

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 PRELIMINARY RESPONSE

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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

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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 Januray 7, 2016

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”) submits this preliminary response in accordance with 35 U.S.C. § 313 and 37 C.F.R. § 42.107, responding 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
3	Hensen-Patent, Hensen-Video, and Lee ⁴	8

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).

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

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 met its burden because all six of Petitioner’s grounds are deficient for the same reason. Specifically, the disclosures from Hensen-Patent, which form the basis for all six of the asserted Grounds, are not prior art under 35 U.S.C. § 102(b)(2)(B) because Patent Owner publicly disclosed the same subject matter first.

As such, and for the reasons explained in further detail below, Petitioner has not shown a reasonable likelihood that *any* Challenged Claim is unpatentable, so institution should be denied. 35 U.S.C. § 314(a) (“The Director *may not authorize an inter partes review to be instituted unless* the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that *there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.*”) (emphasis added).

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

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.⁶ These options all included either wired over-ear headphones or wired in-ear earpieces that were physically connected to a playback device that was worn or held by the user.

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

⁶ 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.

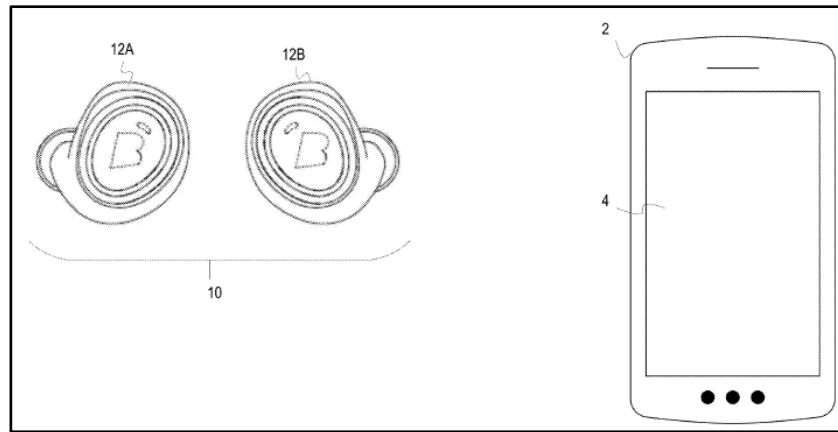
certain activities, such as exercise, because the wires interfered with the user's movements. Additionally, headphones that went over or around the ear were uncomfortable and might become less secure to the user's ear during movement, also interfering with an active user's enjoyment of the device.

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-1001, Fig. 1.

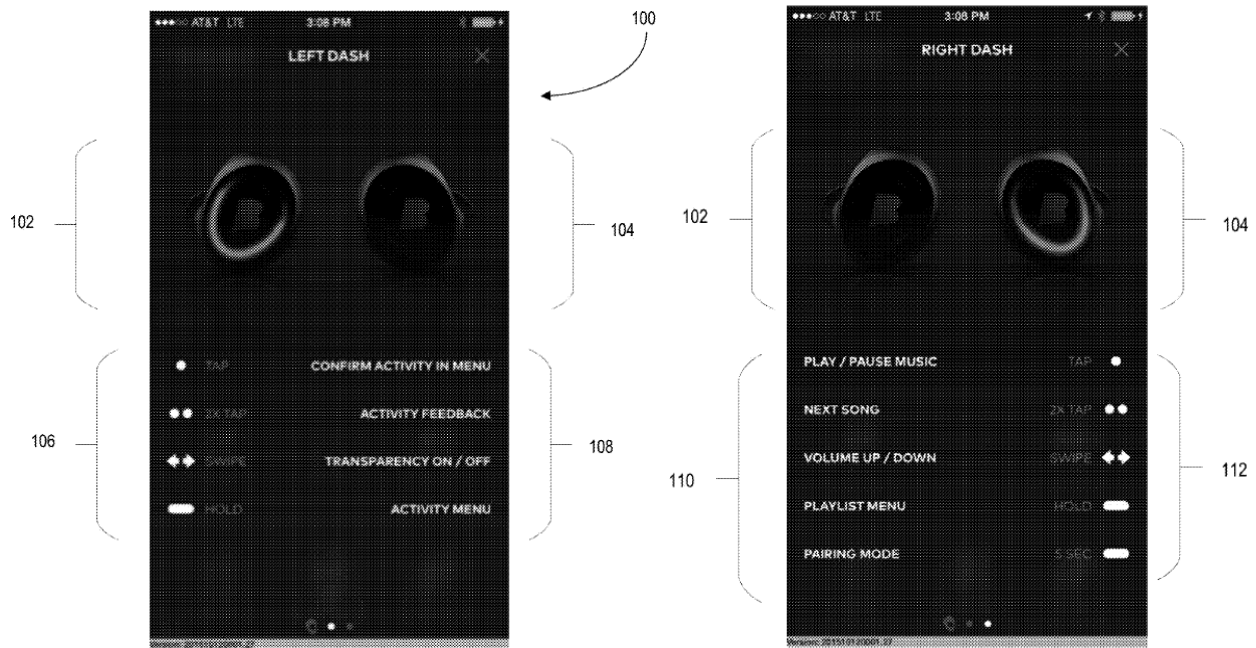
Further, the user interface software application, reproduced below, displays various information about the earpiece(s) status and provides the user with capabilities such as activity monitoring, device settings management, and configurable gesture controls for regulating audio playback through the earpieces 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

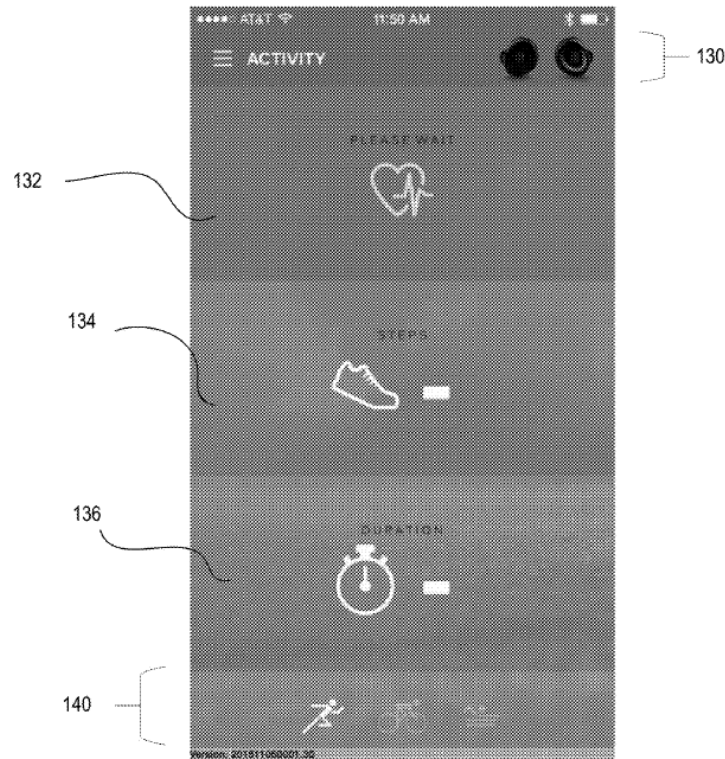
enhanced control options overcome the cumbersome operational limitations of the prior art.



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.

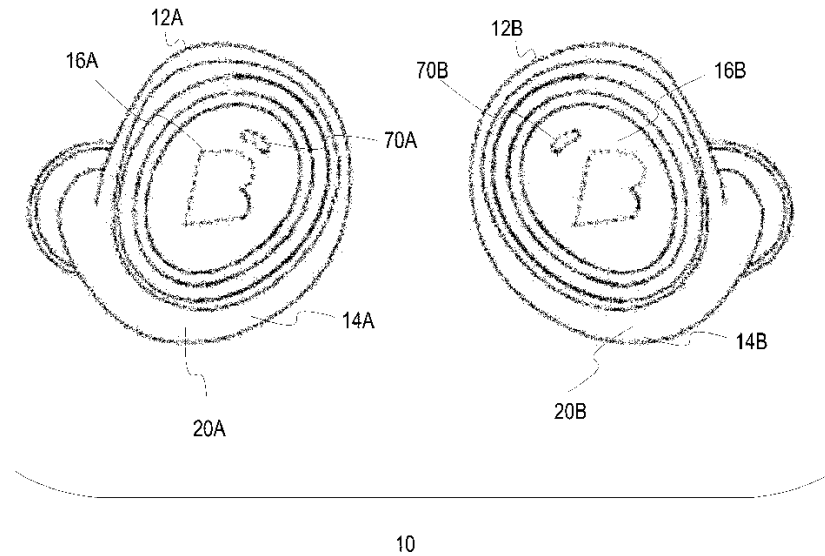


FIG. 2

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.

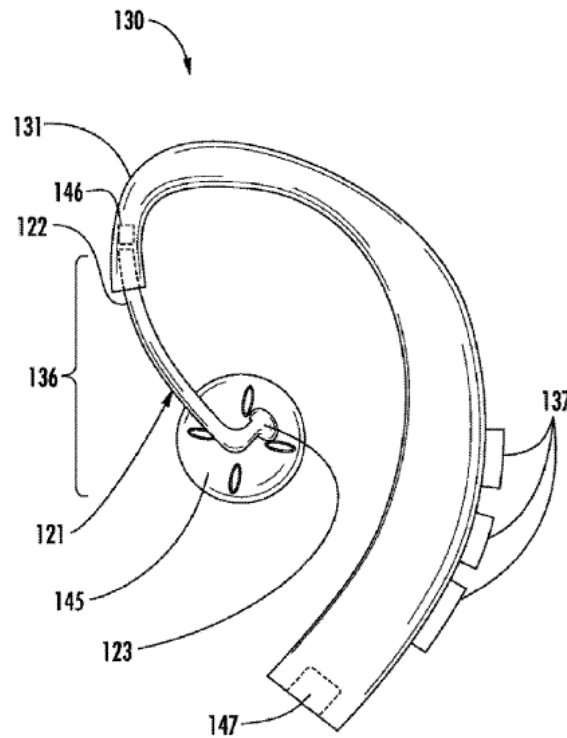


FIG. 10

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. 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. As with Hensen-Patent, Hensen-Video allegedly discloses a behind the ear housing and is arcuate in shape.

3. LG-Manual

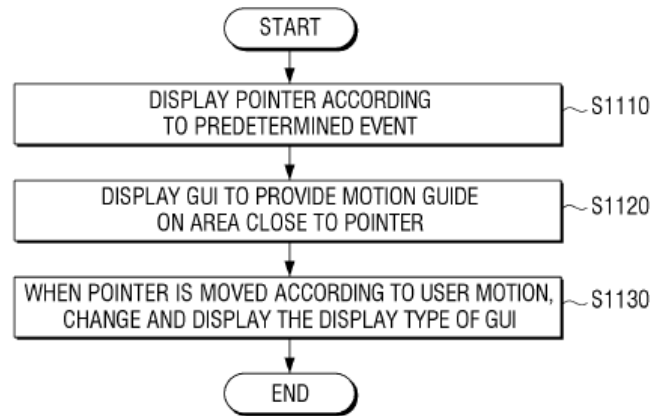
LG-Manual is allegedly a user manual for the LG Heart Rate Headphones. Ex-1005. The LG-Manual allegedly discloses multiple components including an over-the-ear earphones, USB cable for charging, cable adjuster for adjusting the wired earphones, and a main set that can be clipped to a user's belt or person. *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].

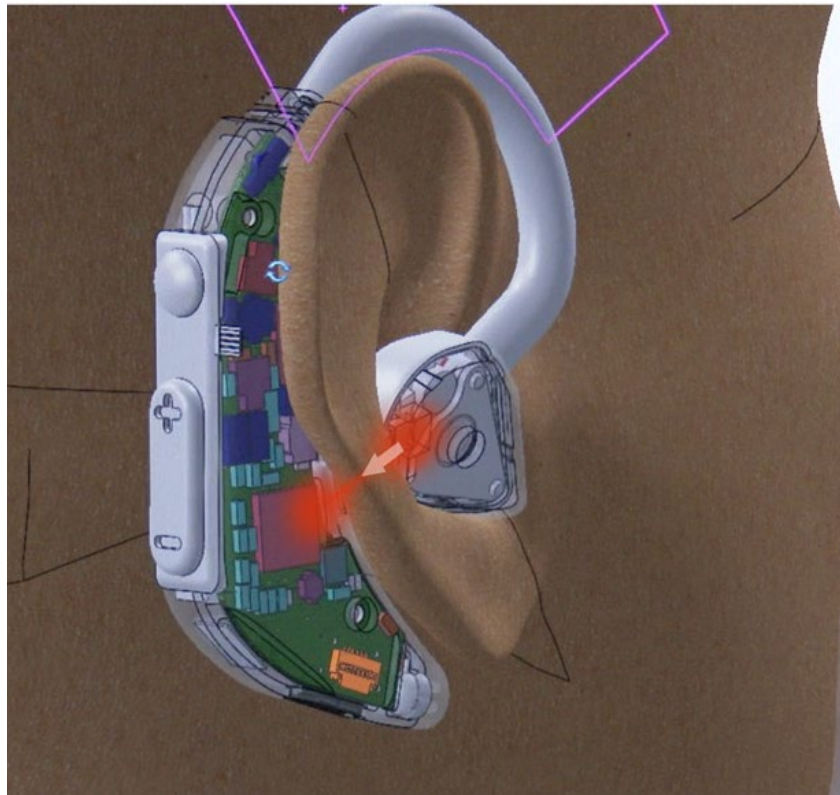
FIG. 11



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. ARGUMENT

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

For each of Grounds 1-6, Petitioner alleges that the Challenged Claims are obvious over the combination of Hensen-Patent and the other prior art references discussed above. As noted previously, disclosure from Hensen-Patent is relied on for each and every ground asserted in the Petition. However, fatal to the Petition is the fact that these relied-upon Hensen-Patent disclosures are not prior art to the Challenged Claims.

Petitioner relies on disclosures from Hensen-Patent as § 102(a)(2) prior art. Hensen-Patent was effectively filed on October 8, 2015. Ex-1003. Petitioner expressly noted in the Petition that they were not relying on the provisional application to which Hensen-Patent claims priority, nor the parent application from which Hensen-Patent continues-in-part. *Id.*, Footnote 2.

However, § 102(b) provides various exceptions to disclosures—like those from Hensen-Patent—that would otherwise be prior art under § 102(a)(2). This

exception applies here because Hensen-Patent was filed (and thus its disclosure became available as prior art) *after* Patent Owner publicly disclosed the *same* subject matter in its Kickstarter for The Dash product no later than September 10, 2015].

Section 102(b)(2)(B) provides:

A disclosure shall not be prior art to a claimed invention under subsection (a)(2) if . . . (B) the subject matter disclosed, had, before such subject matter was effectively filed under subsection (a)(2), 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)(2)(B). The Manual of Patent Examining Procedure further explains that the exception of 102(b)(2)(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-Patent No Later than 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, no later than September 10, 2015, which pre-dates the October 8, 2015 effective filing date of Hensen-Patent. 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 effective filing date of Hensen-Patent. 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 June 24, 2015, Bragi published a video demonstrating the functionality of the software application. Ex-2006. As an additional example, on September 10, 2015, Bragi posted a completed product unboxing for The Dash system implementing the '385 Patent's inventions. Ex-2007.

Because Bragi's September 10, 2015 Dash Kickstarter disclosure does not predate the November 13, 2015 priority date of the '385 Patent by more than one year, it is not prior art under § 102(a)(1). However, because this September 10, 2015 disclosure predates the October 8, 2015 effective filing date of Hensen-Patent, and

discloses the same subject matter cited in the Petition and allegedly disclosed in Hensen-Patent, the cited Hensen-Patent disclosures are *not* prior art under § 102(b)(2)(B).⁷

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

As provided in more detail below, Bragi’s public disclosures between January 5 and September 10, 2015 of The Dash wireless earbuds comprised the same subject matter cited in the Petition and allegedly disclosed in Hensen-Patent.

a. Limitation [1Preamble] “A system comprising”

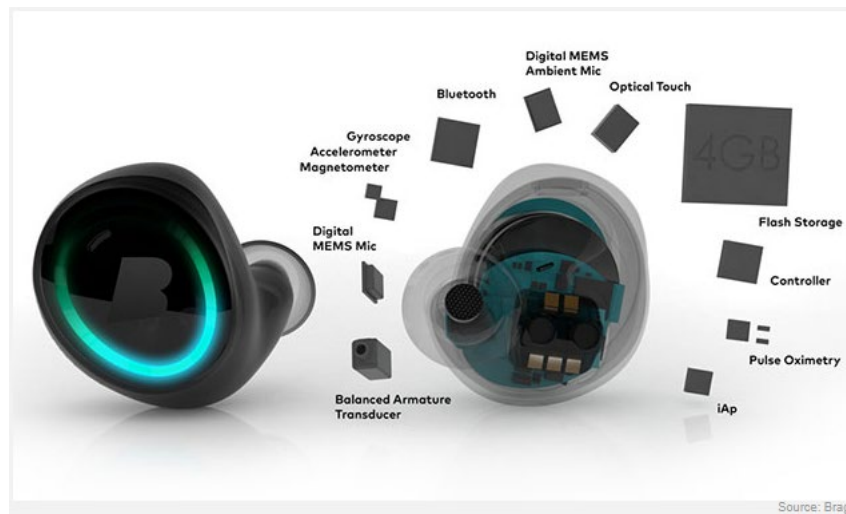
Hensen-Patent is the sole reference relied on for this limitation. Petitioners allege that Hensen-Patent “discloses a system for interacting with wireless earpieces,” Petition, 24, and claims that Hensen-Patent discloses a system in which “the remote control device sends commands to the earpieces and displays information received from the earpieces.” Petition, 25 (citing Hensen-Patent Fig. 1, 8:13-23.)

⁷ Patent Owner does not concede that Hensen-Patent discloses any element of the Challenged Claims and reserves the right to contest Petitioner’s claims regarding Hensen-Patent’s alleged disclosure.

To the extent the preamble is limiting, on January 6, 2015, prior to the October 8, 2015 effective filing date of Hensen-Patent, Bragi disclosed The Dash wireless earbuds system, via an industry showcase article with Bloomberg Business Week, titled “Fitness Tracker or Bionic Ear? The Dash Wireless Earbuds Might Be Both.” Ex-2005. Thus, the portions of Hensen-Patent relied upon for this limitation are not prior art, Petitioner have failed to meet their burden, and institution should be denied. *See* 35 U.S.C. § 102(b)(2)(B).

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

Petitioners allege that “Hensen-Patent discloses at least one wireless earpiece...comprising an earpiece housing...and a wireless transceiver...disposed within the earpiece housing.” Petition, 26. However, in the Bloomberg article discussed in Section III.A.2(1) 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.



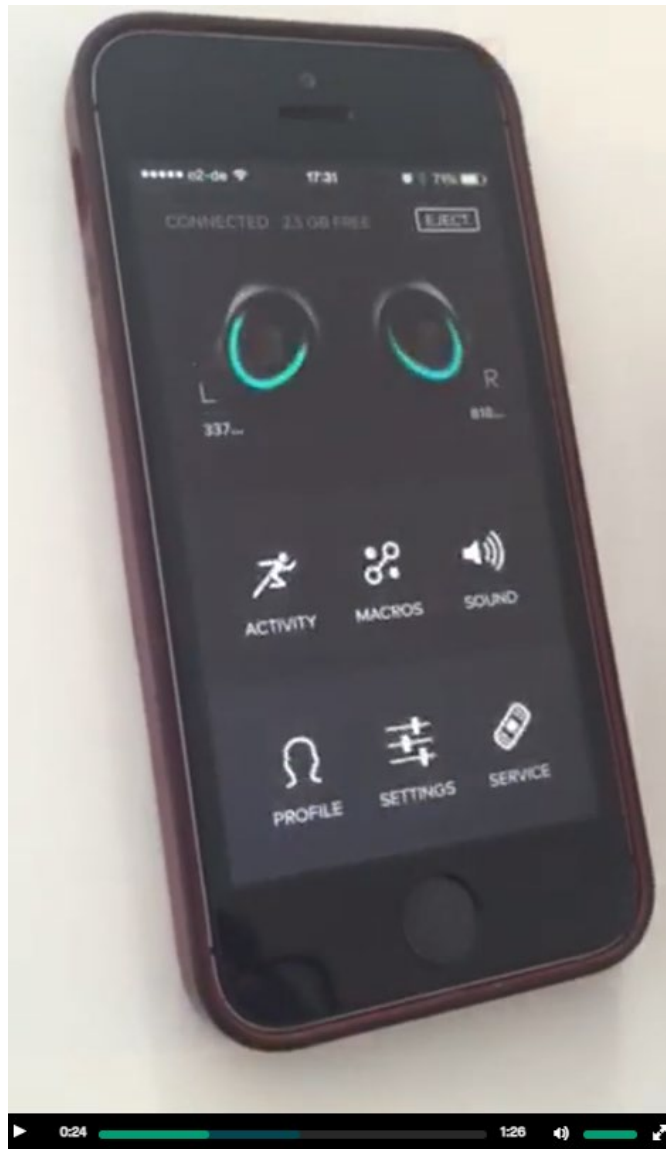
Ex-2002.

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 effective filing date of Hensen-patent, 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].

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

For limitation [1B], Petitioners allege that Hensen-Patent discloses a “remote control unit” with a “display that may display...information about the stereo audio headphones, for example, volume and/or battery power remaining.” Petition, 31. However, Bragi publicly disclosed this same subject matter prior to the effective filing date of Hensen-Patent. For 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 BRAGI App. 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 displays the software application having a display associated therewith as claimed in limitation [1B].



Ex-2006.

- 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”**

Petitioners allege that Hensen-Patent discloses a remote control device that “displays information associated with wireless earpieces.” Petition, 47. However, as

explained above with reference to limitation [1B], Bragi had, by the effective filing date of Hensen-Patent, disclosed a software application which provides a user interface. *See supra* Section III.A.2.(c). As shown in the figured reproduced above, this user interface provides multiple options which allow a user to interact with the wireless earpiece(s). Ex-2006.

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

Petitioners allege that Hensen-Patent discloses “a wireless earpiece comprising a physiological sensor.” Petition, 54. However, prior to the effective filing date of Hensen-Patent, Bragi publicly disclosed that its 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.

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

Petitioners allege 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, 60. As explained above with regard to Claim 2, Bragi publicly disclosed this claimed subject matter before the effective filing date of Hensen-Patent. *See supra* Section III.A.2.(e).

Petitioners further allege 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, 61. However, on June 5, 2015, prior to the effective filing date of Hensen-Patent, 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.

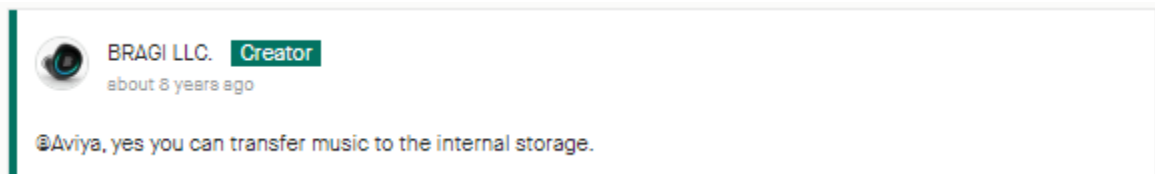
In these field test videos, The Dash earbuds are visibly seen in the athlete's ears while he completes various physical activities.

- g. 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-Patent. *See supra* Section III.A.2.(f).

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

Petitioners allege that “Hensen-Patent discloses wireless earpieces comprising onboard storage...for storing audio files.” Petition, 64. However, on June 24, 2015, prior to the effective filing date of Hensen-Patent, Bragi publicly disclosed this subject matter in the Kickstarter update referenced above. *See supra* Section III.A.2.(c). In particular, in Bragi's answer to a user question, Bragi publicly disclosed that “you can transfer music to the internal storage.”



Ex-2006.

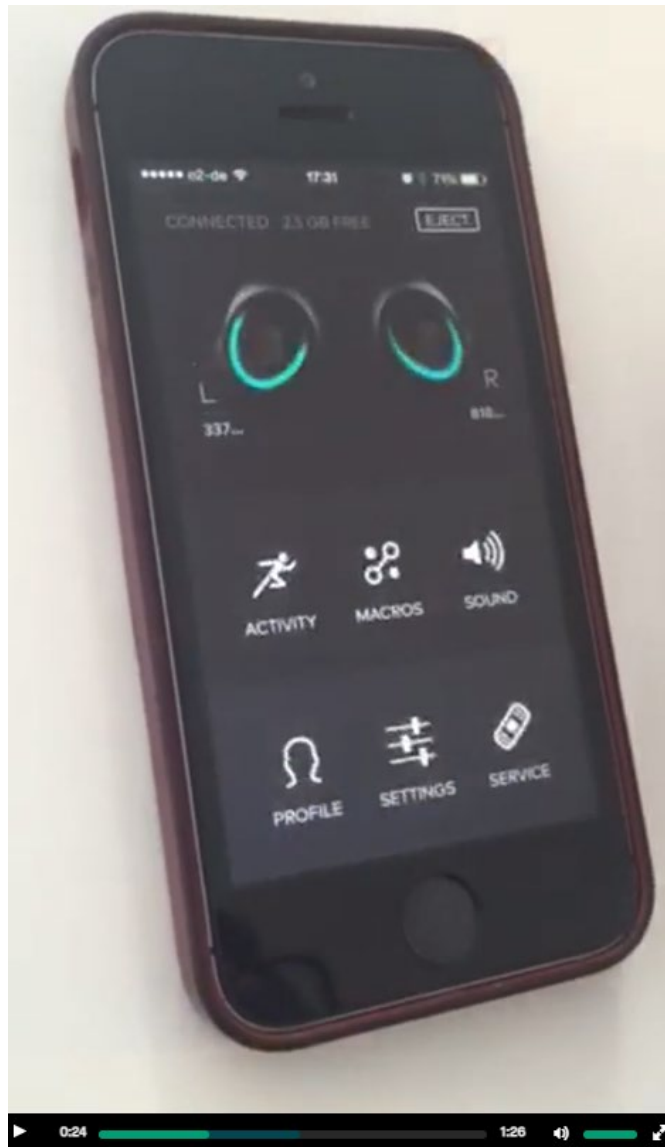
- i. **Claim 10: “The system of claim 1 wherein the at least one wireless ear piece is configured to store at least one playlist of audio files.”**

As discussed above, Bragi publicly disclosed the ability of the ear piece to store audio files prior to the effective filing date of Hensen-Patent. *See supra* Section III.A.2.(h).

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

Petitioners allege that Hensen-Patent discloses that the device is a mobile device. Petition, 71. However, as discussed above, before the effective filing date of Hensen-Patent, 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 App. Ex-2006.

In the video, Mr. Steiner shows his mobile device screen with the BRAGI App pulled up. *Id.*, at 24 seconds.



Ex-2006.

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

Petitioners incorporate their arguments for limitation [1Preamble], relying on the same portions of Hensen-Patent in support. Thus, for the same reason discussed in § III.A.2.(a), above, the relied-upon portions of Hensen-Patent are not prior art,

Petitioner have failed to meet their burden, and institution should be denied. *See* 35 U.S.C. § 102(b)(2)(B).

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”

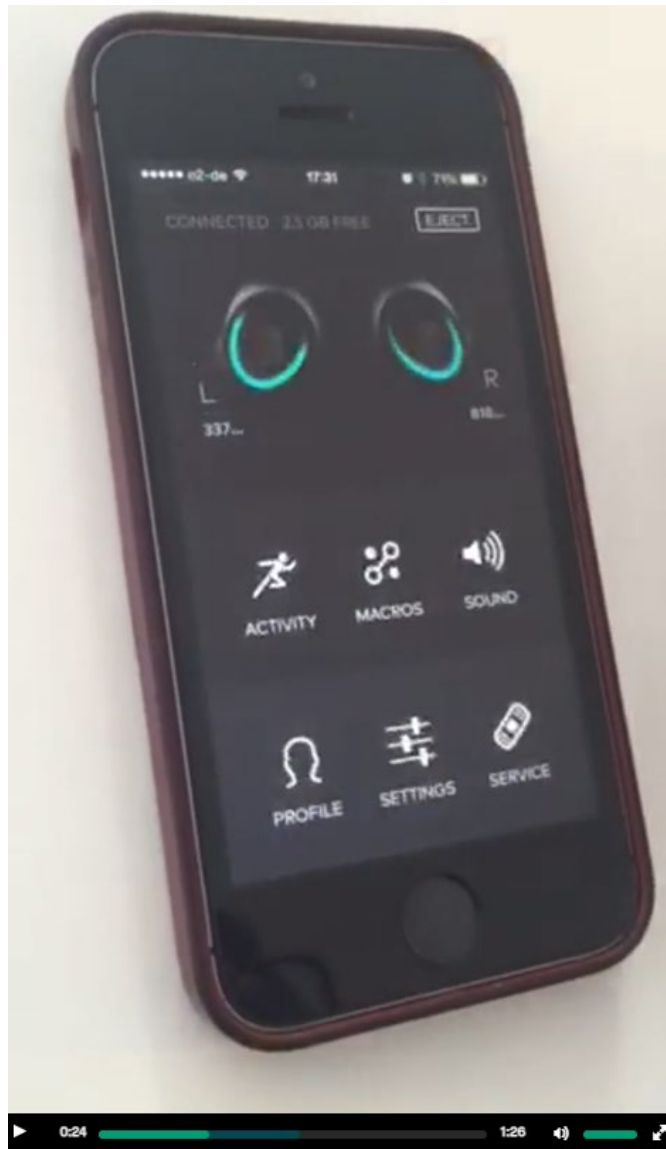
Petitioners incorporate their arguments for limitation [1B], relying on the same portions of Hensen-Patent in support. Thus, for the same reason discussed in § III.A.2.(c), above, the relied-upon portions of Hensen-Patent are not prior art, Petitioner have failed to meet their burden, and institution should be denied. *See* 35 U.S.C. § 102(b)(2)(B).

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

Petitioners incorporate their arguments for limitation [1D], relying on the same portions of Hensen-Patent in support. Thus, for the same reason discussed in § III.A.2.(d), above, the relied-upon portions of Hensen-Patent are not prior art, Petitioner have failed to meet their burden, and institution should be denied. *See* 35 U.S.C. § 102(b)(2)(B).

n. Limitation [13E]: “performing an action using at least one of the wireless ear pieces in response to receiving the data”

Petitioner alleges that “Hensen-Patent discloses performing an action...using the wireless earpieces...in response to receiving the data.” Petition, 76. But Bragi publicly disclosed this subject matter before the effective filing date of Hensen-Patent. For example, in its June 24, 2015 Kickstarter update, Bragi published a video of the ’385 inventor, Martin Steiner, demonstrating the functionality of the BRAGI App. Ex-2006. In the video, Mr. Steiner shows his mobile device screen with the BRAGI App pulled up. *Id.*, at 24 seconds.



Ex-2006.

This application display shows that a user may perform an action using the earbuds in a variety of ways, including, for example, by selecting sound to adjust the volume.

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

Petitioners incorporate their arguments for limitation [1Preamble], relying on the same portions of Hensen-Patent in support. Thus, for the same reason discussed in § III.A.2.(a), above, the relied-upon portions of Hensen-Patent are not prior art, Petitioner have failed to meet their burden, and institution should be denied. *See* 35 U.S.C. § 102(b)(2)(B).

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”

Petitioners incorporate their arguments for limitation [1B], relying on the same portions of Hensen-Patent in support. Thus, for the same reason discussed in § III.A.2.(c), above, the relied-upon portions of Hensen-Patent are not prior art, Petitioner have failed to meet their burden, and institution should be denied. *See* 35 U.S.C. § 102(b)(2)(B).

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

Petitioners incorporate their arguments for limitation [1D], relying on the same portions of Hensen-Patent in support. Thus, for the same reason discussed in § III.A.2.(d), above, the relied-upon portions of Hensen-Patent are not prior art,

Petitioner have failed to meet their burden, and institution should be denied. *See* 35 U.S.C. § 102(b)(2)(B).

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

Petitioners incorporate their arguments for limitation [1D], relying on the same portions of Hensen-Patent in support. Thus, for the same reason discussed in § III.A.2.(d), above, the relied-upon portions of Hensen-Patent are not prior art, Petitioner have failed to meet their burden, and institution should be denied. *See* 35 U.S.C. § 102(b)(2)(B).

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

Petitioners allege that Hensen-Patent 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. Therefore, the relied-upon portions of Hensen-Patent are not prior art, Petitioner have failed to meet their burden, and institution should be denied. *See* 35 U.S.C. § 102(b)(2)(B).

B. Objective Evidence Confirms the Nonobviousness of the Challenged Claims

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. 2011-2016. 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).

1. The Industry 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 batter 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.* Nevertheless, the article author confirms The Dash was

possible and memorializes “the first time the working product has been seen outside of the company.” *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.*

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.

On October 29, 2015, Wired published an article entitled “Bragi’s in-ear assistant wants to make you healthier and happier.” Ex-2014. The article praised many of The Dash’s functionalities, including “ambitiously strong audio capabilities,” the ability to “collect, clean, sort and interpret data from a cluster of sensors” and “monitor body vital signs” and, importantly, the fact that The Dash will be “one of the very few IOT devices that doesn’t have to be connected to the internet.” *Id.* This publication demonstrates the cutting edge advancements of The Dash, embodying the '385 Patent’s claimed invention.

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 after 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 author concluded that if his first few moments with the product were indicative, the wait for the device was worth it. *Id.*

The Verge similar 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].”).

a. The Dash Embodies the '385 Claimed Features

A nexus between the objective evidence and a novel feature of the claimed invention is presumptively attributed to the patented invention where the product is coextensive with the claimed features. *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008) (citation omitted). Such is the case here with respect to the claimed featured mapped to Hensen-Patent.

As explained above with reference to the disclosures of Bragi regarding the Dash as they related to invalidating the Hensen-Patent, Bragi’s public disclosure through its Kickstarter campaign and corresponding videos marketing and demonstrating The Dash, the earphones embody at least these limitations directed to the '385 claimed features. *See supra* Section III.A.2. Thus, the objective evidence of nonobviousness with respect to The Dash is directly applicable to the claims of the '385 Patent.

2. 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-1007. Since this update sharing the struggle in the product development, 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 prior art references thus demonstrate 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.

C. Petitioner's Expert Declaration Should Not be Considered

“Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.” 37 C.F.R. § 42.65(a). Here, the Declaration of Dr. Anthony is almost entirely a word-for-word recitation of the Petition, except for the Introduction, Qualifications Background, Materials Considered, and Legal Standards sections. *See* Ex. 1002, at 10-109. Dr. Anthony repeats almost verbatim the words of the Petition.

Because 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, 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.).

IV. CONCLUSION

Petitioner has not met its burden to provide a reasonable likelihood that one or more Challenged Claims of the '385 Patent are unpatentable in view of the cited Grounds. Bragi thus respectfully requests that the Board deny institution.

Date: August 23, 2023

Respectfully submitted,

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CERTIFICATION OF WORD COUNT

The undersigned hereby certifies that the portions of the above-captioned **PATENT OWNER'S PRELIMINARY RESPONSE** specified in 37 C.F.R. § 42.24 have 6,399 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: August 23, 2023

Respectfully submitted,

/s/ Richard A. Kamprath

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CERTIFICATION OF SERVICE

The undersigned hereby certifies that the above-captioned **PATENT OWNER'S PRELIMINARY 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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