent, Hensen-Video, and LG-Manual discloses that the property is remaining battery life” (Petition at p. 91). The Petition refers to its argument in relation to Claim 6 to support this.

180. However, as discussed above in relation to Claim 6, neither Hensen-Patent, Hensen-Video, LG-Manual nor the combination of the three shows “lighting of the at least one wireless ear piece.” Therefore, the Petition has not shown that the illumination of the wireless earpiece is associated with the remaining battery life of the wireless earpiece.

181. In addition, Claim 7’s dependency on Claim 1 requires that the visual representation of the wireless earpiece in the user interface depicts the illumination

of the wireless earpiece to indicate the remaining battery life. However, as discussed above in relation to Element 1E, Petitioner has not shown that the alleged prior art discloses a computing device and software application with a user interface that displays a visual representation of a wireless earpiece in which the visual representation of the wireless earpiece indicates a function or property of the wireless earpiece that has been communicated from the wireless earpiece to the computing device.

182. As such, Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 7 of the Challenged Claims.

D. Ground 3

- i. Claim 8: “The system of claim 1 wherein the user interface is further configured to display available gestures associated with controlling the at least one wireless ear piece.”**

183. Claim 8 is a dependent claim that depends on Claim 1. To the extent that Petitioner has not shown that the alleged prior art anticipates Claim 1, as discussed above in relation to Claim 1, Petitioner has not shown that the alleged prior art anticipates Claim 8. Even if we assume for the sake of argument that the alleged prior art anticipates Claim 1 (which it does not, as discussed above), there would be no motivation to combine Lee with Hensen-Patent and Hensen-Video.

184. Claim 8 requires two things: that the wireless earpieces can be controlled by gestures, and that the user interface of the software application must

be able to display the available gestures for controlling the wireless earpieces. Hensen-Video never shows any interactions that control the wireless earpieces in any way (Ex. 1004). Hensen-Patent says that its “input devices 37 may be push buttons and may be coupled to the master circuitry 32. [...] Other types of input devices may be used and may correspond to different command and/or function, as will be appreciated by those skilled in the art” (Ex. 1003, 5:38-43). A POSITA could only consider other input devices in the context of Hensen-Patent if those input devices were suitable for use within wireless earpieces. However, Hensen-Patent does not disclose wireless earpieces that can be controlled by gestures.

185. Petitioner understands the deficiencies of Hensen-Video and Hensen-Patent and attempts to combine them with Lee to address their deficiencies. However, a POSITA would not have had a motivation to combine Hensen-Video and Hensen-Patent with Lee because the technology described in Lee is not appropriate for use in wireless earpieces.

186. The Petition relies on the file history of the '385 Patent to support its argument that a POSITA would combine Lee with Hensen-Video and Hensen-Patent:

During prosecution of the '385 patent, the Examiner cited Lee as disclosing the limitations of then-numbered claim 9 (now claim 8). Ex-1011-FH [PDF199] (Office Action at 8) (“Lee discloses a display for an electronic unit to display available motions or gestures for the user in controlling the electronic device. ... [I]t would have been obvious to

[a POSITA] to utilize the guide disclosed by Lee ... so that the user [is] informed and comfortable regarding the motions available for controlling the electronic device”). At no point during prosecution (including in the applicant’s Appeal Brief) did the applicant contest the Examiner’s conclusions that Lee discloses these limitations or that a POSITA would have been motivated to combine Lee with the primary references. *See, e.g.,* Ex-1011-FH [PDF272] (Appeal Brief at 51) (applicant’s only argument for the allowability of then-numbered claim 9, now claim 8, was based on its dependency from claim 1). (Petition at pp. 95-96.

187. However, the Petition fails to note that the examiner was proposing the combination of Lee with other compatible prior art that used similar technologies: “Since both Boesen and Lee disclose an electronic device with *motion capture mechanism*, it would have been obvious to one of ordinary skilled in the art before the effective filling date of the claimed invention to utilize the guide as disclosed by Lee in the teachings by Boesen so that the user are informed and comfortable regarding the motions available for controlling the electronic device” (Ex. 1011, Office Action dated March 7, 2018 at p. 6, emphasis added). In this context, it is understandable that Patent Owner did not object to the combination of similar prior art.

188. The Petition makes a leap of faith immediately following and based solely on its reference to the file history of the ’385 Patent: “Thus, the combination of Hensen-Patent, Hensen-Video, and Lee discloses a user interface that displays available gestures (e.g., Lee’s motion guide) associated with controlling a wireless

earpiece (e.g., setting the volume of Hensen-Patent’s wireless earpieces adapted to include a gesture-based input device as taught by Lee)” (Petition at p. 96, emphasis added).

189. However, as described in the overview of Lee above, the gesture-based input device of Lee is a video camera: “the motion input device **120** may be realized as a camera unit consisting of a lens and an image sensor” (Ex. 1006, ¶0045, emphasis in original). Petitioner proposes that the wireless earpieces of Hensen-Patent should be adapted to include a video camera to capture the motion of the user as taught by Lee, a combination that a POSITA would certainly find absurd! Even today, but more so at the time of the ’385 Patent, video cameras require a substantial amount of physical space, electrical power, and computing resources, all of which would necessarily be scarce in a wireless earpiece that would have to be many times smaller and lighter than even the smallest mobile phone.

190. Creating a wireless earpiece with a functional pulse oximetry sensor was a difficult engineering problem at the time of the ’385 Patent, as shown by the failure of FreeWavz to deliver a product with a fully functional pulse oximetry sensor (See Ex. 2024). At that time, a POSITA could only have been even more pessimistic about the prospect of developing a wireless earpiece with a video camera to capture the motion of the user as taught by Lee.

191. Accordingly, the Petition has not shown that it would be obvious to combine Lee with Hensen-Patent and Hensen-Video or that a POSITA could have expected to be successful in doing so.

192. The remainder of the Petition's argument in relation to Claim 8 rests on the proposition of combining Lee with Hensen-Patent and Hensen-Video. Since there is no motivation to combine this prior art, Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates Claim 8 of the Challenged Claims.

E. Grounds 4-6

193. The Petition argues that "Grounds 4-6 demonstrate that the challenged claims would have been obvious over the same combinations of references as Grounds 1-3 except that Hensen-Kickstarter replaces Hensen-Video" (Petition at p. 99). The Petition argues further that "Hensen-Kickstarter has nearly identical teachings to Hensen-Video for each of the limitations for which Hensen-Video was cited in Grounds 1-3. Thus, the challenged claims would have been obvious over Hensen-Kickstarter for the same reasons that they would have been obvious over Hensen-Video" (Petition at p. 100).

194. However, as acknowledged by the Petition (at p. 99), "Hensen-Kickstarter is a printed publication." Hensen-Kickstarter does not show and does not even claim to show a smartphone application. Instead, Hensen-Kickstarter says,

“Here are some sample page screen shots to demonstrate their appearance” (Ex. 1007). As discussed above, the “Metrics” screen shown in Hensen-Kickstarter is merely a mockup of what a smartphone application could look like. This screen cannot be an actual screen shot of a functional smartphone application because the data it shows is inconsistent in ways that cannot be reconciled if the data is real. If the “Metrics” screen is merely a mockup, there is every reason to assume that all the remaining screens are also mockups and that they were not captured from a functional smartphone application. Indeed, FreeWavz never delivered a functional smartphone application (See Ex. 2024).

195. As such, the Petition’s founding assertion for Grounds 4-6, that “Hensen-Kickstarter has nearly identical teachings to Hensen-Video” (Petition at p. 99) completely unsupported by the evidence in Hensen-Kickstarter. Without this foundation, none of Petitioner’s arguments for Grounds 4-6 are supported and Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates the Challenged Claims in Grounds 4-6.

196. However, I will also address the Petitions arguments in relation to Grounds 4-6 individually.

i. Elements 1B, 1C, and 13B, and Claims 11 and 12

197. The Petition says that “Hensen-Kickstarter also discloses the same type of remote control device (e.g., an Android smartphone) and software application

(e.g., an Android app) that causes a display to show various display screens” (Petition at p. 101), and the Petition quotes Hensen-Kickstarter: “The Android app is just about finished” (Petition at p. 101, citing Hensen-Kickstarter. However, the phrase, “just about finished” does not mean that the software application is complete and fully functional. In fact, it means the opposite, that the software application is not complete and fully functional. Hensen-Kickstarter does not say which aspects of the smartphone application are functional and which are not, and so it would be incorrect to assume from the information in Hensen-Kickstarter that any aspect of the software application is functional. Therefore, the Petition’s assertion that Hensen-Kickstarter discloses the same type of remote control device and software application as Hensen-Video purely conjecture and unsupported by the evidence in Hensen-Kickstarter.

198. In addition, the Petition uses the “Metrics” screen from Hensen-Kickstarter to support its argument. As discussed above in the analysis of the alleged prior art, the “Metrics” screen shows data that cannot be recorded from real events because the “Duration” and “Distance” values imply an average speed of 0.8 miles per hour while the “Average Speed” displayed is 3 meters per second or approximately 6.7 miles per hour. Thus, the “Metrics” screen was not produced from a functional smartphone application.

199. Even assuming that the Petition’s assertions about Hensen-Video are

true (which they are not, as discussed above in relation to Grounds 1-3), the Petition has not shown that Hensen-Kickstarter discloses a smartphone application equivalent to the smartphone application shown in Hensen-Video. So, Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates Elements 1B, 1C, and 13B, and Claims 11 and 12 of the Challenged Claims.

ii. Elements 1D, 1E, 14E, and Claims 5 and 6

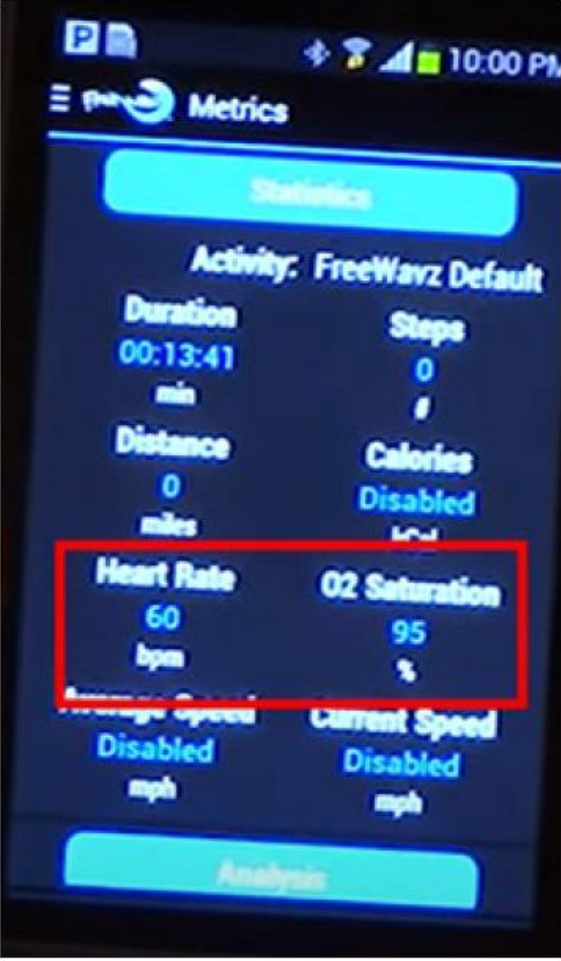
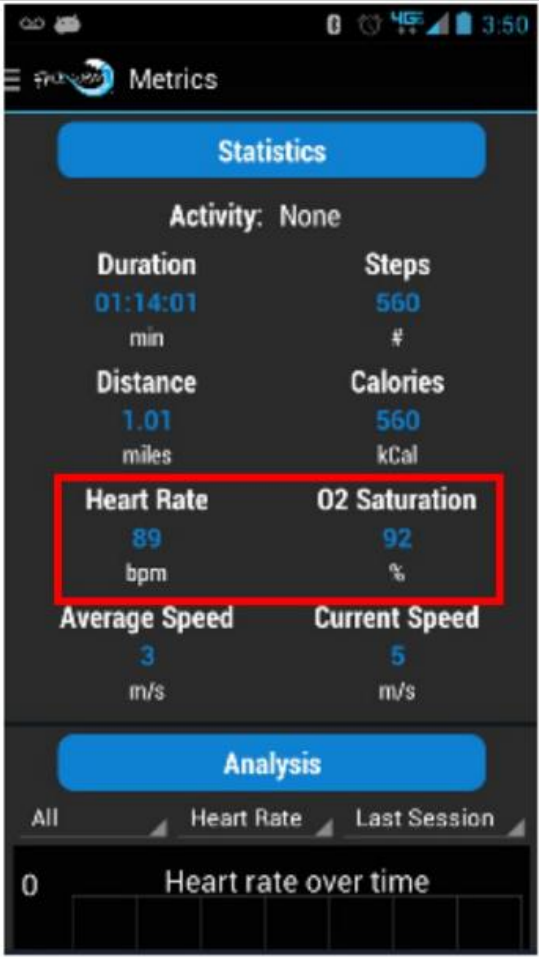
200. The Petition argues that “Hensen-Kickstarter’s user interface that [sic] is virtually identical to the user interface depicted in Hensen-Video” (Petition at pp. 102-103). However, as discussed above, the Android application that Hensen-Kickstarter mentions is not complete and fully functional. Hensen-Kickstarter does not say which aspects of the smartphone application are functional and which are not, and so it would be incorrect to assume from the information in Hensen-Kickstarter that any aspect of the software application is functional. Therefore, the Petition’s assumption that the “Home” screen shown in Hensen-Kickstarter is functional is purely conjecture and is not supported by the evidence in Hensen-Kickstarter.

201. Even assuming that the Petition’s assertions about Hensen-Video are true (which they are not, as discussed above in relation to Grounds 1-3), the Petition has not shown that Hensen-Kickstarter discloses a smartphone application equivalent to the smartphone application shown in Hensen-Video. So, Petitioner has

not shown by a preponderance of evidence that the alleged prior art anticipates Elements 1D, 1E, 14E, and Claims 5 and 6 of the Challenged Claims.

iii. Claims 3, 4, and 15 and Element 14E

202. The Petition argues that “Hensen-Kickstarter’s software application tracks and displays the same fitness tracking data (e.g., heart rate and oxygen saturation) received from physiological sensors as Hensen-Video” (Petition at p. 104). The Petition’s comparison of screen shots from Hensen-Video and Hensen-Kickstarter in support of this argument is reproduced below.

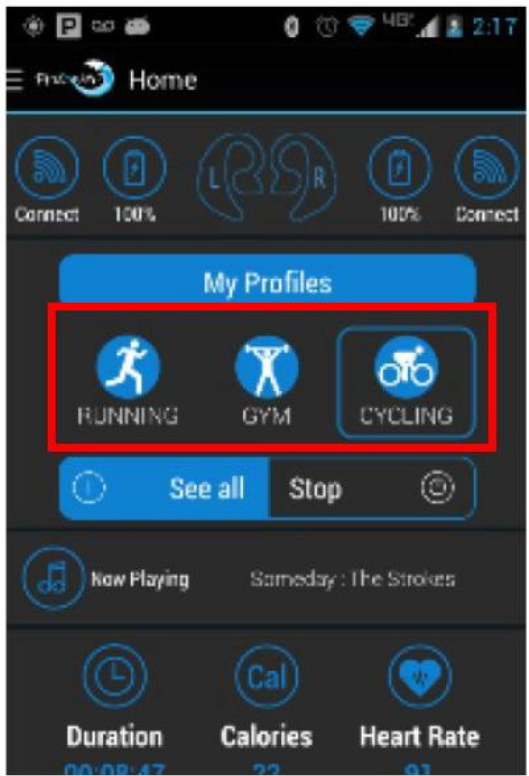
Hensen-Video “Metrics” screen (Hensen-Video, 0:48-1:09)	Hensen-Kickstarter “Metrics” screen (Hensen-Kickstarter, 5)
 Statistics Activity: FreeWayz Default Duration 00:13:41 min Steps 0 # Distance 0 miles Calories Disabled kCal Heart Rate 60 bpm O2 Saturation 95 % Average Speed Disabled mph Current Speed Disabled mph Analysis	 Statistics Activity: None Duration 01:14:01 min Steps 560 # Distance 1.01 miles Calories 560 kCal Heart Rate 89 bpm O2 Saturation 92 % Average Speed 3 m/s Current Speed 5 m/s Analysis All Heart Rate Last Session 0 Heart rate over time

Petition at p. 104

203. Here, the Petition again cites the “Metrics” screen from Hensen-Kickstarter. As discussed above in the analysis of the alleged prior art, the “Metrics” screen from Hensen-Kickstarter cannot be a screen shot from a functional smartphone application. It is merely one of the “sample page screen shots to

demonstrate their appearance” according to Hensen-Kickstarter. The Petition’s argument that this screen shot shows that “Hensen-Kickstarter’s software application tracks and displays the same fitness tracking data (e.g., heart rate and oxygen saturation) received from physiological sensors” (Petition at p. 104) is purely conjecture and completely unsupported by the evidence in Hensen-Kickstarter.

204. The Petition argues that “Hensen-Kickstarter’s user interface provides the same capabilities as Hensen-Video for selecting among activities (e.g., running and cycling) to be tracked” (Petition at p. 105). The Petition’s comparison of screen shots from Hensen-Video and Hensen-Kickstarter in support of this argument is reproduced below.

Hensen-Video “Home” screen (Hensen-Video, 0:38)	Hensen-Kickstarter “Home” screen (Hensen-Kickstarter, 4)
	

Petition at p. 106

205. However, as discussed above in relation to Claim 3 and Claim 4, Hensen-Video never shows that the annotated portion of the screen from Hensen-Video can be used for selecting among activities. Nor does Hensen-Kickstarter describe in any way that the annotated portion of the screen shot from Hensen-Kickstarter can be used for selecting among activities (Ex. 1007). The Petition’s assertion that these aspects of Hensen-Video and Hensen-Kickstarter can be used for

selecting among activities is purely conjecture and is completely unsupported by the evidence in the two sources.

206. Even assuming that the Petition's assertions about Hensen-Video are true (which they are not, as discussed above), the Petition has not shown that Hensen-Kickstarter discloses a smartphone application equivalent to the smartphone application shown in Hensen-Video. So, Petitioner has not shown by a preponderance of evidence that the alleged prior art anticipates Claims 3, 4, and 15 and Element 14E of the Challenged Claims.

iv. Motivation to Combine

207. As described above, the software application in Hensen-Kickstarter is not complete and fully functional: "The Android app is just about finished" (Ex. 1007). Hensen-Kickstarter does not say which aspects of the smartphone application are functional and which are not, and so it would be incorrect to assume from the information in Hensen-Kickstarter that any aspect of the software application is functional. A POSITA could hardly have a reasonable expectation of success in combining an unfinished smartphone application in which any or all of the functionality is incomplete with any other technology, let alone Hensen-Patent. Indeed, FreeWavz never delivered a functioning software application (See Ex. 2024), and so such a combination could not have been functional. As such, there would be no motivation for a POSITA to combine Hensen-Kickstarter with Hensen-

Patent.

XI. Conclusion

208. This declaration represents the opinions that I have formed up to date based on the material currently available to me. I reserve the right to revise, supplement, and/or amend my opinions stated in this declaration based on new information that becomes available to me and on my continuing analysis of the materials available to me.

209. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine, imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: February 5, 2024



Kai Johnson

Exhibit A

Transcript of Hensen-Video, Ex. 1004.

Time Narration of Dr. Hensen

0:00 (Introductory music)

0:05 Hi everybody, Eric with FreeWavz. I want to do a quick demonstration of our current FreeWavz unit.

0:10 I'm currently wearing both the right and left units. I've already turned them on, I've paired them with each other, and I've also paired them with the source device, in this case, a smartphone.

0:20 What I'm going to do is I'm going to go ahead and show a few functions that are currently running.

0:24 Right now, I'm actually listening to some music, and I've also engaged the pulse oximetry.

0:30 So, what I'm going to do is that I'm going to show you this Home screen.

0:33 I'm going to hold it real still. Now at the top you're going to see each unit and the battery life.

0:38 Then you're also going to see in the mid portion the music that's currently being streamed from Pandora.

0:43 You can also see down below here is my heart rate at 60. OK?

0:49 What next I'm going to go ahead and show is I'm going to go ahead and show all.

0:55 And you can see not only my heart rate, but my oxygen saturation is 95%.

0:59 And that's kind of consistently where I run as far as where my heart rate is concerned.

1:04 Oxygen usually is normal between 95 and 100%.

1:09 What I'm going to demonstrate next is I'm going to demonstrate the raw data that has been obtained.

Time Narration of Dr. Hensen

- 1:14 If you can see that red line, that is our waveform. That is where our raw data is being obtained from, that is the heart rate and the oxygen saturation. OK?
- 1:24 So, what I'm going to do now is that I'm going to compare the FreeWavz unit to a handheld unit that I picked up from a local pharmacy.
- 1:32 Here we are with a handheld device. As you can see it's at 97% and 66 pulse, up to 68.
- 1:38 What I'm going to do now is I'm going to go ahead and show you the FreeWavz unit which shows right here at a pulse of 67 which is right on where the handheld device was.
- 1:49 I'll also go ahead and show you the oxygen saturation which is at 95%, which on the unit, the handheld unit was at 97%.
- 1:59 And of course, there's our waveform where we're obtaining the information.
- 2:03 As you can tell, the two devices are almost spot on, with one or two beats difference, and maybe one to two percentage points difference on the oxygen saturation, well within normal limits.
- 2:16 I hope this is helpful and I look forward to talking to you soon. Thanks. Bye.
- 2:21 (Closing music)
- 2:30 (End)