

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

PATENT OWNER'S RESPONSE

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Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

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TABLE OF EXHIBITS

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2001	Declaration of Kaylee Hoffner in Support of Motion for <i>Pro Hac Vice</i>
2002	Kaylee Hoffner Bio in Support of Motion for <i>Pro Hac Vice</i>
2003	Declaration of Kaylee Hoffner in Support of Revised Motion for <i>Pro Hac Vice</i>
2004	Kaylee Hoffner Bio in Support of Revised Motion for <i>Pro Hac Vice</i>
2005	Bloomberg Article, Fitness Tracker or Bionic Ear? The Dash Wireless Earbuds Might Be Both: https://www.bloomberg.com/news/articles/2015-01-06/fitness-tracker-or-bionic-ear-the-dash-wireless-ear-buds-might-be-both#xj4y7vzkg , dated January 6, 2015
2006	Bragi Kickstarter with video published, available at: https://www.kickstarter.com/projects/hellobragi/the-dash-wireless-smart-in-ear-headphones/posts/1273891 , dated June 24, 2015
2007	Kickstarter post with video of complete unboxing: https://www.kickstarter.com/projects/hellobragi/the-dash-wireless-smart-in-ear-headphones/posts/1340666 , dated September 10, 2015
2008	Kickstarter with video post touring office: https://www.kickstarter.com/projects/hellobragi/the-dash-wireless-smart-in-ear-headphones/posts/1159785 , dated April 1, 2015
2009	Kickstarter update post with video of technical updates: https://www.kickstarter.com/projects/hellobragi/the-dash-wireless-smart-in-ear-headphones/posts/1254265 , dated June 5, 2015

Exhibit	Description
2010	YouTube Field Test Video: https://www.youtube.com/watch?v=lXuFDv2p1w0 , dated September 22, 2015
2011	Engadget Article, An exclusive look at Bragi's ambitious smart headphones: https://www.engadget.com/2015-01-05-bragi-dash-exclusive.html , dated January 5, 2015
2012	The Verge Article, The First Truly Wireless Earbuds are Here, and They're Awesome: https://www.theverge.com/2015/1/9/7512829/wireless-earbuds-ces-2015-bragi-dash , dated January 9, 2015
2013	Engadget Article, Presenting the Best of CES 2015 winners!: https://www.engadget.com/2015-01-08-best-of-ces-2015-winners.html , dated January 8, 2015
2014	Wired Article, Bragi's in-ear assistant wants to make you healthier and happier: https://www.wired.co.uk/article/bragi-in-ear-assistant , dated October 29, 2015
2015	Engadget Article, Bragi's Dash headphones are finally here, The multi-sport smart earbuds have a lot of hype to live up to: https://www.engadget.com/2016-01-05-bragi-dash-headphones-are-here.html , dated January 5, 2016
2016	The Verge Article, Bragi's truly wireless earbuds are finally here, and they're actually good, The wireless earbuds of my dreams: https://www.theverge.com/2016/1/7/10730300/bragi-dash-real-wireless-earbuds-ces-2016 , dated January 7, 2016
2017	Declaration of Martin Steiner
2018	Declaration of Nikolaj Hviid

Exhibit	Description
2019	DC Rainmaker Article, An update on the Dash, the wireless heart-rate monitoring music headphones: https://www.dcrainmaker.com/2015/01/the-dash-bragi-update.html , dated January 8, 2018
2020	Declaration of Kai Johnson
2021	Kai Johnson CV
2022	Kickstarter update with app preview: https://www.kickstarter.com/projects/hellobragi/the-dash-wireless-smart-in-ear-headphones/posts/1132497 , dated February 11, 2015
2023	iPod User Guide
2024	FreeWavz Update #49: https://www.kickstarter.com/projects/freewavz/freewavz-smart-earphones-with-built-in-fitness-mon/posts/2589484 , dated August 8, 2019

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;
	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.

Claim	Elem.	Claim Text
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.
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

Claim	Elem.	Claim Text
		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
	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.

I. INTRODUCTION

BRAGI GmbH (“Patent Owner” or “Bragi”) respectfully submits this Response to the Board’s decision to institute *inter partes* review (Paper No. 14, the “Decision”) and to the Petition for *Inter Partes* Review (“Petition”) of claims 1-16 of U.S. Patent No. 10,635,385 (“the ’385 Patent”) filed by K/S HIMPP, (“Petitioner” or “HIMPP”) along with HIMPP members and affiliates Demant A/S; GN Store Nord A/S; Sound Design Technologies Ltd.; IntriCon Corporation; and Rion Co., Ltd.

HIMPP’s Petition includes six grounds as shown below.

Ground	References	Claims
1	Hensen-Patent ¹ and Hensen-Video ²	1-4, 9-16
2	Hensen-Patent, Hensen-Video, and LG-Manual ³	5-7

¹“Hensen-Patent” is U.S. Patent No. 9,781,514 (Ex-1003).

² “Hensen-Video” is YouTube.com, *September 2015 – FreeWavz Demo* (Ex-1004).

³ “LG_Manual” is *User Manual: LG Heart Rate Earphones* (“LG-Manual”) (Ex-1005).

3	Hensen-Patent, Hensen-Video, and Lee ⁴	8
4	Hensen-Patent and Hensen-Kickstarter ⁵	1-4, 9-16
5	Hensen-Patent, Hensen-Kickstarter, and LG-Manual	5-7
6	Hensen-Patent, Hensen-Kickstarter, and Lee	8

Petitioner has not carried its burden of proving unpatentability by a preponderance of the evidence (35 U.S.C. § 316(e)). As explained below and in the accompanying declaration of Patent Owner's expert, Kai Johnson, Petitioner has not established that the cited prior art discloses or suggests all of the limitations of the challenged claims.⁶

In particular, as further explained below, the relied upon Hensen-Video is not prior art to the '385 Patent. Further, Petitioner has not established that the prior art

⁴ "Lee" is U.S. Patent Appl. No. 2014/0189600 (Ex-1006).

⁵ "Hensen Kickstarter" is Kickstarter.com, November 22 Progress Report (Ex-1007).

⁶ Patent Owner submits the declaration of Kai Johnson (Ex-2020), an expert in the field of the '385 patent. (Ex-2020, ¶¶ 29-31).

references disclose or suggest all of the limitations in any of the Challenged Claims. Finally, objective evidence confirms the nonobviousness of the Challenged Claims.

Accordingly, the patentability of the Challenged Claims should be confirmed.

II. BACKGROUND

A. The '385 Patent

The '385 Patent discloses a system for providing a user interface for interacting with at least one wireless earpiece. Ex-1001, Abstract. The system includes at least one wireless earpiece comprising an ear piece housing with a wireless transceiver disposed within, and a software application interface for executing on a computing device with a display associated therewith. *Id.* The software application allows a user to interact with the ear pieces, improving functionality and overall user satisfaction. *Id.* at 1:14-16.

1. Existing Technology

Wearable listening devices for personal audio playback have existed and evolved from the late 1970's to the early 2010's time of the invention.⁷ These options all included either wired over-ear headphones or wired in-ear earpieces that

⁷ See Colin Toh, *When Were Headphones invented: The Complete History*, Headphonesty, Aug. 18, 2023, https://www.headphonesty.com/2021/05/when-were-headphones-invented/#1979_The_Walkman.

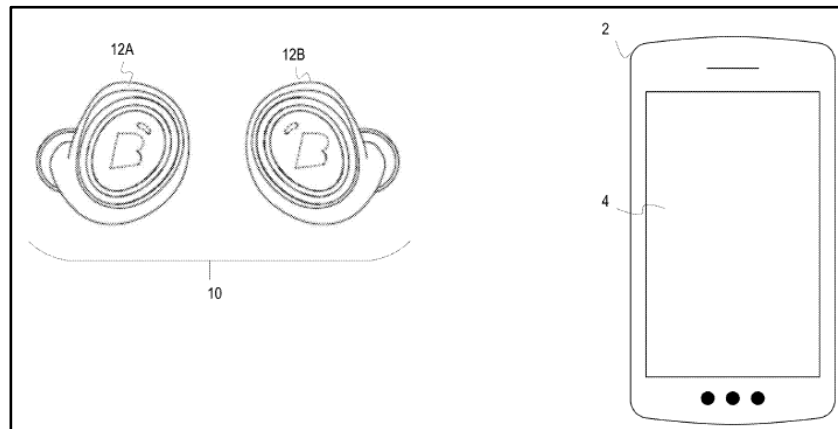
were physically connected to a playback device that was worn or held by the user. Bragi created the first truly wireless in-ear earbuds, The Dash. *See* Ex-2012.

These options all suffered drawbacks with their design and use. For example, wired headphones or earpieces restricted the user's enjoyment of the device during certain activities, such as exercise, because the wires interfered with the user's movements. Additionally, headphones that went over or around the ear were uncomfortable and might become less secure to the user's ear during movement, also interfering with an active user's enjoyment of the device.

The audio device systems also had limited user interface capabilities. Users who wished to track their activities during operation of the listening device had to do so independently from the device, and they were unable to adjust their audio system usage during various activities such as running, swimming, and biking within the device interface. Control of the headphone or earpiece audio in previous devices also required inputs directly to the playback unit that was wired to the headphones or earpieces, which complicated control of the system during activities where such manipulation was inconvenient or impossible. Finally, audio playback systems lacked sensors capable of collecting additional information about users, such as heart rate and other physiological or movement data, which necessitated the use of additional sensor devices.

2. Advantages Provided by the '385 Patent

The '385 Patent addressed these deficiencies by claiming a system that allows users to control and monitor wireless earpiece(s) and user activity remotely from a software application. Ex-1001, 1:28-44. Figure 1 of the '385 Patent, reproduced below, demonstrates some of the novel aspects in a particular embodiment. As shown below, the invention claimed in the '385 Patent allows users to operate unobtrusive wireless earpiece(s) from a computing device such as a mobile device, overcoming the interference from headphone wires. Ex-2020, ¶¶ 32-40.



Ex-1001, Fig. 1.

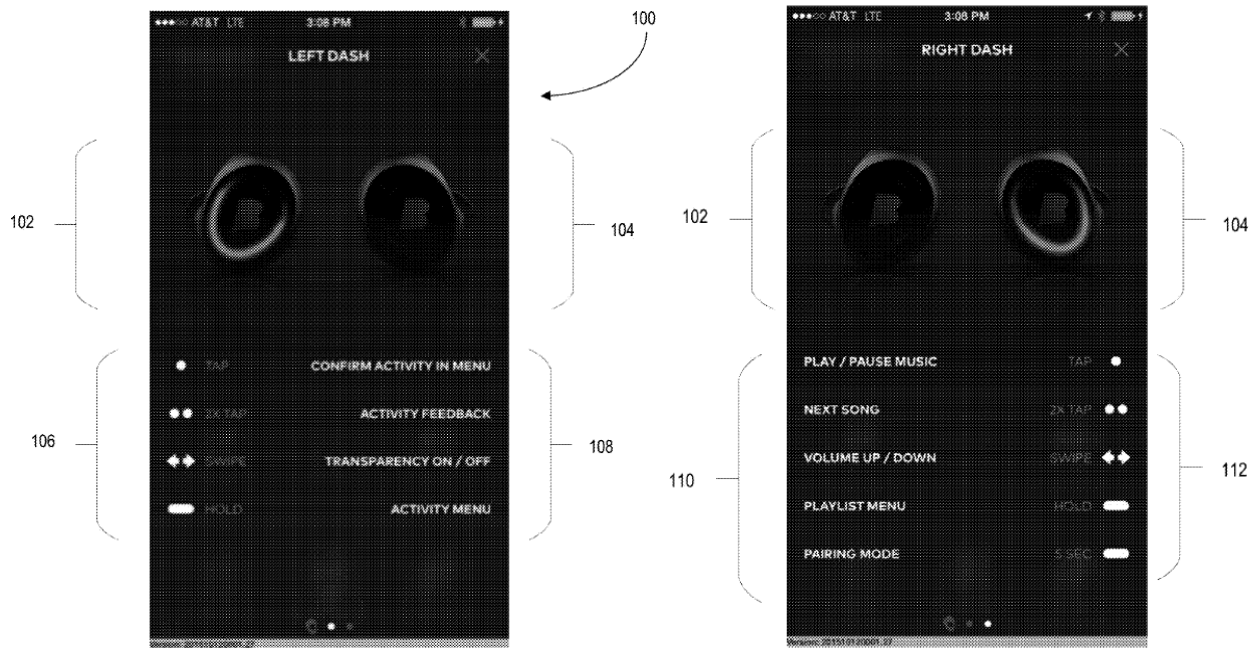
Further, the user interface software application, reproduced below, displays various information about the earpiece(s) status and provides the user with capabilities such as activity monitoring, device settings management, and configurable gesture controls for regulating audio playback through the earpieces directly. *Id.* at 6:3-25.



Ex-1001, Fig. 6.

The device screen display may be touch sensitive, or controlled using manual inputs. *Id.* at 2:61-63. A gesture control interface is operatively connected to or integrated into the intelligent control system which may include emitters and detectors to sense the user's gestures. *Id.* at 3:54-58. Figures 4 and 5, reproduced below, demonstrate how the device can be configured so that the gestures, such as tapping the earpiece, can initiate or control various functions depending on which and how each earpiece is touched. *Id.* at 5:57-60. In addition to gestures and manual inputs, voice control may also be used. *Id.* at 5:63-67. Together, these various

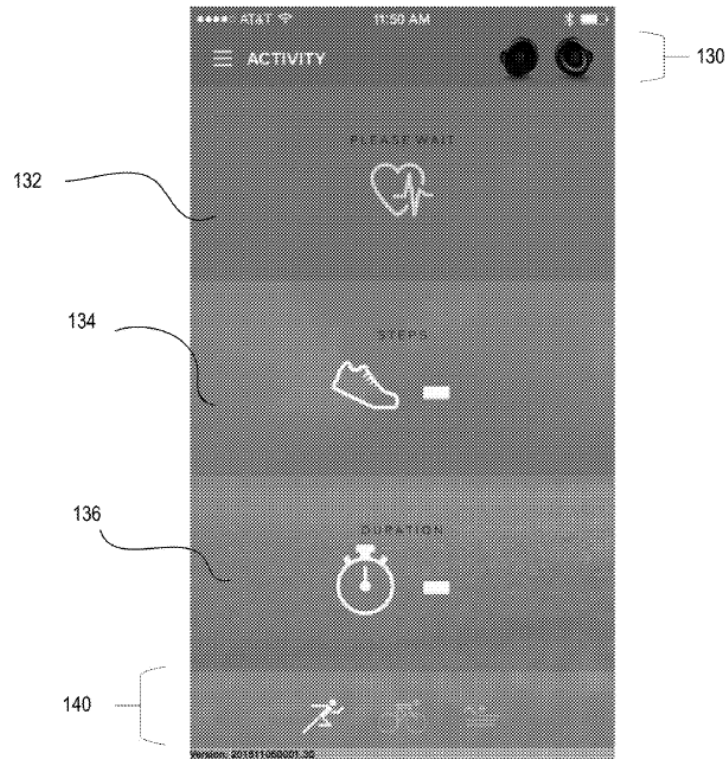
enhanced control options overcome the cumbersome operational limitations of the prior art.



Ex-1001, Fig. 4 (left), Fig. 5 (right).

These activity-oriented features are absent from and improve upon the prior art. Ex-1001, 1:37-40. Figure 7, reproduced below, illustrates an exemplary display for activity tracking. Various information associated with different activities may be displayed, including, for example, heart rate, number of steps, duration. *Id.* at 6:32-36. The user may select between activities, such as running, biking, and swimming, to access and track relevant data. *Id.* at 6:36-41. This data is not merely derived using the device, but also by the user's earpiece(s); for example, the earpiece(s) may

measure the user's heart rate via pulse oximeter or steps via inertial sensor. *Id.* at 6:43-47.



Ex-1001, Fig. 7.

3. The '385 Patent Components

The claimed '385 Patent system comprises a set of wireless ear pieces and a mobile device. Each of these components is described in more detail below.

The ear pieces include a left ear piece and a right ear piece. Ex-1001, 2:57-61. Each of the ear pieces has a housing in the form of a protective shell or casing, for example, an in-the-ear earpiece housing as depicted in Figure 2 below. *Id.* at 3:1-2. Each earpiece may include one or more ultraviolet spectrometers, microphones, and

light-emitting diodes (LEDs) connected to an intelligent control system. *Id.* at 3:2-15.

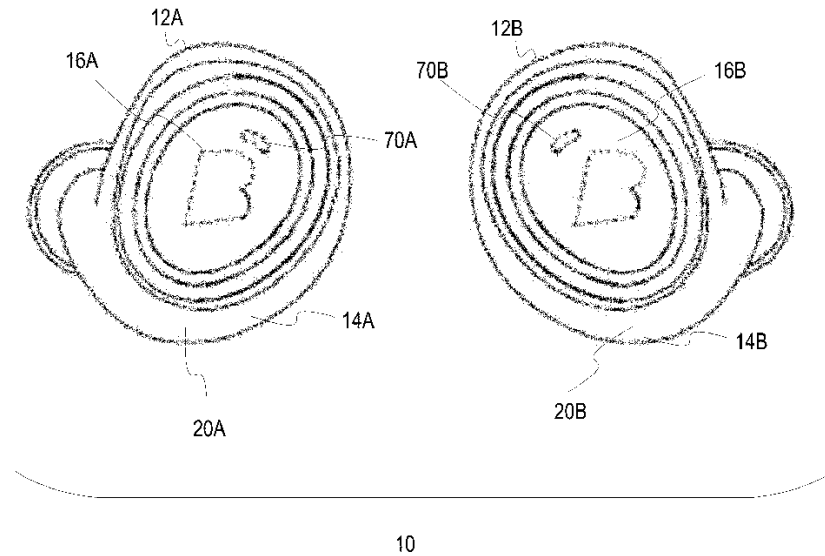


FIG. 2

Ex-1001, Fig. 2.

The intelligent control system may include one or more processors, microcontrollers, application specific integrated circuits, or other type of integrated circuits. *Id.* at 3:15-44. The intelligent control system is operatively connected to a memory which is used for storing audio or programming, and may also be connected to one or more sensors. *Id.* The memory may be used to store audio in one implementation example, or software updates may be loaded into the memory for

execution in another. *Id.* The intelligent control system may also be operatively connected to one or more speakers. *Id.* at 4:2-4.

The sensors may include one or more inertial sensors, which may each include an accelerometer, gyro sensor or gyrometer, or magnetometer. *Id.* at 3:15-44. The sensors may also include one or more contact sensors, bone conduction microphones, air conduction microphones, chemical sensors, pulse oximeters, temperature sensors, or other physiological or biological sensors. *Id.*

The spectrometer may be an infrared through ultraviolet spectrometer. *Id.* at 3:45-53. The spectrometer is adapted to measure environmental wavelengths for analysis and recommendations. *Id.*

The intelligent control system is further operatively connected to or integrated with a gesture control interface. *Id.* at 3:54-67. The gesture control interface includes one or more emitters and detectors. *Id.* The emitters may be infrared LEDs. A transceiver allows for induction transmissions such as through near field magnetic induction. *Id.* A short range transceiver using Bluetooth, BLE, UWB, or other radio communication means may be present. *Id.*

A magnetic induction, electric conduction, or other type of electromagnetic field transceiver is also operatively coupled to the intelligent control system, linking a processor to the electromagnetic field of the user and allowing the device to link

electromagnetically into a personal area network or body network of another device.
Id. at 4:4-10.

The ear pieces are in operative communication with a mobile device. *Id.* 2:57-61. The mobile device includes a screen, with a display that may be touch-sensitive or otherwise provide for manual inputs. *Id.* The screen display illustrates the ear pieces discussed above.

4. The Operation of the Claimed System

In operation, users of the claimed system can control a set of wireless ear pieces via a software application. The software application displays a visual representation of the wireless ear pieces. Upon receiving an input from the user, the system communicates data associated with the input between the software application and at least one of the wireless ear pieces. The system then performs an action in response to the received data using at least one of the wireless ear pieces. Ex-1001, 1:60-67.

B. Alleged Prior Art

The Petition advances six grounds challenging claims 1-16 using various combinations of Hensen-Patent with Hensen-Video, LG-Manual, and/or Lee. Petition, 6. These references are described briefly below.

1. Hensen-Patent

Disclosure from Hensen-Patent is replied upon in all six the grounds advanced in the Petition. Hensen-Patent was filed on October 8, 2015 and is directed to a frequency equalized stereo audio for hearing-impaired users. Ex-1003, 2:21-23. Hensen-Patent allegedly discloses a primary (control) headphone unit including a master housing “to be independently carried behind an ear of the user” and a master circuitry carried by the master housing. *Id.* at 2:24-35. The housing is a behind the ear housing and is arcuate in shape, as shown in Figure 10 below.

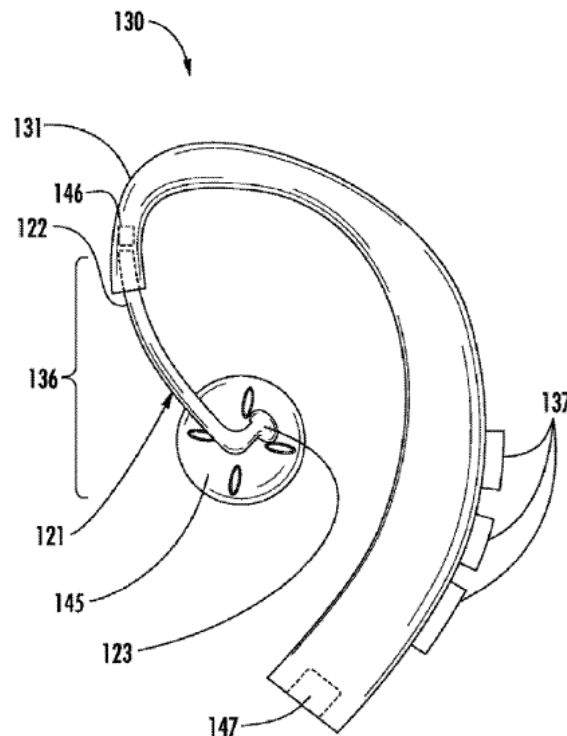


FIG. 10

Ex-1003, Fig. 10.

Hensen-Patent also allegedly discloses a secondary (subordinate) headphone unit. *Id.* at 2:45-51. The primary headphone unit includes a primary rechargeable power supply coupled to the primary circuitry, and the secondary headphone unit comprises a secondary rechargeable power supply coupled to the secondary circuitry. *Id.* at 3:41-48. To compensate for hearing loss of a user, Hensen-Patent allegedly discloses setting independently table frequency equalizers for first and second stereo audio channels (corresponding to the primary and secondary headphone unit, with the two independent stereo audio channels, respectively). *Id.* at 4:1-3.

For the reasons discussed below, the relied-upon disclosures from Hensen-Patent are not prior art under 35 U.S.C. § 102(b)(2)(B).

2. Hensen-Video

Hensen-Video is a video allegedly depicting Dr. Eric Hensen demonstrating the Freewavz smartphone user interface. As with Hensen-Patent, Hensen-Video allegedly discloses a behind the ear housing and is arcuate in shape. Hensen-video was allegedly uploaded on September 10, 2015.

The user interface allegedly demonstrated in Hensen-Video shows the accuracy of his oxygen saturation measurement as compared to a finger monitor. However, as further explained by Patent Owner's expert, Hensen-Video does not

disclose what it purports to. Ex-2020, ¶¶ 71-96. Specifically, Hensen-Video shows up close screenshots of the mobile application at different time stamps. At the first time stamp, the “raw data” section of the application displays that there have been “559 points” as the number of samples, representing the number of “data points” that had been captured. *Id.* at ¶ 54. Then, the video pans to an external pulse oximeter showing an oxygen saturation of 97% and a heart rate between 67 and 72 beats per minute. *Id.* at ¶ 55. The video then pans back to the phone, and 12 minutes have passed. The heart rate now displays at 67 beats per minute with an oxygen saturation of 95%, loosely corresponding with the external oximeter, but the number of “data points” has not increased. *Id.* at ¶ 56. The “Raw Data” portion of the application has also failed to update. This indicates that the display is manually updated to show metrics, not done in response to real time measurements or calculations. *Id.* Further, these “measurements” do not come from the wireless earpiece sensors. Ex-2020, ¶¶ 83-88. As explained below, the FreeWavz (the product being displayed in Hensen-Video) was never made into a viable product. Ex-2024. *See Supra* Section C.2. This video is nothing more than an undeveloped, and later failed, idea for a product that had not been realized.

3. LG-Manual

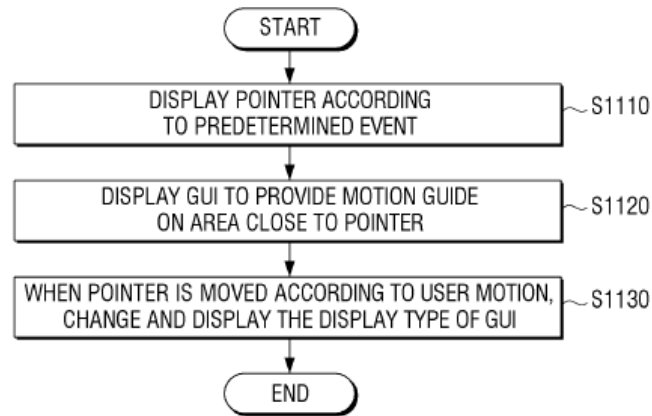
LG-Manual is allegedly a user manual for the LG Heart Rate Headphones. Ex-1005. The LG-Manual allegedly discloses multiple components including an

over-the-ear earphones, USB cable for charging, cable adjuster for adjusting the wired earphones, and a main set that can be clipped to a user's belt or person. *Id.* at 13-18. The application allegedly provides a heart rate measurement. *Id.* at 26. The system also allegedly records workouts.

4. Lee

Lee is allegedly directed to a display apparatus which is controlled by a user motion. Ex-1006, [0003]. The operation of Lee's apparatus is allegedly shown in Figure 11 before. At S110, a pointer to perform a motion task mode is displayed according to a predetermined event. Then, a GUI to provide motion guide is displayed in an area close to the pointer at S1120. For example, this may be displayed at the center of the screen. Next, when the pointer is moved according to a user motion, the display state of the GUI may be changed at S1130. Ex-1006, [0101]-[0105]. Lee's invention allegedly aimed to provide a more convenient and intuitive manner for controlling a display apparatus as compared to previous methods such as remote controllers, mice, touch pads, etc. *Id.*, [0004]-[0010].

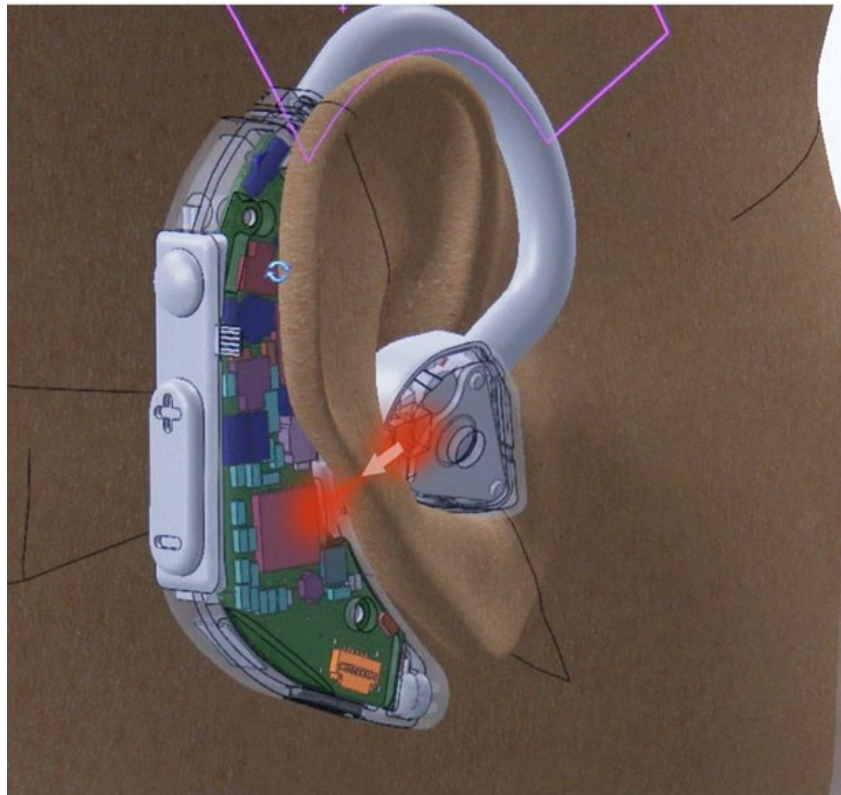
FIG. 11



Ex-1006, Fig. 11.

5. Hensen-Kickstarter

Hensen-Kickstarter allegedly described a website disclosing the FreeWavz product in its funding stages. FreeWavz, according to the website, are “smart earphones with built-in heart rate and fitness monitoring.” Ex-1007. They boast a sleek lightweight design that “hugs your ears.” *Id.* FreeWavz uses a pulse oximeter with red and infrared wavelength-tuned photodiodes positioned on the outside of the ear and behind the ear as shown below. *Id.* Both diodes emit light through the ear and onto a photodetector, which is used to capture heart rate and oxygen saturation. *Id.* Relevant data and results are provided on a phone or screen display. *Id.*



Ex-1007.

The latest update to the FreeWavz (Hensen-Kickstarter) was made on August 8, 2019. The FreeWavz Team posted news of struggle, stating that “Unfortunately we do not have the best news to share as we are struggling to solve our issue with accurate wireless pulseox measurements. Our team is still hard at work in overcoming this problem. As mentioned in our previous update, FreeWavz is looking into releasing an alternative model that will have all features including: true wireless ear-to-ear connectivity, a comfortable natural fit, heart rate reading, a

mobile app with the ability to adjust sound levels, and a superior sound quality overall. The only feature missing will be the oxygen saturation reading.” Ex-1007.

Not only did the Kickstarter fail to produce earpieces with oxygen saturation monitoring, but FreeWavz failed to produce any viable product at all. The FreeWavz website is no longer available, and no social media posts have been made since November 2015.

III. LEVEL OF ORDINARY SKILL

A person of ordinary skill in the art (POSITA) in the timeframe of the invention would have a bachelor’s degree in computer science, electrical engineering, or a similar technical field, with 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 earpieces. Additional experience could substitute for less education, and additional education could likewise substitute for less experience. Ex-2020, ¶ 30.

IV. CLAIM CONSTRUCTION

The claims in an *inter partes* review (IPR) are construed using the same standard that applies in district court proceedings, as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (*en banc*); 37 C.F.R. § 100(b) (2019). Claim terms are afforded “their ordinary and customary meaning,” which is “the meaning that the term would have to a person of ordinary skill in the art in question at the

time of the invention.” *Phillips*, 415 F.3d at 1312–13. “The Board only construes the claims when necessary to resolve the underlying controversy.” *Toyota Motor Corp. v. Cellport Systems, Inc.*, IPR2015-00633, Paper No. 11 at 16 (Aug. 14, 2015) (citing *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Patent Owner does not believe construction of any terms is necessary to resolve the current controversy. Ex-2020, ¶ 44.

V. THE CITED REFERENCES DO NOT RENDER CLAIMS 1-16 UNPATENTABLE

A. The Relied-Upon Hensen-Video Disclosures are Not Prior Art to the ’385 Patent

For Grounds 1-3, Petitioner alleges that the Challenged Claims are obvious over the combination of Hensen-Video and the other prior art references discussed above. However, the Hensen-Video disclosures are not prior art to the Challenged Claims.

Petitioner relies on disclosures from Hensen-Video as § 102(a)(1) prior art. Petition, 6. However, § 102(b) provides various exceptions to disclosures—like those from Hensen-Video—that would otherwise be prior art under § 102(a)(1). This exception applies here because Hensen-Video was published on September 10, 2015, *after* Patent Owner publicly disclosed the *same* subject matter in its Kickstarter for The Dash product between at least February 11, 2015 and before September 10, 2015. Section 102(b)(1)(B) provides:

A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) if. . . (B) the subject matter disclosed had, before such disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

35 U.S.C. § 102(b)(1)(B). The Manual of Patent Examining Procedure further explains that the exception of 102(b)(1)(B) is “only applicable when the subject matter of the intervening disclosure is the same as the subject matter of the earlier inventor-originated prior public disclosure” M.P.E.P. § 717.01(b)(2). However, “it is not necessary for the subject matter to have been disclosed in the same manner or using the same words. In other words, there is no requirement that the disclosure by the inventor or a joint inventor be a verbatim or ipsissimis verbis disclosure of an intervening disclosure in order for the exception based on a previous public disclosure of subject matter by the inventor or a joint inventor to apply.” *Id.*

1. Bragi Publicly Disclosed the Same Subject Matter as Hensen-Kickstarter Between February 11, 2015 and Before September 10, 2015

Bragi published its own Kickstarter campaign for “The Dash”, which was a product that implemented claimed limitations of the ’385 Patent’s invention, before

September 10, 2015, when Hensen-Video was published. The Dash was Bragi's wireless in-ear earpieces product with a corresponding software application for controlling and monitoring the wireless earpiece(s).

Bragi publicly discussed the Dash several times before the publication date of Hensen-Video. For example, on January 6, 2015, Bragi published an article with Bloomberg introducing The Dash wireless earbuds. Ex-2005. ("That's the unholy union that calls itself the Dash, a pair of earbuds that packs a laundry list of functions inside a discrete, tiny waterproof gadget, including a fitness tracker (with training feedback), a 4-gigabyte MP3 player, and a Bluetooth headset, among other features. Oh, and they're cable-free, which is terrific for athletes but less good for anyone prone to losing things... Just like wireless headphones, the Dash can play music by connecting to your smartphone via Bluetooth, although it also has internal storage capacity for about 1,000 songs. Users can turn them off and on by tapping the outside of the device. Beyond that, the earbuds are equipped with 15 sensors that measure everything from how far and fast you've run to your heart and respiration rates. Bragi's chief executive, Nikolaj Hviid, says that the ear is actually a natural place on the body to collect this kind of biometric data.")



Ex-2001.

As another example, on February 11, 2015, Bragi published an update to its Kickstarter entitled “Bragi Update – The App preview, The Charger, the SDK, Bragi Funding and Chinese New Year and.” Ex-2022. In this video, Martin Steiner, the inventor on the ’385 Patent, is seen demonstrating the application. *Id.*; *See also* Ex-2017 and Ex-2018. The development of, and disclosure of the ’385 invention came from the inventor, Mr. Steiner. *Id.* For example, Mr. Steiner is seen in this update on video discussing the development of the application. *Id.* Mr. Steiner was hired by Bragi’s CEO, Nikolaj Hviid, as the User Experience lead to develop the mobile application for interacting with The Dash wireless earbuds. Ex-2018 at ¶ 8. Some of these developments were patented, including those claimed by the ’385 Patent. *Id.*

Disclosures of these developments came from Mr. Hviid's Kickstarter updates, which we made based off of (and sometimes, as with the video discussed above, including) Mr. Steiner. *Id.*

As discussed above, § 102(b)(1)(B) provides a grace period for an intervening disclosure by a third party that prevents the disclosure from being used as a prior art reference. In order for this exception to apply to a third party's public disclosure under § 102(a)(1) (i.e., Hensen-Video), the third party's disclosure must have been made one year or less before the effective filing date of the claimed invention, an inventor-originated disclosure must have been made prior to the third party's disclosure, and both must have disclosed the subject matter.

Here, Hensen-Video (the third party's disclosure) was made less than one year before the effective filing date of the '385 Patent. Further, Martin Steiner (the inventor) of the '385 Patent's February 11, 2015 disclosure was made prior to the publication of Hensen-Video. *See* Ex-2017, Ex-2018 and Ex-2022. This disclosure contained the same subject matter of the '385 Patent's claims for which Petitioner relies on Hensen-Video for. Patent Owner does not concede that Hensen-Video discloses each of the claim limitations Petitioner relies on it for, as explained in more detail below. For the sake of this analysis, Patent Owner focuses on whether Bragi's public disclosures teach the same subject matter as the claim limitations Petitioner relies on Hensen-Video as allegedly disclosing. For these reasons and as explained

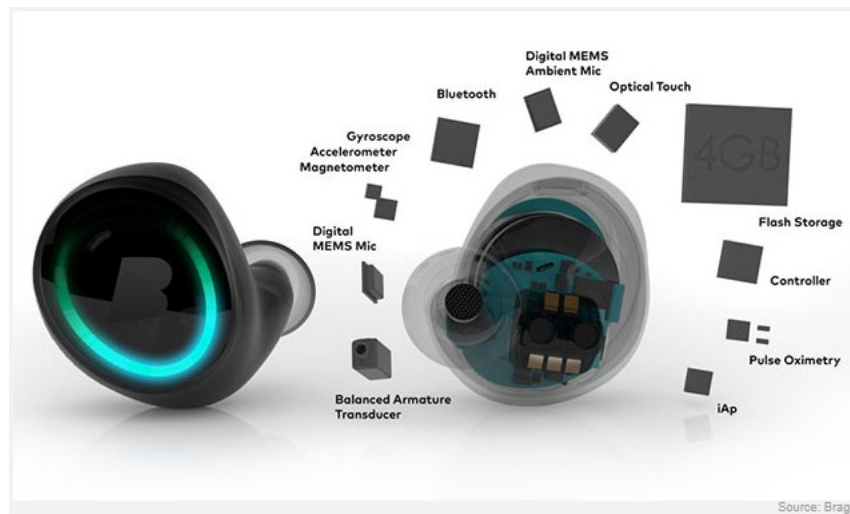
in further detail below, Hensen-Video is not prior art under § 102(a)(1) as Petitioner argues. Grounds 1-3 must fail as a result.

2. The Dash Kickstarter Disclosed the Same Subject Matter that Petitioner Relies on from Hensen-Video

As provided in more detail below, Bragi's public disclosures before September 10, 2015 of The Dash wireless earbuds comprised the same subject matter cited in the Petition and allegedly disclosed in Hensen-Video. Further, the disclosures were inventor originated.

a. Limitation [1A]: “at least one wireless ear piece comprising an ear piece housing and a wireless transceiver disposed within the ear piece housing”

Petitioner does not rely on Hensen-Video for limitation [1A]. Rather, Petitioner alleges that “Hensen-Patent discloses at least one wireless earpiece...comprising an earpiece housing...and a wireless transceiver...disposed within the earpiece housing.” Petition, 26. Regardless, in the Bloomberg article discussed in Section V.A.2(a) regarding limitation [1preamble], Bragi publicly disclosed The Dash, which comprised low-profile, wireless earpiece units and the circuitry contained within the earpiece unit housing, including sensors. Ex-2005.



Ex-2005.

As shown in the above image from the Bloomberg article, The Dash comprised at least one wireless ear piece comprising an ear piece housing, the in-ear earpiece depicted above. Further, in addition to the circuitry/sensors depicted, the article goes on to disclose the presence of a transceiver within the earpiece.

Just like wireless headphones, the Dash can play music by connecting to your smartphone via Bluetooth, although it also has internal storage capacity for about 1,000 songs. Users can turn them off and on by tapping the outside of the device. Beyond that, the earbuds are equipped with 15 sensors that measure everything from how far and fast you've run to your heart and respiration rates. Bragi's chief executive, Nikolaj Hviid, says that the ear is actually a natural place on the body to collect this kind of biometric data. The goal, however, is combining that information into useful feedback, so that the Dash could, conceivably, inform a runner, based on her oxygen-saturation level and heart rate, whether she should slow her pace.



Ex-2002.

Additionally, on April 1, 2015, the CEO of Bragi gave a video tour of the Bragi workspace that was published to the Kickstarter. Ex-2008. The video depicted in detail the circuitry within the earpiece housing as it sat under a microscope during development. *Id.* This combination clearly shows that, by the publication date of Hensen-Video, Bragi had publicly disclosed the “at least one wireless ear piece comprising an ear piece housing and a wireless transceiver disposed within the ear piece housing” required by limitation [1A].

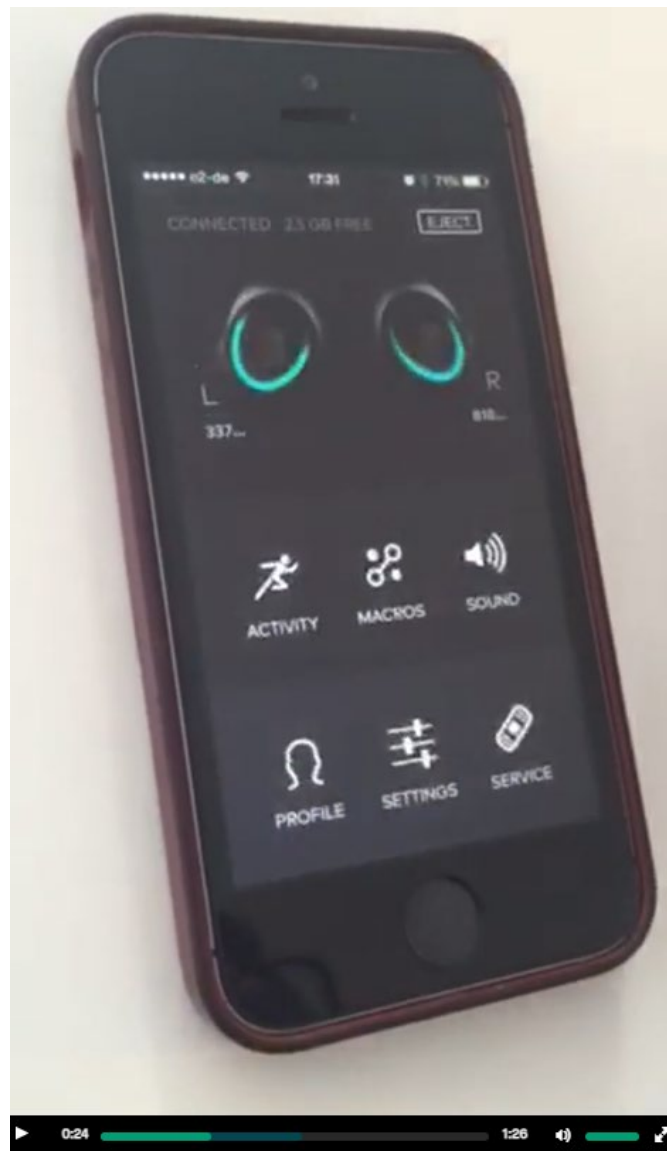
b. Limitation [1B]: “a software application for executing on a computing device having a display associated therewith”

For limitation [1B], Petitioner relies on a combination of Hensen-Patent and Hensen-Video. Petition, 30. Petitioner alleges that Hensen-Video discloses a software application executing on a smartphone computing device. *Id.* at 32 (citing Ex-1002 at ¶ 53). Petitioner alleges that in Hensen-Video, the earpieces are wirelessly paired with a remote control device (with a display) that includes a software application. *Id.*

However, Bragi publicly disclosed this same subject matter prior to the publication date of Hensen-Video. For example, on February 11, 2015, Bragi published a Kickstarter campaign update with a video of the '385 Patent inventor, Martin Steiner, providing a preview of the software application for interacting with the Dash wireless earbud system. Ex-2022. *See also* Ex-2017 and Ex-2018. This update also included a download for a demo of the app which Kickstarter backers could download and provide feedback on. Some of the figures on the board behind Martin Steiner include images which were published in the '385 Patent. Ex-2022, Ex-1001.

As an additional example, on June 24, 2015, Bragi published a Kickstarter campaign update with a video of the '385 Patent inventor, Martin Steiner, demonstrating the functionality of the Application. Ex-2006. At 0:24 of the video,

Mr. Steiner shows his mobile device screen with the BRAGI App displayed. *Id.*, at 0:24. As shown in the video screenshot below, the display clearly shows the two wireless earbuds and gives the user a variety of options for interacting with them. *Id.* This clearly portrays the software application having a display associated therewith as required by limitation [1B].



Ex-2006.

c. Limitation [1C]: “wherein the software application configured to display one or more screen displays on a display of the computing device;”

For limitation [1C], Petitioner relies only on Hensen-Video. Petition, 40. Petitioner alleges that Hensen-Video discloses that a software application is configured to display screen displays on the display referenced with regard to limitation [1B]. *Id.* at 39. To support this, Petitioner points to a screenshot from Hensen-Video displaying a “home screen.” *Id.*

However, Bragi publicly disclosed this same subject matter prior to the publication date of Hensen-Video. In the February 11, 2015 Kickstarter update referenced previously, Bragi included a download for a demonstration of the application which Bragi’s Kickstarter backers could download and operate on their smartphones. Ex-2022; *See also* Ex-2018. This demonstration disclosed a mobile application which could be downloaded and displayed on a user’s mobile screen display (or other screen display). Accordingly, Bragi had, by the publication date of Hensen-Video, disclosed a software application configured to display one or more screen displays on a display of the computing device.

d. Limitation [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”

Petitioner relies on a combination of Hensen-Patent and Hensen-Video for this limitation. In particular, Petitioner alleges that Hensen-Video discloses a remote control device that “allows a user to interact with the earpieces by sending commands to the earpieces and displaying information received from the earpieces.” Petition, 43. However, as explained above with reference to limitation [1B], Bragi had, by the publication date of Hensen-Video, disclosed a software application which provides a user interface. *See supra* Section V.A.2.c. This user interface provides multiple options which allow a user to interact with the wireless earpiece(s). Ex-2006.

Further, for reasons explained in more detail below, Hensen-Video does not disclose a software application which “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.” *See* Section V.B.1.a.

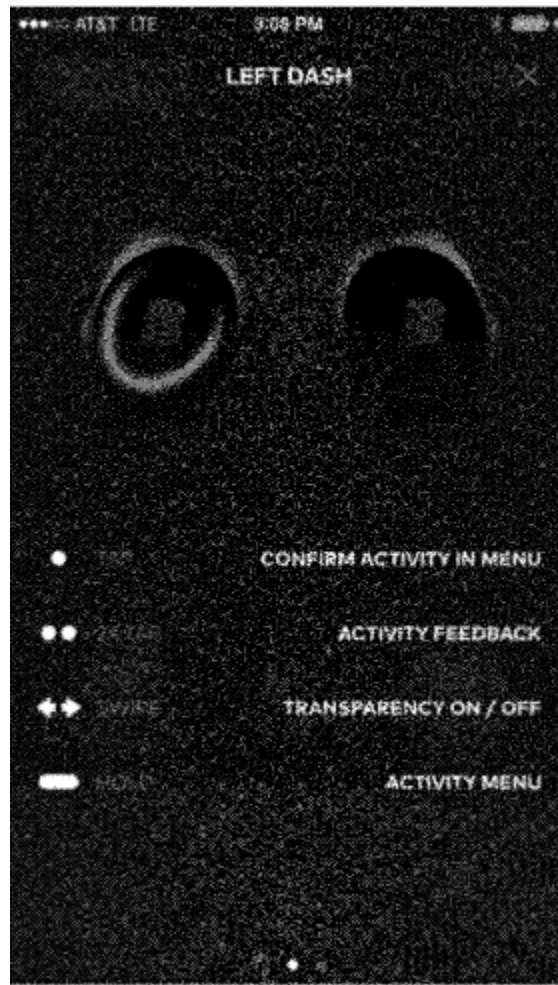
- e. **Limitation [1E]: “wherein the user interface is configured to display a visual representation of the at least one wireless ear piece on at least one of the one or more screen displays,”**

For limitation [1E], Petitioner relies on a combination of Hensen-Patent and Hensen-Video. Petition, 48. However, Bragi publicly disclosed this same subject matter prior to the publication date of Hensen-Video.

For example, in the February 11, 2015 Kickstarter campaign update, behind Martin Steiner is a snippet of one of the Figures from the '385 Patent's specification, each of which are reproduced below. Ex-2022. *See also* Ex-2017 and Ex-2018. These figures show the application with visual representations of the wireless ear pieces displayed.

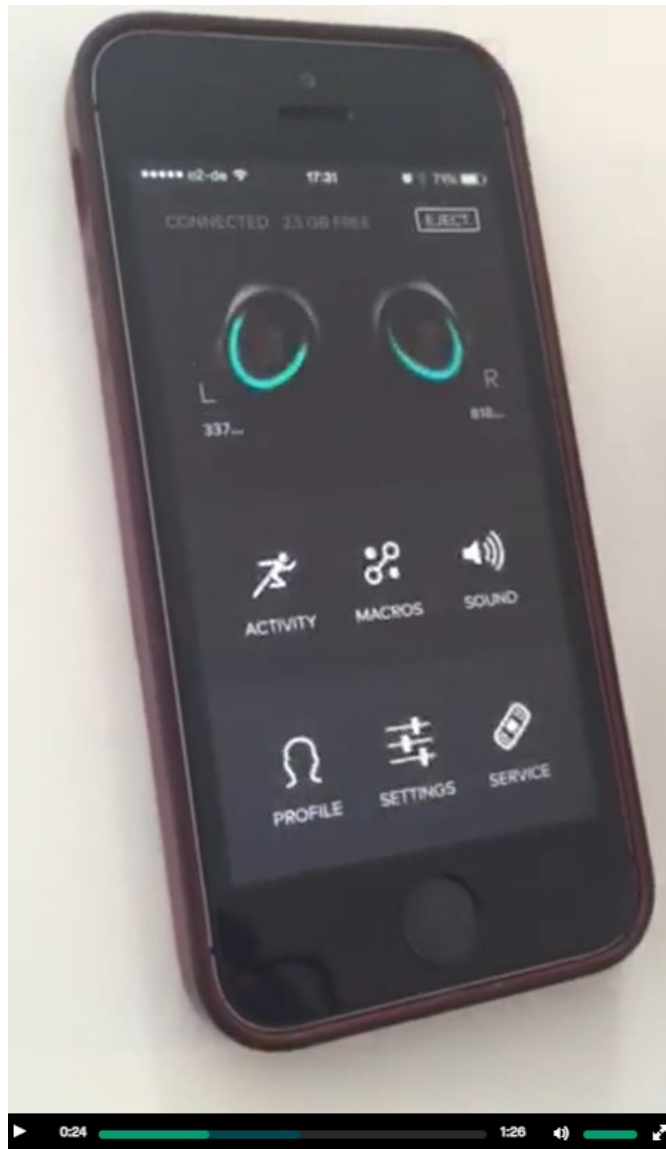


Ex-2022.



Ex-1001 at Figure 1.

As an additional example, in the June 24, 2015 Bragi Kickstarter campaign update, Mr. Steiner shows his mobile device screen with the Bragi Application displayed. Ex-2006 at 0:24. As shown in the video screenshot below, the display clearly shows the two wireless earbuds and gives the user a variety of options for interacting with them. *Id.* For example, a user can interact with the wireless ear pieces by selecting any of the options listed, sound, settings, activity, etc.

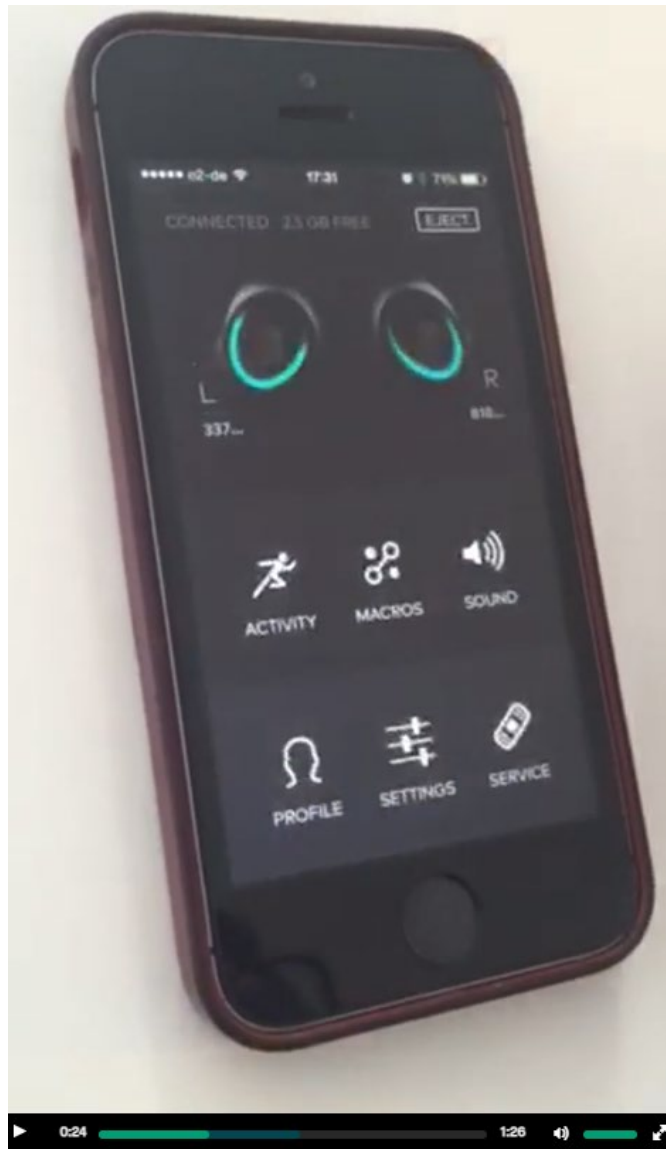


Ex-2006.

- f. Limitation [1F]: “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.”**

For limitation [1F], Petitioner relies on Hensen-Video alone. Petition, 51. However, Bragi publicly disclosed this same subject matter prior to the publication date of Hensen-Video.

Specifically, in the June 24, 2015 Kickstarter campaign update, at 0:24 of the video, Mr. Steiner shows his mobile device screen with the Bragi Application displayed. Ex-2006 at 0:24. As shown in the video screenshot below, the display clearly shows two wireless ear pieces with the corresponding properties displayed beneath the visual presentation of the two wireless earpieces.



Ex-2006.

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

Petitioner relies on Hensen-Video for disclosing that the earpieces include a physiological sensor. Petition, 58. However, as explained in more detail in Section

B below, this analysis is inaccurate. Even so, Bragi had disclosed this limitation publicly before the publication date of Hensen-Video.

For example, in a January 6, 2015 article, Bragi publicly disclosed that it's Dash "earbuds are equipped with 15 sensors that measure everything from how far and fast you've run to your heart rate and respiration rates." Ex-2005. Therefore, Bragi had publicly disclosed that at The Dash earbuds comprised a physiological sensor.

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

With regard to Claim 3, Petitioner alleges that Hensen-Video discloses "that the remote control device includes a software application that provides for tracking the one or more physical activities using the physiological sensor." Petition, 61. Petitioner first points to the analysis of Claim 2, arguing that Hensen-Video discloses that the earpieces include a physiological sensor. *Id.* at 62. As discussed above, Bragi had disclosed this publicly before the publication date of Hensen-Video. *See Supra* Section V.a.2.h.

Petitioner further alleges that "Hensen-Video discloses that the wireless earpiece system is intended to be used while the user participates in a variety of physical activities." Petition, 62. Two specific activities that they point to are running and cycling. *Id.*

However, on June 5, 2015, prior to the publication date of Hensen-Video, Bragi published a Kickstarter update that disclosed this same subject matter when it described some of the benefits of the low profile of the wireless earpieces. Ex-2009. In particular, the update disclosed that “[t]he Dash will provide stereo playback even if the user has long and wet hair, is wearing a helmet for skiing or **biking** and in other challenging conditions. It will even work while swimming.” *Id.* (emphasis added).

In a series of videos published to the Kickstarter, the earbuds are seen in use during various types of physical activities. For example, users can be seen utilizing the earbuds while running and swimming, as depicted below.



Ex- 2010.



Id.

In these field test videos, The Dash earbuds are visibly seen in the athlete's ears while he completes various physical activities, including, for example, swimming.

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

As discussed above, Bragi publicly disclosed physical activities selected from a set consisting of running, biking and swimming prior to the effective filing date of Hensen-Video. *See Supra* Section V.A.2.h.

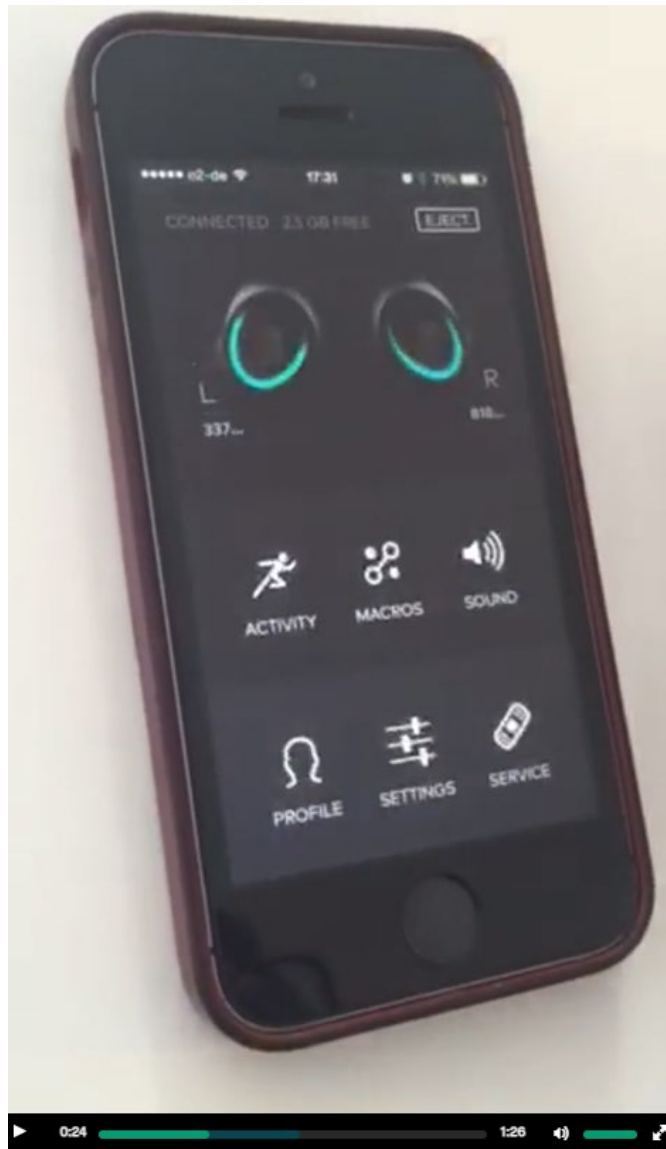
- j. Claim 11: “The system of claim 1 wherein the software application provides for connecting the at least one wireless ear piece with the computing device.”**

As discussed above, Bragi publicly disclosed the ability of connecting at least one wireless ear piece with the computing device before the publication date of Hensen-Video. *See Supra* Section V.A.2.b.

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

Petitioner alleges that Hensen-Video discloses that the device is a mobile device. Petition, 71. However, as discussed above, before the publication date of Hensen-Video, Bragi had already disclosed a system with the application functioning on a mobile device. For example, in the June 24, 2015 Kickstarter, Bragi published a video of the '385 inventor, Martin Steiner, demonstrating the functionality of the Bragi Application. Ex-2006.

In the video, Mr. Steiner shows his mobile device screen with the Bragi Application pulled up. *Id.*, at 24 seconds. Here, the computing device is a mobile device as claimed.



Ex-2006.

- l. Limitation [13A]: “providing a software application for controlling the set of wireless ear pieces, the software application adapted to execute on a computing device”**

Petitioner incorporates their arguments for limitation [1B], relying on the same portions of Hensen-Video in support. Thus, for the same reason discussed in Section V.A.2.b above, the relied-upon portions of Hensen-Video are not prior art.

- m. Limitation [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:”**

Petitioner argues that Hensen-Video discloses an “implementation of the remote control device...to receive input from the user into a mobile device.” Petition, 73. However, as explained above with reference to limitation [1B], Bragi had, by the publication date of Hensen-Video, disclosed a software application which provides a user interface providing multiple options which allow a user to interact with the wireless earpiece(s). Ex-2006. *See Supra* Section V.A.2.b.

- n. Limitation [13C]: “wherein at least one of the one or more screen displays display a visual representation of the set of wireless ear pieces;”**

Petitioner incorporates their arguments for limitation [1E], relying on the same portions of Hensen-Video in support. Thus, for the same reason discussed in Section V.A.2.e above, the relied-upon portions of Hensen-Video are not prior art.

- o. Limitation [13D]: “communicating data associated with the input between the software application and at least one of the wireless ear pieces”**

Petitioner incorporates their arguments for limitation [1D], relying on the same portions of Hensen-Video in support. Thus, for the same reason discussed in Section V.A.2.d above, the relied-upon portions of Hensen-Video are not prior art, Petitioner have failed to meet their burden, and institution should be denied.

- p. Limitation [14A]: “providing a software application for communicating with the set of wireless ear pieces, the software application adapted to execute on a computing device”**

Petitioner incorporates their arguments for limitation [1B], relying on the same portions of Hensen-Video in support. Thus, for the same reason discussed in Section V.A.2.b, above, the relied-upon portions of Hensen-Video are not prior art,

- q. Limitation [14B]: “using the software application on the computing device to display one or more screen displays on a display of the computing device,”**

Petitioner incorporates their arguments for limitation [1C] and [13B], relying on the same portions of Hensen-Video in support. Thus, for the same reason discussed in V.A.2.c and V.A.2.m above, the relied-upon portions of Hensen-Video are not prior art.

- r. Limitation [14C]: “wherein at least one of the one or more screen displays display a visual representation of the set of wireless ear pieces”**

Petitioner incorporates their arguments for limitation [1E] and [13C], relying on the same portions of Hensen-Video in support. Thus, for the same reason discussed in V.A.2.f and V.A.2.n above, the relied-upon portions of Hensen-Video are not prior art.

- s. Limitation [14D]: “communicating data received from one or more of the wireless ear pieces to the computing device”**

Petitioner incorporates their arguments for limitation [1D] relying on the same portions of Hensen-Video in support. Thus, for the same reason discussed in V.A.2.d above, the relied-upon portions of Hensen-Video are not prior art.

- t. Limitation [14E]: “updating the screen displays on the display of the computing device using the data”**

Petitioner incorporates their arguments for limitation [1D], relying on the same portions of Hensen-Video in support. Thus, for the same reason discussed in V.A.2.d above, the relied-upon portions of Hensen-Video are not prior art.

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

Petitioner alleges that Hensen-Video discloses “a wireless earpiece comprising a physiological sensor.” Petition, 84. However, Bragi publicly disclosed this subject matter prior to the effective filing date of Hensen-Patent when it

disclosed in a January 5, 2015 Bloomberg article, that “the earbuds are equipped with 15 sensors that measure everything from how far and fast you’ve run to your heart rate and respiration rates.” Ex-2005.

B. The Alleged Prior Art Does not Disclose or Suggest the Claims ’385 Patent

1. Claim 1

Petitioner challenges Claim 1 in 2 Grounds: Ground (Hensen-Patent and Hensen-Video) and Ground 4 (Hensen-Patent and Hensen-Kickstarter). Petition, 7. In both of these Grounds, Petitioner fails to establish by a preponderance of the evidence that the alleged prior art discloses or suggests Claim 1. Ex-2020, ¶¶ 97 and 193. Grounds 4-6 rely on Hensen-Kickstarter to the extent that PO challenges the availability of Hensen-Video as prior art under §311. Petition, 99. As articulated above, Hensen-Video is not prior art to the ’385 Patent. *See Supra* Section V.A.

As Petitioner notes, Hensen-Kickstarter is associated with the same author/inventor and commercial product as Hensen-Video and Hensen-Patent. *Id.* at 100. Petitioner relies on Hensen-Kickstarter for the same elements as Hensen-Video is relied on for, based on the FreeWavz product. In place of the Video, screenshots from the Kickstarter campaign are provided as evidence, generally references the same features/disclosures as Hensen-Video. Therefore, for the same reasons

Petitioner's analysis of Claim 1 is insufficient under Ground 1, their analysis of Claim 1 under Ground 4 is also insufficient. Ex-2020, ¶ 193.

- a. **Limitation [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;”**

The Petition states that a combination of Hensen-Patent and Hensen-Video discloses limitation [1F] (Petition, 42 and 102), but that is incorrect. Ex-2020, ¶ 99. Specifically, Petitioner relies on Hensen-Video for disclosing a “software application that provides a user interface for use by a user of the at least one wireless earpiece.” Petition, 44. To support this proposition, they pull screenshots from Hensen-Video showing Dr. Hensen demonstrating the FreeWavz product. They cite to Dr. Hensen saying in the video “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.” Petition, 45 (citing Ex-1004 at 0:28-1:28). However, there is no evidence that the wireless ear piece(s) interact with the software application, rather, there is evidence that the “application” displayed in Hensen-Video is a fabricated display. Ex-2020, ¶¶ 99-103. Hensen-Video is not functional, and the demonstration that it is displaying heart rate is manipulated. *Id.*

Not only is the application not functional in the way the video attempts to show, but nowhere does Hensen-Video provide any indication that a command can

be sent from the application to the wireless ear piece(s). Ex-2020, ¶ 100. The Petition also does not attempt to make this assertion, nor provide any obviousness analysis for this. Instead, Petition notes that the software application monitors the battery life of the ear pieces (Petition, 45), but there is no evidence that this is functional, nor does it disclose an *interaction* with the wireless ear pieces. Ex-2020, ¶ 102. Petitioner relies on Hensen-Kickstarter for limitation [1D] in the same way as they rely on Hensen-Video, depicting essentially the same “home” screen. Petition, 103. Petitioner’s analysis of Claim 1 in Ground 4 is deficient for the same reason as with Claim 1 in Ground 1.

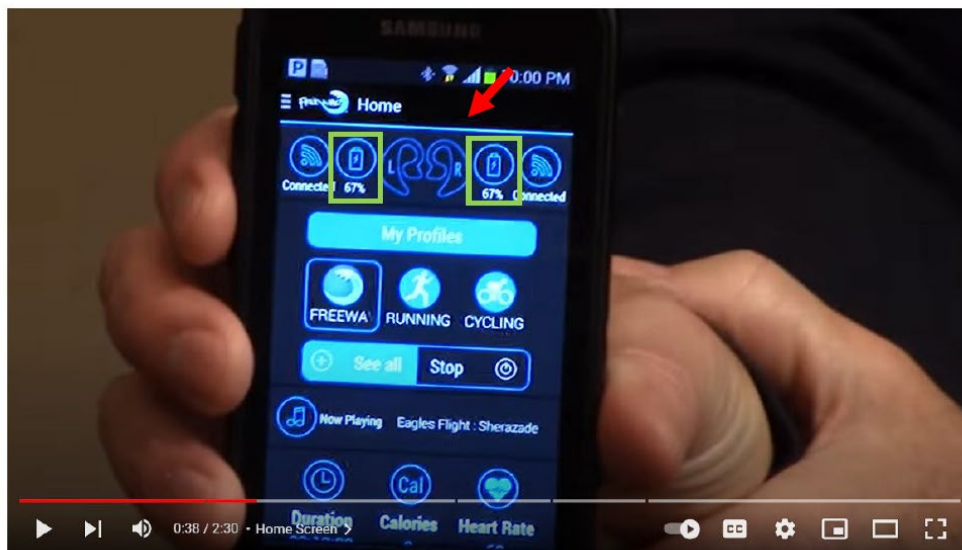
b. Limitation [1F]: “the visual representation indicative of a function or property of the at least one wireless ear piece communicated from the at least one wireless earpiece to the computing device.”

The Petition states that Hensen-Video discloses limitation [1F] (Petition, 51), but that is incorrect. First, by splitting this limitation into [1E]/[1F] in the way Petitioner does, Petitioner fails to consider the claim limitation in its full context. Ex-2020, ¶ 104.

First, it’s important to note that “the visual representation” of limitation 1F gets its antecedent basis from 1E, which recites “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.” Ex-1001 at Limitation 1F. Therefore,

the “visual representation” which is indicative of the function or property of the wireless earpiece must be “a visual representation of the at least one wireless earpiece.” Ex-2020, ¶ 105. Further, as explained above, the application of Hensen-Video is non-functional. *See Supra* Section II.B.2.

Petitioner points to a screengrab from Hensen-video which they have annotated, as reproduced below.



Petition, 52. Petitioner points to a visual presentation of a battery which shows a depicts a battery percentage. This does not meet the claim limitation, because the “visual representation indicative of a function or property of the at least one wireless ear piece” must be the “visual representation of the at least one wireless ear piece.” Ex-2020, ¶ 106. Hensen-Patent, where it displays a function or property of the

wireless ear piece, is not tied to the visual representation of the at least one wireless earpiece.

Thus, Hensen-Patent does not disclose the claimed “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.” The Petition does not rely on obviousness for limitation [1F]. Petition, 51-54. Not only does the Petition avoid reliance on another secondary reference here, but it does not even mention the words “obvious” or “obviousness.” Therefore, Petitioner is confined to the teachings of Hensen-Video for limitation [1F]. Petitioner’s analysis fails as a result.

Further, Petitioner relies on Hensen-Video to disclose limitation [1F] in Ground 1. Petition, 51. Petitioner addresses elements [1B]-[1E] in Ground 4, but provides no analysis of [1F]. Petitioner relies solely on Hensen-Video to disclose [1F]. Therefore, Ground 4 has no analysis for limitation [1F], and its analysis of independent Claim 1 fails as a result. Because each of claims 2-16 depend from Claim 1, and Petitioner has not carried its burden in establishing unpatentability of Claim 1 under either Ground 1 or Ground 4, all 6 grounds presented in the Petition must fail.

2. Dependent Claims 2-12 and 15-16

As discussed above, the Petition is deficient in its analysis of Claim 1. Therefore, for at least the same reasons discussed above, the Petition is also deficient in its analysis of the challenged dependent claims (Claims 2—12 and 15-16), by virtue of their dependency from Claim 1. The Petition’s analysis of the dependent claims is also deficient for the following reasons.

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

Petitioner asserts that Hensen-Video discloses “a software application that provides for tracking the one or more physical activities using the physiological sensor.” Petition at 61. However, as discussed above, Hensen-Video discloses no such sensor. Ex-2020, ¶ 114. *See also* Section II.B.2.

Petitioner attempts to assert that Hensen-Video shows a pulse oximeter which measures physiological quantities including heart rate and oxygen saturation. Petition at 58. Hensen-Video does not show that the wireless earpieces (the claimed system) measure heart rate or oxygen saturation. Ex-2020, ¶ 115. Further than Hensen-Video’s misleading graphical display without corresponding data points, Dr. Hensen himself in the video says that he has “engaged the pulse oximetry.” Ex-1004 at 0:09-0:19; Ex-2020, ¶ 115. The Petitioner attempts to rely on this statement to conclude that Hensen-Video teaches that the wireless ear pieces comprises a

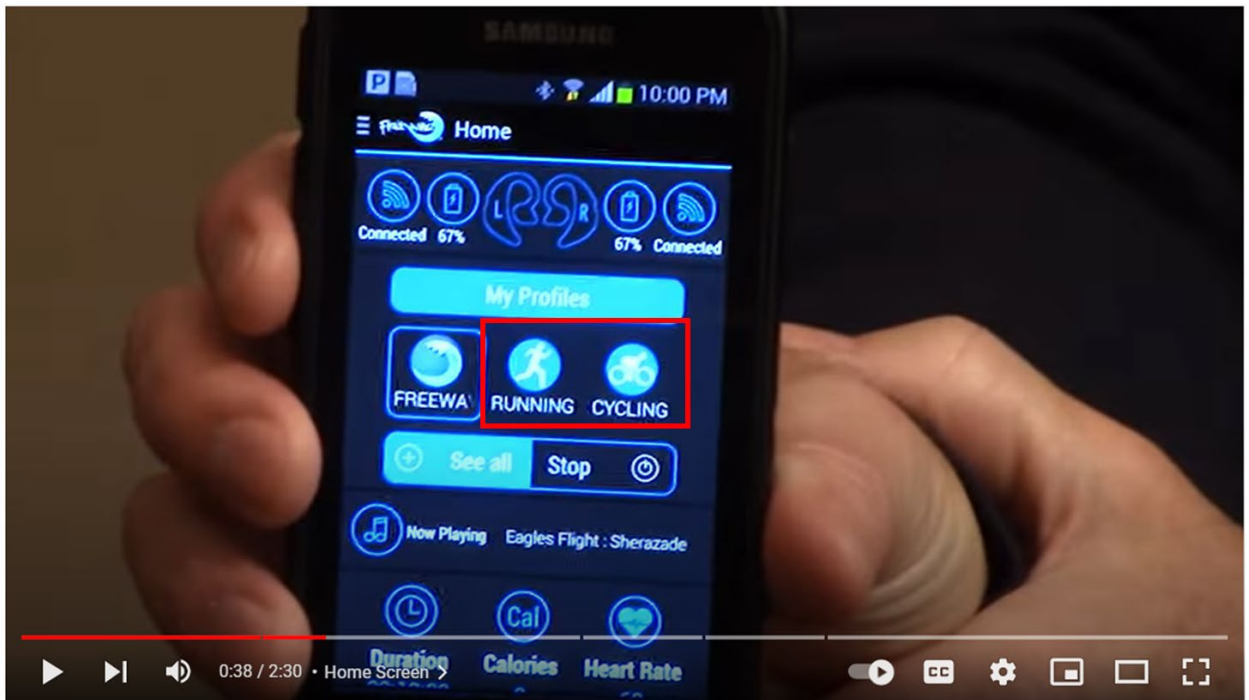
physiological sensor, but this is conclusory. In fact, Hensen-Video relies on an external pulse oximeter which is not included as part of the at least one wireless earpiece. Therefore, Hensen-Video does not teach or suggest “at least one wireless earpiece compris[ing] a physiological sensor.”

b. Dependent Claims 3 and 4

The Petition states that Hensen-Patent in combination with Hensen-Video or Hensen-Kickstarter discloses Claims 3 and 4. (Petition at 59, 66 and 104), but that is incorrect.

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

Petitioner asserts that Hensen-Video discloses “a software application that provides for tracking the one or more physical activities using the physiological sensor.” Petitioner at 61. Petitioner points to “running” and “cycling” icons annotated in the image below.



Petition, 61. As shown here, these “activities” are under the heading “My Profiles.” A POSITA would understand this to imply that these pictured activities are pre-established settings under a user profile. Nothing that Petitioner points to in the Petition establishes that “the software application provides for tracking one or more physical activities.” Ex-2020, ¶ 119. In fact, the Petition doesn’t argue or show that Hensen-Video teaches that the application is capable of recording any data at all. *Id.* Petitioner has not presented a sufficiently clear mapping or analysis of the limitations, as it was required to do. *Amazon Web Services, Inc. v. Saint Regis Mohawk Tribe*, IPR2019-00103, Paper 22, at 17 (PTAB May 10, 2019) (“The burden is on Petitioner, not the Board, to specify with particularity how the [prior art] teaches [the claimed elements].”).

Petitioner points to the Heart Rate measurement, oxygen saturation value, and raw data shown in Hensen-Video, but doesn't connect how these provide for "tracking one or more physical activities." Ex-2020, ¶¶ 128-132. Not only does Petitioner not explain how these measurements provide for tracking of physical activities, but the application of Hensen-Video is not functional, with its data measurements remaining static for over a 12-minute period while values mysteriously fluctuate anyway, indicating that the pointed to heart rate value is not derived from the "raw data" the application attempts to show. *Id.* at ¶ 133.

Finally, aside from the fact that Hensen-Video (and relatedly, Hensen-Kickstarter) shows values that are not derived from any sort of data, even if they were accurate measurements, they are not associated with "one or more physical activities" as the limitation requires. *Id.* at ¶ 133. Merely displaying data is not "tracking a physical activity." Petitioner has provided no analysis for how the prior art references would need to be modified in order to arrive at the claim language, instead asserting that the references do disclose this limitation. As such, Petitioner is confined to the teaching of Hensen-Video (and Hensen-Kickstarter) for this limitation, and neither reference discloses a software application which "provides for tracking one or more physical activities using the physiological sensor."

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

Petitioner asserts that Hensen-Patent in combination with Hensen-Video or Hensen-Kickstarter disclose a software application for tracking physical activities including running, biking, and swimming. Petition, 66. This is once again incorrect. Ex-2020, ¶ 136. First, because Petitioner has failed to show that the cited references disclose or suggest Claim 3, Petitioner also has not established that they disclose or suggest discloses Claim 4, which depends from Claim 3 and imposes additional requirements on the “physical activities” introduced in limitation 1[e]. In particular, because the references relied upon by Petitioner do not disclose the a “software application provides for tracking one or more physical activities,” they cannot (and do not) disclose that those physical activities come “from a set consisting of funning, biking and swimming.” Ex-2020, ¶¶ 138-139.

Second, Petitioner asserts that it would have been an “obvious design choice” to include swimming along with running and biking. Petitioner’s expert goes so far as to say that “adding one more activity (swimming) would have been trivial to implement.” Ex-1002 at ¶¶102-103. This is also incorrect. Adding swimming to a subset of physical activities is not simply a trivial choice when it comes to wireless audio devices. *Id.* The sensor and wireless earpiece system would need to be waterproof, requiring substantial additional engineering and consideration not

disclosed by any of the Hensen references. *Id.* A POSITA would not consider swimming to be a trivial design choice to implement here. Petitioner’s analysis of Claim 4 fails.

c. Dependent Claims 5-7

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

In Ground 2, Petitioner relies on LG-Manual to disclose “lighting of the at least one wireless earpiece.” Petition, 87. Petitioner is incorrect. Ex-2020, ¶¶ 165-170. Specifically, Petitioner points to coloring the wireless earpieces pink in LG-Manual as “lighting.” Petition, 87. However, a POSITA would understand that the claimed “lighting” is referring to illumination, which is different than changing the color of an element. Ex-2020, ¶ 167. Dependent Claim 5 is not disclosed by LG-Manual, and Petitioner’s analysis fails as a result.

2. Dependent Claims 6 and 7 ““The system of claim 5 wherein the lighting is associated with the function or property of the at least one wireless ear piece” and “The system of Claim 6 wherein the property is remaining battery life.”

In Ground 2 for Claims 6 and 7, Petitioner continues its mischaracterization of LG-Manual. Petitioner again relies on the highlighting of the earpieces to disclose the lighting, which for the reasons discussed above is inaccurate. Petition, 91. Because the relied upon reference does not disclose “lighting,” it cannot disclose “lighting associated with the function or property of

the at last one wireless earpiece,” nor that “the property” of Claim 6 is remaining battery life. Ex-2020, ¶¶ 171-180. Petitioner makes reference to the file history of the ’385 Patent, but ignores that the Claim limitations specifically require “lighting.” Petitioner’s argument here is a red-herring, the claims require “lighting” and Petitioner has not shown that LG-Manual teaches this element. As a result, Petitioner’s analysis for Claims 6 and 7 is deficient and must fail.

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

Petitioner asserts that Hensen-Patent discloses this limitation, arguing “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, 69. This is incorrect. Ex-2020, ¶ 141. As explained by Patent Owner’s expert, playlists would’ve been known to a POSITA at the time of invention as songs organized into lists. *Id.* at ¶ 143. (citing Ex-2023.) Petitioner’s merely demonstrate that audio files can be ordered into some sort of sequence, providing the ability for the user to skip to another song. *Id.* at ¶ 144. There is no indication that the users would have the ability to organize songs into a playlist, determine this sequence, or put audio files together into a playlist as a POSITA would’ve understood it. *Id.*

Petitioner relies only on Hensen-Patent to disclose this limitation. Nowhere in Hensen-Patent does the term “playlist” even appear. As a result, Petitioner’s analysis of dependent Claim 10 fails.

e. Dependent 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.”

Petitioner asserts that Hensen-Video teaches “a software application that provides for connecting (e.g., pairing) the at least one wireless earpiece (e.g., the right and left headphone units) with the computing device (e.g., smartphone computing device.)” Petition, 70. This is incorrect. Ex-2020, ¶ 146.

Petitioner quotes Dr. Hensen from the video saying “I’ve paired [the earpieces] with each other and also paired with the source device, in this case, a smartphone.” Petition at 70 (citing Hensen-Video at 0:09-0:19). However, Hensen-Video provides no indication this is the case. Ex-2020, ¶ 149. There is no demonstration in the video showing how the wireless earpieces are paired with the smartphone. Therefore, there’s no disclosure that the “software application provides for connecting” the wireless earpieces to the computing device as the claims require. *Id.* There’s no teaching at all of how the devices are paired. Further, on it’s face, Dr. Hensen’s statement is that he has paired the earpieces to the *smartphone* not a *software application*. As a result, Petitioner’s analysis fails.

3. Claims 13 and 14

Claims 13 and 14 contain elements which mirror those for which the alleged prior art does not disclose or suggest the claimed limitations of the '385 Patent. For the same reasons as discussed above with reference to Claim 1, the Petition's analysis of Claims 13 and 14 fail. *See Supra* Section V.B.1.

a. Claim 13

Petitioner argues that Hensen-Patent in combination with Hensen-Video discloses communicating data associated with the input between the software application and at least one of the wireless earpieces. Petition, 75. Petitioner relies on Hensen-Video for this element, incorporating its analysis for element [1D]. For the same reasons as described with reference to limitation [1D], Petitioner's analysis here fails.

b. Claim 14

First, Petitioner misstates the Claim language here. Claim 14 is directed to a method for “communicating data from a set of wireless earpieces,” not “controlling a set of wireless earpieces.” Petitioner's experts makes the same mistake in his declaration, an example of an instance where the declaration is almost entirely a word-for-word (or slightly reworded) recitation of the Petition. Throughout his declaration, Dr. Anthony does not provide any independent analysis aside from copying the attorney arguments in the Petition and does not disclose the underlying

facts or data upon which his opinions are based. As a result, his opinion should be entitled to no weight. *Xerox Corp. v. Bytemark, Inc.*, IPR2022-00624, Paper No. 9 (P.T.A.B. Aug 24, 2022) (designated precedential Feb. 10, 2023, Paper 12) (denying institution and rejecting a conclusory and unsupported expert declaration that repeated portions of the Petition verbatim.).

Further, Petitioner argues that Hensen-Patent in combination with Hensen-Video discloses communicating data received from one or more of the wireless earpieces to the computing device and updating screen displays on the display of a computing device using the data. Petition, 78-83. For each of these limitations [14D] and [14E], Petitioner incorporates its analysis of Hensen-Video as described in element [1D]. Similarly, for the same reasons as described with limitation [1D], Petitioner's analysis is deficient. Further, Hensen-Video does not show that its application is functional, nor that it can receive or update data. Ex-2020, ¶ 157. There is no disclosure in the prior art, nor does Petitioner provide any analysis, for how the combination of Hensen-Patent and Hensen-Video disclose a "method for communicating data from a set of wireless earpieces." *Id.* at ¶ 159.

C. Objective Evidence Confirms the Nonobviousness of the Challenged Claims

Petitioner relies on obviousness for each of the six grounds presented in the petition. Industry praise and commercial success of the patented inventions, as well

as the failure of others to independently develop the patented invention, confirms the nonobviousness of the Challenged Claims. *See generally* Exs. 2011-2019. When present, objective evidence of nonobviousness must be considered. *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1048 (Fed. Cir. 2016), cert. denied, 138 S. Ct. 420 (2017).

As the Board points out, “A patentee is entitled to a presumption of nexus “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)). “[T]he patentee retains the burden of proving the degree to which evidence of secondary considerations tied to a product is attributable to a particular claimed invention.” *Fox Factory*, 944 F.3d at 1378.” Paper 14 at 25.

a. The Dash is Coextensive with the ’385 Patent Claims

In granting institution, the Board held that Patent Owner did not establish that The Dash is coextensive with the ’385 patent claims. Paper 14 at 26. In particular, the board noted that (1) the articles are not clear as to whether the praise was due to extraneous factors other than the claimed invention and (2) there is no mention of whether the products provide a visual representation of the earpieces. As explained in detail below, there is a nexus between the product (embodying the claimed

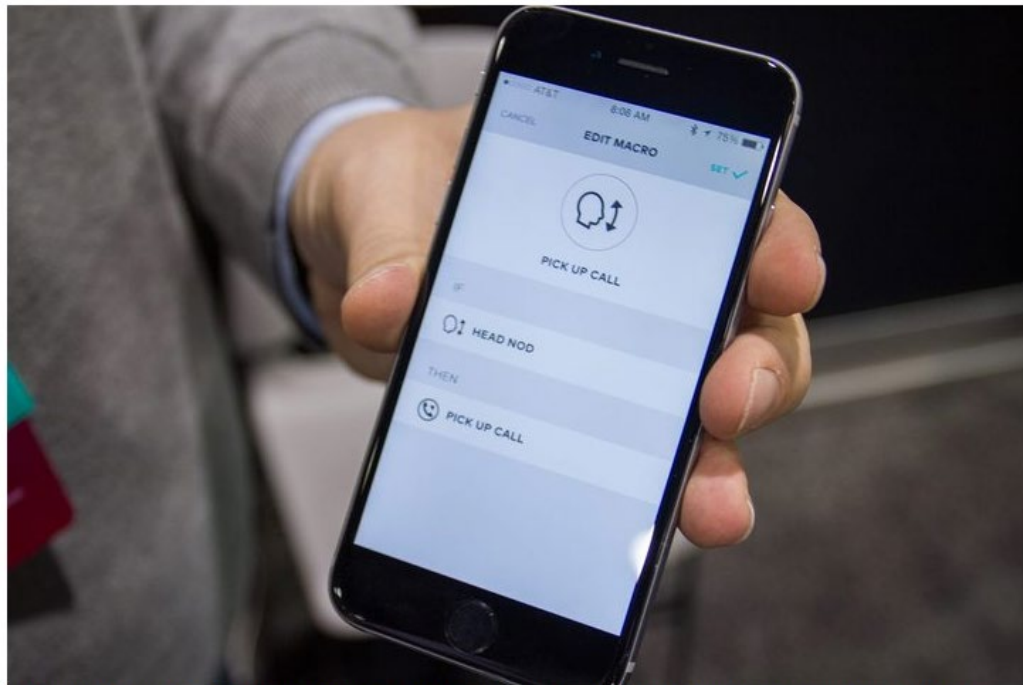
features and coextensive with them), and at least some of the praise that The Dash received was due to claimed features of the product.

b. The Industry Specifically Praised Patent Owner's First Commercial Embodiment of the '385 Patent

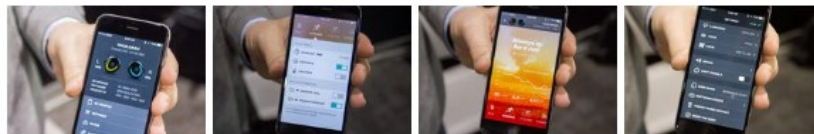
Bragi's The Dash received industry-wide praise. For example, on January 5, 2015, Engadget published an article regarding Bragi's "audacious Kickstarter campaign promis[ing] a sports headphone like nothing we'd ever seen before." Ex-2011. The article reference's Bragi's spec sheet which "read like a ridiculous wish list" including touch control, two separate ear buds that connect to each other wireless, onboard storage, long battery life, and a self-contained media player. *Id.* The article also boasted the software functionality, and suggested a long-felt but unmet need by quoting Bragi's CEO, Nikolaj Hviid, recantation of the many attempts by big industry players to dissuade him from pursuing The Dash because it "simply wasn't possible." *Id.*

A few days later, The Verge published an article entitled "The First Truly Wireless Earbuds Are Here, And They're Awesome," wherein the author praised The Dash as the "best headphones [he] tried." Ex-2012. The article also praises additional features, including fitness sensors, a built-in accelerometer, charging case, and comfortable design. *Id.* Also, on January 8, 2015, DC Rainmaker published an article which specifically praises the claimed features of the '385 Patent. Ex-2019.

This article notes that with audio devices, it's “the software that makes or breaks things.” *Id.* The author notes that he impressed with “how polished the app looks at the time.” *Id.* Notably, this article praising Bragi's software includes photos of the application, which include those found in the '385 Patent.



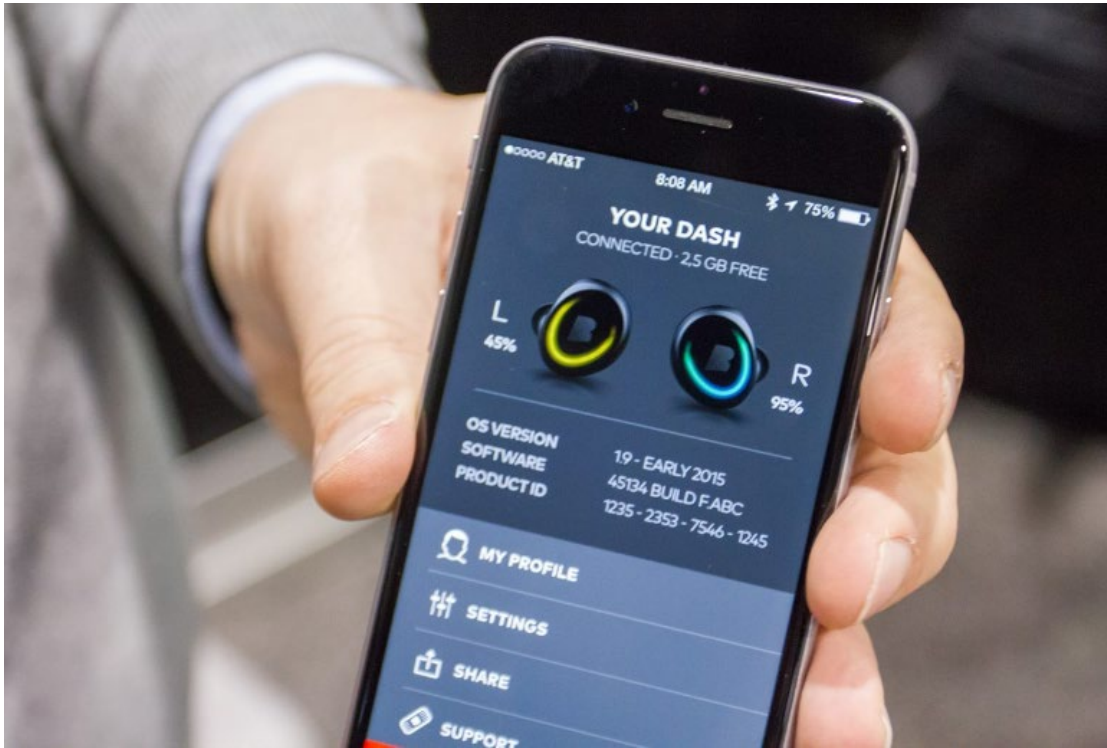
These macros would be customizable from the app itself. They're expected to be available within a few months from release. As an update, here's a few more shots from the app I went back and got:



Overall I was impressed with how polished the app looks at this point at time.

Ex-2019.

Looking, for example, at the first independent claim of the '385 Patent, this article praises each of the claimed features. Zooming in on one of the photos the author was impressed with, each of the elements of Claim 1 are present.



Ex-2019.

In particular, pictured is “a software application for executing on a computing device having a display associated therewith.” This software application is “configured to display one or more screen displays on a display of the computing device” 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” 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.” = Shown in the figure

above are a visual representation of the at least one wireless earpieces, and the battery charge percentage under each ear piece is indicative of a function or property of the at least one wireless earpiece. This praise of The Dash was specifically due to claimed features of the product.

Bragi received further industry praise for The Dash, the first commercial embodiment of the '385 Patent, receiving **BEST OF CES 2015** in both wearables and health & fitness categories. Ex-2013.

Not only are these articles indicative of the praise that the claimed features of The Dash received, but buyers themselves praised the claimed features of The Dash. On February 11, 2015, Bragi published a Kickstarter Update entitled “Bragi Update – The App Preview, The Charger, The SDK, Bragi Funding and Chinese New Year.” Ex-2022. This video shows Martin Steiner, whose declaration is submitted herewith as Ex-2017, demonstrating the app. Behind Martin can be seen renderings of the application, including those drawings found in the '385 Patent. Ex-2018. There was also a download link to a clickable demo which allowed users to click through the app and see the claimed features demonstrated. *Id.* The post is rife with comments from backers of the product expressing excitement over the software application in particular. Ex-2022. Users expressed sentiments along the lines of “Cool first look at the app! Excited!!!” and “The app looks good so far from what we can see and use in the sub menus...I’m really excited to get these” and “I like the app so far, the

look is fresh and simple” and “the app looks fantastic.” *Id.* There are 111 backer comments on the post, many of which express excitement over the use and look of the app.

Engadget published a follow up article to its January 5, 2015 publication once The Dash headphones became commercially available. Ex-2015. The article rains praise onto the headphones, including that they comprised “the slicked gadget set-up [the author had] ever experienced” and were “easily the most ambitious headphones [the author had] ever seen.” *Id.* The Verge similarly published a follow-up approximately one year after its first publication, referring to The Dash as “the wireless earbuds of my dreams.” Ex-2016.

This industry praise strongly suggests the nonobviousness of the '385 Patent's claimed technology. *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1334 (Fed. Cir. 2016) (“Evidence that the industry praised a claimed invention or a product which embodies the patent claims weighs against an assertion that the same claim would have been obvious. Industry participants, especially competitors, are not likely to praise an obvious advance over the known art. Thus, if there is evidence of industry praise in the record, it weighs in favor of the nonobviousness of the claimed invention.”); *See also Institut Pasteur & Universite Pierre Et Marie Curie v. Focarino*, 738 F.3d 1337, 1347 (Fed. Cir. 2013) (“[I]ndustry praise ... provides probative and cogent evidence that one of ordinary skill in the art would not have

reasonably expected [the claimed invention].”). Further, as explained above, some of the praise was specifically directed to the claimed features of the ’385 Patent.

c. Others Tried and Failed to Produce a Competing Product

Petitioner relies on Hensen-Patent, Hensen-Video, and Hensen-Kickstarter throughout its Petition. Each of these references allegedly describe a commercial embodiment of the FreeWavz. As discussed above, the latest update to the FreeWavz (Hensen-Kickstarter) was on August 8, 2019. The FreeWavz Team posted news of struggle, stating that:

Unfortunately we do not have the best news to share as we are struggling to solve our issue with accurate wireless pulseox measurements. Our team is still hard at work in overcoming this problem. As mentioned in our previous update, FreeWavz is looking into releasing an alternative model that will have all features including: true wireless ear-to-ear connectivity, a comfortable natural fit, heart rate reading, a mobile app with the ability to adjust sound levels, and a superior sound quality overall. The only feature missing will be the oxygen saturation reading.”

Ex-2024. Since this update, the Kickstarter page for the FreeWavz has been inactive. Additionally, the corresponding FreeWavz website is no longer active. There is also no social media presence, products available for sale, or other evidence that this product went anywhere beyond its failed development.

Not only did the Kickstarter fail to produce earpieces with oxygen saturation monitoring, but FreeWavz failed to produce any viable product at all. Petitioner's own alleged prior art is indicative of other's failure to produce a product that could compete with The Dash earbuds. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1054 (Fed. Cir. 1988) (“[F]ailure of others to provide a feasible solution to a long standing problem is probative of nonobviousness.”).

Each of these factors weighs heavily in favor of nonobviousness.

VI. CONCLUSION

For the foregoing reasons, Petitioner has failed to prove by a preponderance of the evidence that any of the Challenged Claims are unpatentable. Patent Owner respectfully requests that the Board confirm the patentability of the Challenged Claims and enter judgment against Petitioner.

Date: April 9, 2024

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S RESPONSE** specified in 37 C.F.R. § 42.24 have 10,854 words, in compliance with the 14,000 word limit set forth in 37 C.F.R. § 42.24(b)(1). This word count was prepared using Microsoft Word 2010.

Date: April 9, 2024

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CERTIFICATION OF SERVICE

The undersigned hereby certifies that the above-captioned **PATENT OWNER'S RESPONSE** is being served on counsel for petitioner via electronic mail on, in its entirety on the following counsel of record for Petitioner:

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