

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS, INC.,
Petitioner,

v.

IMMERSION CORPORATION,
Patent Owner.

IPR2023-00944
Patent 10,269,222 B2

Before PATRICK R. SCANLON, CHRISTOPHER L. OGDEN, and
IFTIKHAR AHMED, *Administrative Patent Judges*.

AHMED, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Petitioner, Meta Platforms, Inc., filed a Petition for *inter partes* review of claims 1, 2, 5, 7, 10, 11, 15, 17, 18, 21, and 23 of U.S. Patent No. 10,269,222 B2 (Ex. 1001, “the ’222 patent”). Paper 2 (“Pet.”). Patent Owner, Immersion Corporation, filed a Preliminary Response. Paper 8 (“Prelim. Resp.”).

Under 35 U.S.C. § 314 and 37 C.F.R. § 42.4(a), we have authority to institute an *inter partes* review if “the information presented in the petition . . . and any response . . . 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.” 35 U.S.C. § 314(a). After considering the parties’ briefing and the evidence of record, we conclude the information presented shows there is a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of at least one of the challenged claims of the ’222 patent. Accordingly, we institute an *inter partes* review as to the challenged claims on the unpatentability ground asserted in the Petition.

II. BACKGROUND

A. Real Parties in Interest

Petitioner identifies itself, Meta Platforms, Inc., as the real party in interest. Pet. 1. Patent Owner identifies itself, Immersion Corporation, as the real party in interest. Paper 5, 1.

B. Related Matters

The parties identify the following proceeding as a related matter involving the ’222 patent: *Immersion Corporation v. Meta Platforms, Inc.*, No. 6:22-cv-00541-ADA (W.D. Tex.). Pet. 1; Paper 5, 1.

C. Overview of the '222 Patent

The '222 patent “relates to a system with a wearable device, a second device, and a haptic output device that is configured to generate feedback based on an event that occurs in an environment related to the wearable device and/or the second device.” Ex. 1001, 1:14–18. According to the '222 patent, augmented reality (“AR”) devices provide for the concurrent display of virtual objects in virtual space with physical objects in physical space, but “the ability to interact with an augmented virtual environment is limited,” particularly, with respect to “[p]roviding useful feedback to the user.” *Id.* at 1:22–35. The '222 patent discloses a wearable device that includes a processor for generating a control signal representative of an environmental event so as “to provide haptic feedback based on the generated control signal.” *Id.* at 1:44–51.

Figure 5 of the '222 patent is reproduced below.

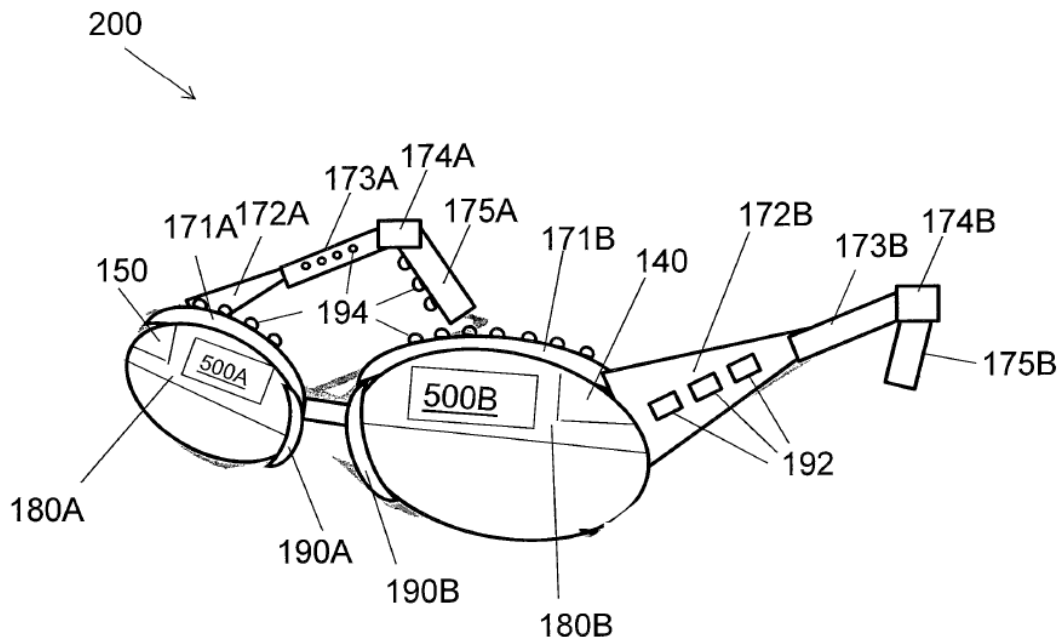


Figure 5 illustrates a wearable AR device in the shape of eyewear configured to display AR environment 500A and 500B via lenses 180A and 180B of the

eyewear. *Id.* at 6:37–39, 19:44–49. Figure 2 of the '222 patent is reproduced below.

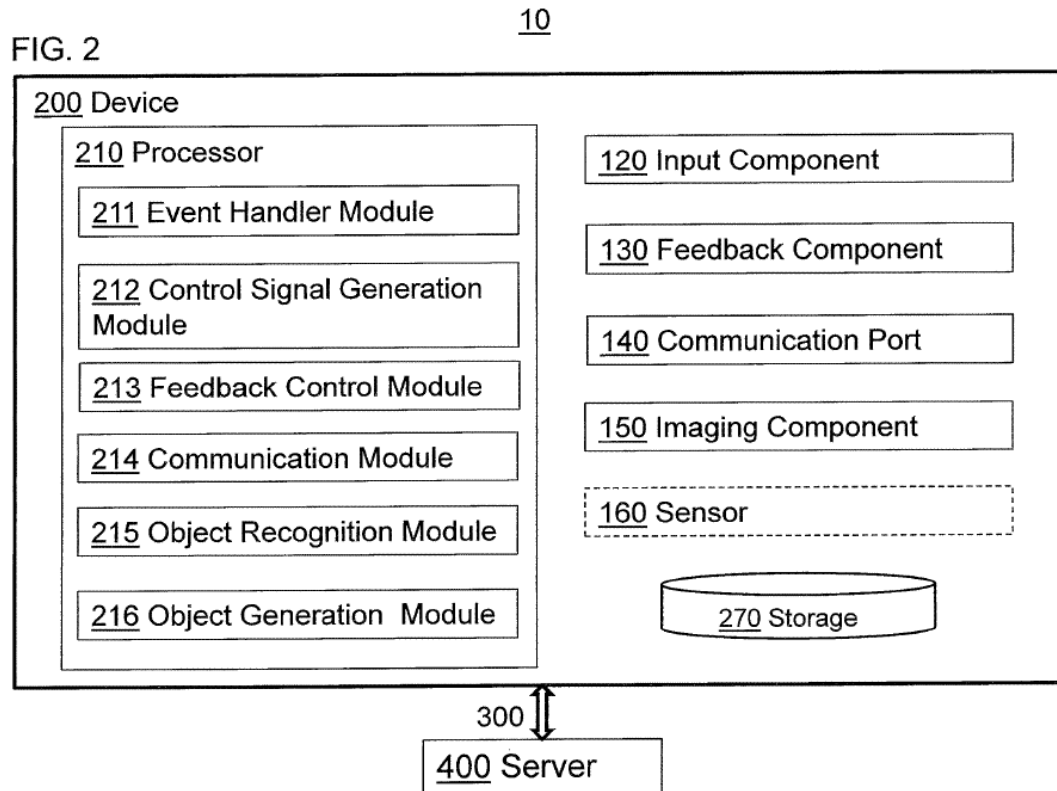


Figure 2 shows a block diagram of an exemplary wearable AR device configured to provide feedback. *Id.* at 6:26–28. Wearable AR device 200 includes processor 210 for generating an AR space coincident with a physical space, such that it may “recognize at least one physical object in the physical space and augment the at least one physical object with one or more virtual objects in the AR space.” *Id.* at 13:64–14:2. Specifically, “object recognition module 215 may be configured to recognize physical objects” and “object generation module 216 may be configured to generate virtual objects.” *Id.* at 15:2–5.

Further, processor 210 may “determine an event within the AR environment and generate a control signal representative of that event” so as

to “cause feedback to be generated at the wearable AR device 200.” *Id.* at 14:2–7. In particular, event handler module 211 may detect that an event has occurred in the AR environment, and control signal generation module 212 may generate a control signal in response. *Id.* at 14:57–62. Upon receiving the control signal, feedback control module 213 may cause one or more feedback components 130, such as a haptic output device, to provide feedback. *Id.* at 14:62–64; *see* 18:63–19:26.

Wearable AR device 200 includes storage 270 for storing data allowing it to recognize events, for example, “an indication of at least one physical object within a predetermined proximity of the wearable AR device 200.” *Id.* at 14:19–40. In addition, communication port 140 on wearable AR device 200 allows it to communicate with server 400. *Id.* at 14:11–14. In cases when wearable AR device 200 receives information that “is not associated with an event stored in the storage 270, the event handler 211 may transmit event data including the received information to the server 400 such that the server 400 can perform event handling.” *Id.* at 16:10–14.

D. Illustrative Claims

Petitioner challenges claims 1, 2, 5, 7, 10, 11, 15, 17, 18, 21, and 23 of the '222 patent, of which claims 1, 10, and 17 are independent. Claims 1 and 10 are illustrative of the claimed subject matter and are reproduced below, with formatting and bracketed material added:

1. A method comprising:
 - [1a] a wearable device;
 - [1b] a second device remote from and in communication with the wearable device;
 - [1c] a processor configured to generate at least a first control signal and a second control signal representative of a first event and a second event, respectively, occurring in an

environment related to the wearable device and/or the second device, the first event and the second event being different events; and;

[1d] a haptic output device configured to provide a first haptic feedback signal and a second haptic feedback signal based on the first control signal and the second control signal, respectively.

Ex. 1001, 28:29–42 (bracketed designations added (*see* Pet. 9–24)).

10. A system comprising:

[10a] an augmented reality device configured to generate an augmented reality environment comprising an augmented reality space and a physical space, the augmented reality device comprising

[10b] a processor configured to detect a plurality of events that occur in the environment related to a wearable device, the processor configured to generate the augmented reality space coincident with the physical space,

[10b1] recognize at least one physical object in the physical space and augment the at least one physical object with one or more virtual objects in the augmented reality space, and

[10b2] determine an event associated with the augmented reality environment, and

[10b3] generate a control signal based on the determined event;

[10c] the wearable device remote from and in communication with the augmented reality device;

[10d] a remote device remote from and in communication with the wearable device and the augmented reality device; and

[10e] a haptic output device configured to provide a plurality of haptic feedback signals based on the control signal.

Ex. 1001, 29:20–44 (bracketed designations added (*see* Pet. 35–51)).

E. Asserted Ground of Unpatentability

Petitioner asserts that the challenged claims are unpatentable based on the following ground (Pet. 3):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1, 2, 5, 7, 10, 11, 15, 17, 18, 21, 23	103 ¹	Douris, ² Rodriguez ³

Petitioner submits the declaration of Dr. Jeremy Cooperstock (Ex. 1002) in support of the Petition. Patent Owner submits the declaration of Dr. Gregory Abowd (Ex. 2001) in support of the Preliminary Response.

III. ANALYSIS

A. Principles of Law

A claim is unpatentable under § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 285–88 (2011), amended 35 U.S.C. § 103 effective March 16, 2013. Because the ’222 patent has an earliest effective filing date before March 16, 2013, we refer to the pre-AIA version of § 103. *See* Ex. 1001, code (63); Pet. 9 n.1.

² U.S. Patent Publication No. US 2009/0289955 A1, published on Nov. 26, 2009 (Ex. 1003, “Douris”).

³ U.S. Patent Publication No. US 2012/0028577 A1, published on Feb. 2, 2012 (Ex. 1004, “Rodriguez”).

skill in the art; and (4) when in evidence, objective indicia of non-obviousness.⁴ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

B. Level of Ordinary Skill in the Art

In determining the level of ordinary skill in the art, various factors may be considered, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

Petitioner asserts that a person of ordinary skill in the art at the time of invention of the ’222 patent would have had

a bachelor’s degree in electrical engineering or computer science (or an equivalent degree), and two years of practical or industry experience in the field of human computer interaction, including implementation of computer-based systems and software for providing haptic feedback effects to a user and for processing images captured by a device (such as detecting objects in digital images captured by a camera).

Pet. 4–5 (citing Ex. 1002 ¶¶ 12–13). In addition, Petitioner asserts that “[a] person could also have qualified with more formal education and less practical or industry experience, or vice versa. *Id.* at 5.

Patent Owner “disagrees with [Petitioner’s] definition because it is not reasonable to expect an individual, after two years of practical or industry experience in HCI, to have two years of experience in both haptics and image processing.” Prelim. Resp. 11 (citing Ex. 2001 ¶ 12). Accordingly,

⁴ With respect to the fourth *Graham* factor, the parties do not present arguments or evidence regarding objective indicia of non-obviousness. *See generally* Pet.; Prelim. Resp.; Ex. 1002 ¶ 132 (Dr. Cooperstock stating that he is not aware of any objective indicia of nonobviousness).

Patent Owner asserts that a person of ordinary skill in the art at the time of invention of the '222 patent would instead

have had a bachelor's degree in electrical engineering or computer science (or an equivalent degree), and two years of practical or industry experience in the field of human computer interaction, including implementation of computer-based systems and software for providing haptic feedback effects to a user.

Id. at 12 (citing Ex. 2001 ¶ 12).

For purposes of this Decision, we adopt the level of ordinary skill as articulated by Petitioner because, based on the current record, this proposal appears to be consistent with the '222 patent and the prior art of record and is supported by the testimony of Dr. Cooperstock. We do not understand Petitioner's proposed level of skill as requiring two years of experience in *both* haptics and image processing; instead, the two years of experience is in the broader field of human computer interaction. Pet. 4.

Because this is a preliminary determination, Patent Owner may provide additional arguments or evidence supporting a different level of ordinary skill at trial.

C. Claim Construction

In an *inter partes* review, we apply the same claim construction standard that would be used in a civil action under 35 U.S.C. § 282(b), following the standard articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 42.100(b) (2022). In applying this standard, we generally give claim terms their ordinary and customary meaning, as would be understood by a person of ordinary skill in the art, at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–14.

Petitioner asserts that although the parties have exchanged constructions for the claim term “augmented reality” in the related district court litigation, no express construction for any term is required in this proceeding, because “the claims are obvious under any of the constructions proposed in the pending litigation, or under any other reasonable construction.” Pet. 6.

Patent Owner asserts that in the related district court litigation, “the court agreed with Patent Owner and gave ‘augmented reality’ its plain and ordinary meaning.” Prelim. Resp. 12 (citing Ex. 2004). Here, Patent Owner asserts, “all terms may be given their ordinary and customary meaning, as understood by a [person of ordinary skill in the art], in the context of the patent specification, and that no argument herein requires construction for any particular term.” *Id.* (citing Ex. 2001 ¶ 35).

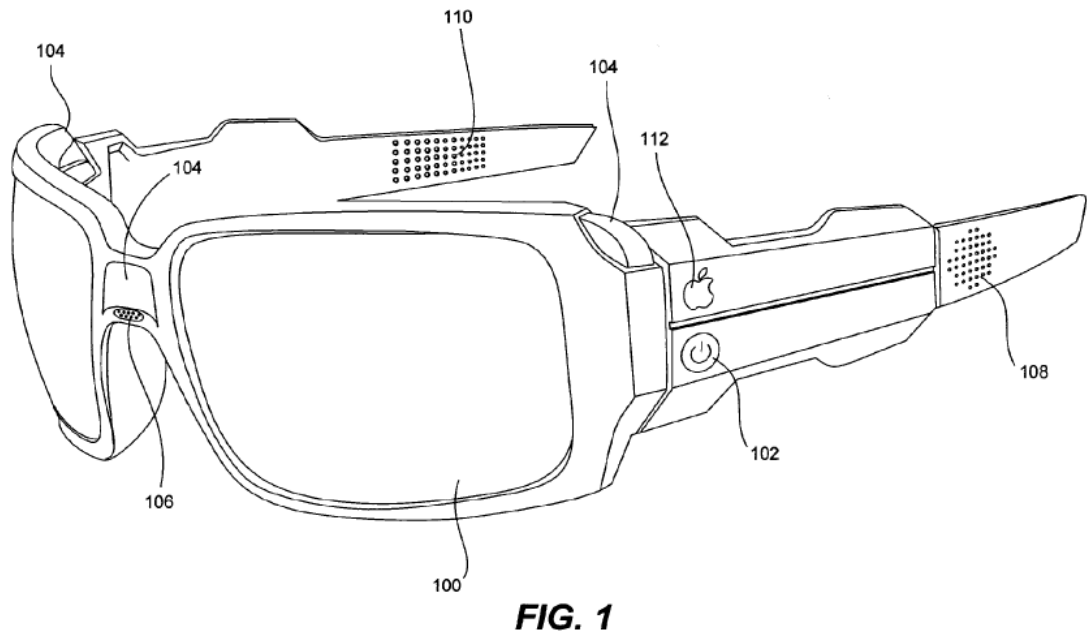
For purposes of this Decision, we determine that no claim terms require express construction. *See Realtime Data LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir. 2019) (“The Board is required to construe ‘only those terms . . . that are in controversy, and only to the extent necessary to resolve the controversy.’” (quoting *Vivid Techs., Inc. v. Am. Sci. Eng’g, Inc.*, 200 F.3d 795, 803) (Fed. Cir. 1999))).

D. Overview of the Asserted References

1. Douris (Ex. 1003)

Douris relates “to a computer implemented device capable of generating an overlay in correlation with physical surroundings being viewed through the device.” Ex. 1003 ¶ 1. In particular, Douris describes “a wearable device that may be worn on the face of the user of the device” and allows the user to “perceive an overlay that is superimposed over the user’s physical surroundings.” *Id.* ¶ 5.

Figure 1 of Douris is reproduced below.



As shown in Figure 1, a wearable device may include a “reality overlay device [that] is a device that is wearable by the user of the device,” for example, “glasses or sunglasses that a user may wear.” *Id.* ¶ 22. Specifically, “the reality overlay device may include one or more transparent lenses 100,” which “may function as screens that enable a transparent overlay to be displayed.” *Id.* In operation, the reality overlay device “may receive and capture information that is pertinent to physical surroundings,” for example, through visual sensors 104 that capture still images or video. *Id.* ¶¶ 23, 24. Overlay information for providing a transparent visual overlay “may be obtained locally via one or more local memories and/or processors,” or “may also be obtained remotely from one or more servers using an Internet browser via a wireless connection to the Internet.” *Id.* ¶ 28. Specifically, the reality overlay device or a remote server “may identify one or more entities in the information that” has been captured, for

example, “by accessing a map of the location,” by “using RFID, and/or by using pattern recognition,” so as to obtain information pertinent to the identified entities. *Id.*

Figure 5 of Douris is reproduced below.

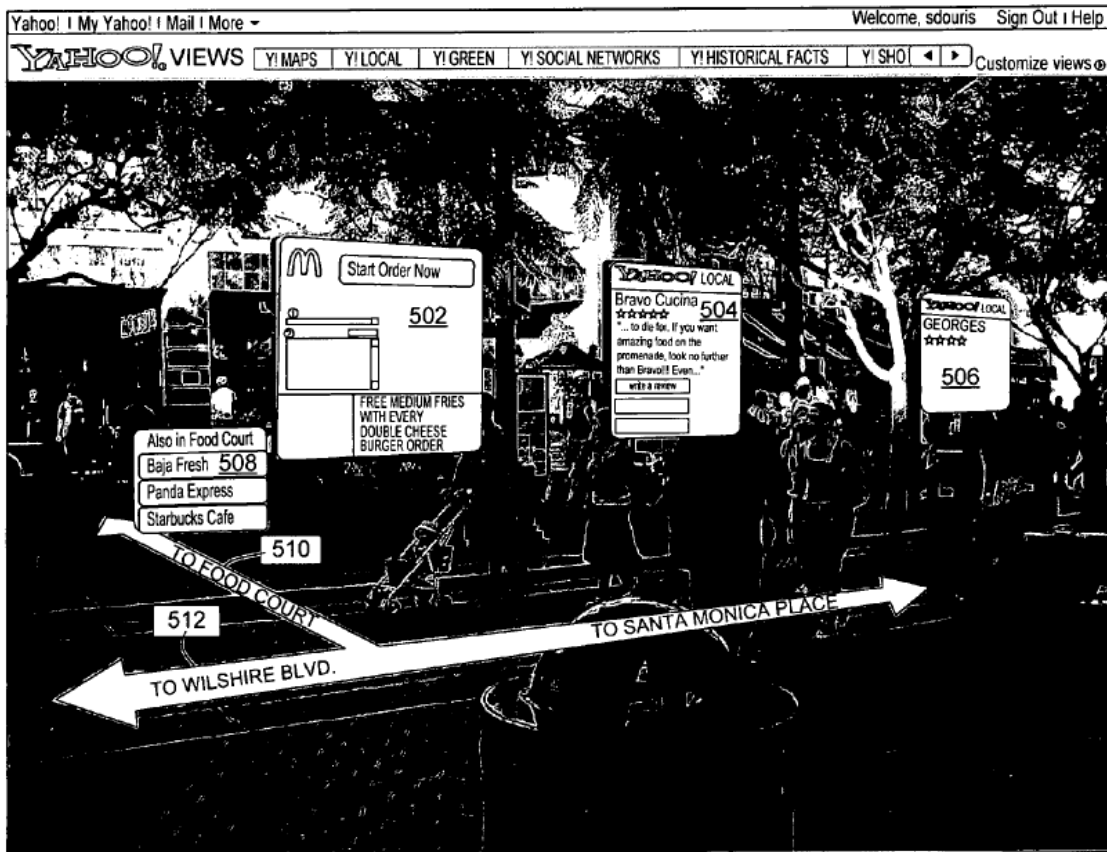


FIG. 5

Figure 5 illustrates “an example local view that may be presented in accordance with various embodiments.” *Id.* ¶ 50. Here, a transparent overlay includes virtual billboards where each “billboard may be placed such that it is overlaid next to and/or in front of a business in the user’s field of vision.” *Id.* A “transparent overlay may also include geographic information,” as shown in Figure 5, such as “one or more symbols and/or

associated text” that “identify street names such as cross streets and/or other directions.” *Id.* ¶ 56.

Figure 6 of Douris is reproduced below.

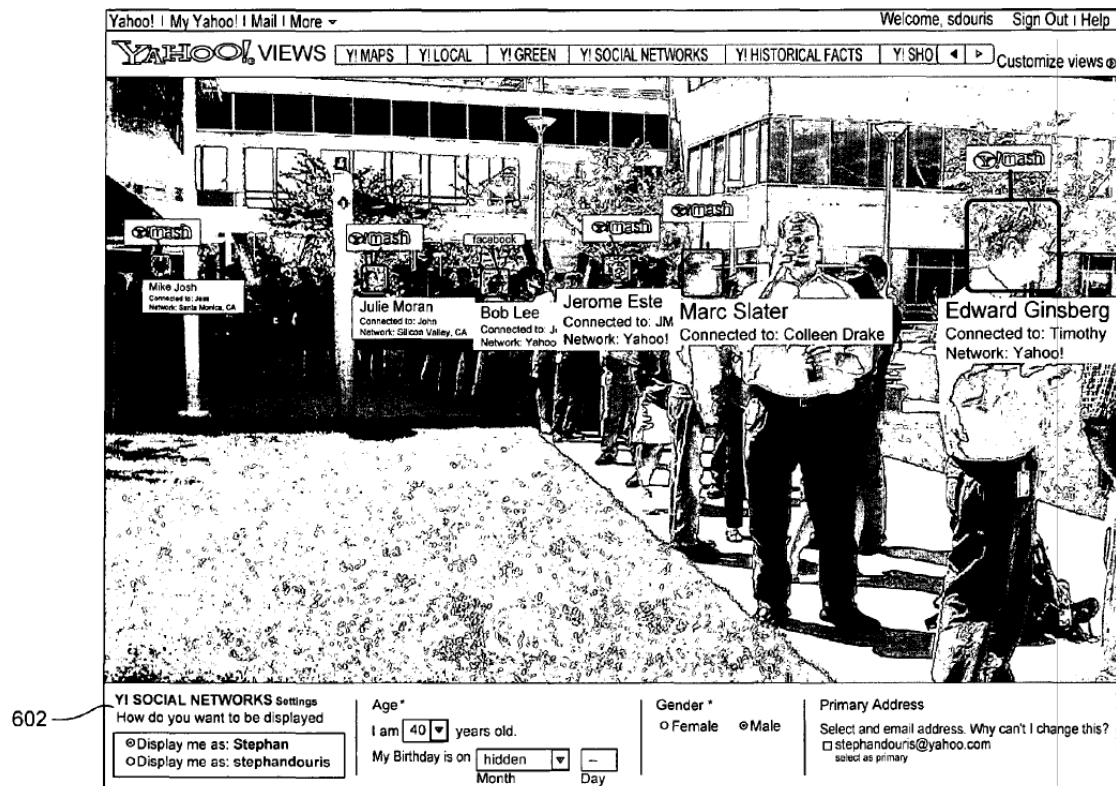
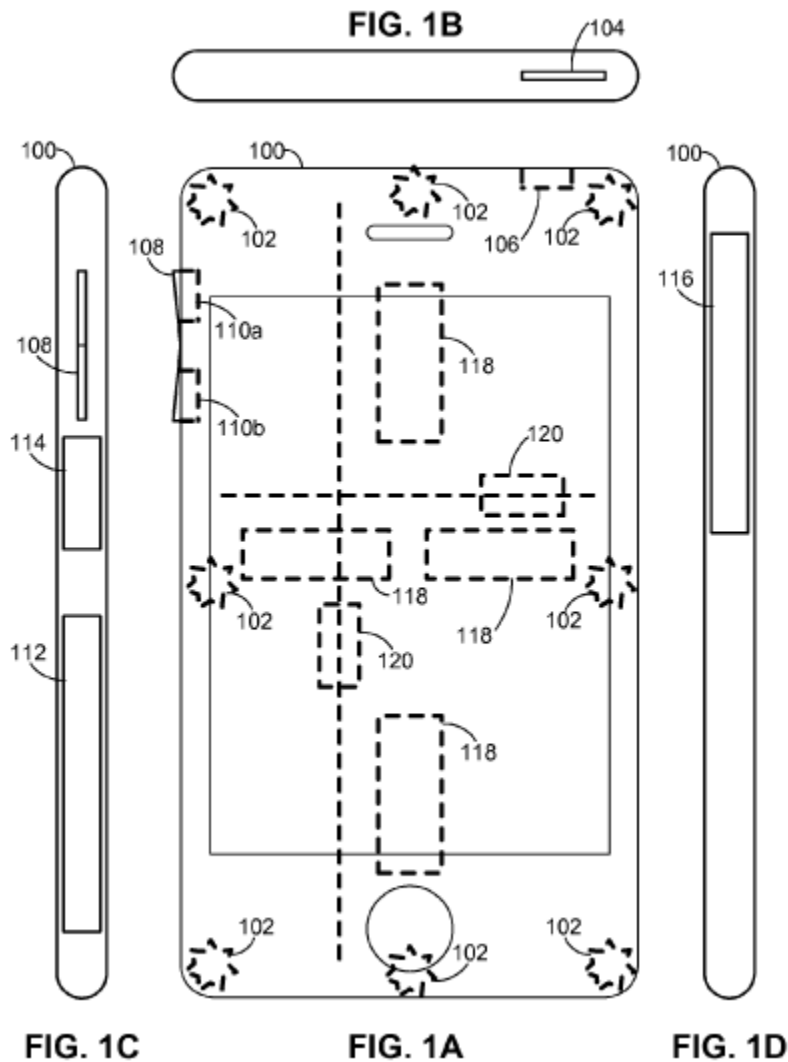


FIG. 6

Figure 6 illustrates “an example social view that may be presented in accordance with various embodiments.” *Id.* ¶ 58. Here, a transparent overlay includes “the name of one or more individuals being viewed, enabling the user to easily identify the individuals.” *Id.* A “social view may also provide additional information associated with these individuals, such as an identity of a network to which the individual is connected and/or a connection (e.g., person to whom the individual is connected).” *Id.*

2. Rodriguez (Ex. 1004)

Rodriguez relates to “a variety of haptic improvements useful in mobile devices.” Ex. 1004, code (57). Figures 1A–1D of Rodriguez are reproduced below.



Figures 1A–1D show a mobile phone equipped with haptic actuators. *Id.* ¶¶ 39–41. For example, Figure 1A shows “plural vibratory actuators 102 internal to the phone, disposed at the four corners, and at mid-points of the sides.” *Id.* ¶ 63. Rodriguez further describes “using a mobile device to capture image data representing a physical object,” processing the data “so

as to obtain metadata that corresponds to the object,” transmitting the metadata to a remote system, and receiving in response data “indicating a haptic signature that is associated with the object.” *Id.* ¶ 18. In an embodiment, “[h]aptic actuators are responsive to electrical control signals—commonly governed by a programmable processor.” *Id.* ¶ 71. “[T]he haptic actuator may be part of a mobile phone device, or it may be a dedicated and/or separate unit,” for example, “an actuator positioned on the bridge of the user’s nose, as by eye wear.” *Id.* ¶¶ 72, 74.

E. Asserted Obviousness over Douris and Rodriguez

Petitioner contends that claims 1, 2, 5, 7, 10, 11, 15, 17, 18, 21, and 23 of the ’222 patent are unpatentable under 35 U.S.C. § 103 as obvious over Douris and Rodriguez. Pet. 9–59. Patent Owner opposes. Prelim. Resp. 39–69. For the reasons set forth below, we find that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that the challenged claims are unpatentable under this ground.

1. Independent Claim 1

a. Preamble

Petitioner contends the combination of Douris and Rodriguez renders obvious a system that includes the limitations recited in claim 1. Pet. 9. Patent Owner does not specifically respond to these arguments. *See generally* Prelim. Resp. Based on our review and consideration of the current record, we determine that the information presented sufficiently supports, for purposes of institution, Petitioner’s assertion relating to the preamble of claim 1.⁵

⁵ At this stage of the proceeding, we do not decide whether the preamble of claim 1 is limiting.

b. Limitation [1a]: a wearable device;

Petitioner contends that Douris teaches this limitation because it discloses a “reality overlay device [that] may be shaped in the form of glasses or sunglasses, and has the ability to superimpose a transparent overlay of information pertinent to the wearer’s surroundings.” Pet. 9–10 (citing Ex. 1003 ¶¶ 5–6, 22, Fig. 1).

Patent Owner does not specifically respond to this contention. *See generally* Prelim. Resp. Based on our review of the current record, we determine that the information presented supports sufficiently, for purposes of institution, Petitioner’s assertions as to this limitation.

c. Limitation [1b]: a second device remote from and in communication with the wearable device;

Petitioner contends that the claimed “‘second device’ can be mapped to Douris in two separate and independent ways, each satisfying limitation 1[b].” Pet. 10. Under its first mapping, Petitioner contends that a second reality overlay device worn by a second user would teach the claimed second device. *Id.* at 10–11 (citing Ex. 1003 ¶¶ 23, 45, 64, Fig. 9). Petitioner contends that the second reality overlay device is remote from and in communication with the first reality overlay device because the reality overlay devices can be connected to each other over a variety of networks capable of connecting remote devices. *Id.* at 11–12 (citing Ex. 1003 ¶¶ 23, 66; Ex. 1002 ¶ 55). Petitioner provides examples where two reality overlay devices would be connected to each other, such as to “enable[] the user of the first overlay device who is visiting a city to share their experience with a friend back home who is wearing the second reality overlay device, or to enable the two users to play a game or exchange messages.” *Id.* at 12 (citing Ex. 1003 ¶¶ 42, 62; Ex. 1002 ¶ 55).

Under its second mapping, Petitioner contends that Douris’s remote network server teaches the claimed second device because Douris discloses that a reality overlay device can obtain and display overlay information from a remote server over a network. *Id.* at 12–14 (citing Ex. 1003 ¶¶ 5–6, 22, 28–30, 46–48, Fig. 3; Ex. 1002 ¶ 57).

Patent Owner does not specifically respond to these contentions. *See generally* Prelim. Resp. Based on our review of the current record, we determine that the information presented supports sufficiently, for purposes of institution, Petitioner’s assertions as to this limitation.

d. Limitation [1c]: a processor configured to generate at least a first control signal and a second control signal representative of a first event and a second event, respectively, occurring in an environment related to the wearable device and/or the second device, the first event and the second event being different events; and

Petitioner contends that the combination of Douris and Rodriguez teaches this limitation. Pet. 14–24. Petitioner contends that Douris teaches a processor included in a reality overlay device. *Id.* at 14 (citing Ex. 1003 ¶¶ 9, 28; Ex. 1002 ¶ 59). Petitioner contends:

The ’222 patent does not expressly define “event” but describes it by reference to a number of examples including “an indication of a physical object within a predetermined proximity of the wearable device,” “an interaction between the wearable device and an object in the environment,” “an indication that the wearable device recognizes an object in the environment, a navigation event, and/or another event occurring in an environment related to the wearable device.”

Id. at 15 (citing Ex. 1001, 2:20–31). According to Petitioner, Douris discloses several examples that mirror these examples from the ’222 patent, including, for example, “the wearer of a reality overlay device being in proximity of a particular person, business or other entity, which may cause

particular overlay information to be displayed by the reality overlay device.” *Id.* at 15–17 (citing Ex. 1003 ¶¶ 27, 40, 50–53, 58, Fig. 5; Ex. 1002 ¶ 61). Petitioner argues that “[i]n the first example above shown in Figure 5, the wearer of the reality overlay device was in the vicinity of one or more businesses (*‘first event’*), and in the second example shown in Figure 6, in the vicinity of one or more particular persons (*‘second event’*).” *Id.* at 17–18 (citing Ex. 1002 ¶ 62). Petitioner contends that Rodriguez teaches providing haptic feedback to the user in response to events and teaches using different haptic signatures for different types of events. *Id.* at 18–21 (citing Ex. 1004 ¶¶ 3, 9–10, 18–19, 22, 50, 74–75, 85, 92; Ex. 1002 ¶¶ 47, 65). According to Petitioner, “Rodriguez further teaches that, in order to output haptic feedback in accordance with a haptic signature, the mobile device’s processor is configured to generate *‘control signals’* that instruct the device’s haptic output device (such as an actuator) to provide feedback in accordance with the haptic signature.” *Id.* at 21 (citing Ex. 1004 ¶¶ 63, 71, 74, 92).

Petitioner next contends that a person of ordinary skill in the art would have been motivated to apply Rodriguez’s teaching of a haptic output device to Douris’s reality overlay device to deliver haptic feedback based on different haptic signatures as described in Rodriguez. *Id.* at 21–22 (citing Ex. 1002 ¶ 69). Petitioner argues:

More specifically, under the proposed combination, the processor in Douris’s reality overlay device would have been configured to generate “*a first control signal*” when the reality overlay device was in the vicinity of one or more businesses (“*the first event*”), and “*a second control signal*” when the reality overlay device was in the vicinity of one or more persons (“*the second event*”) [and] these control signals would

in turn have resulted in haptic feedback signals via a haptic output device.

Id. at 22 (citing Ex. 1002 ¶ 70). Petitioner contends that “the proposed combination would have provided a clear enhancement to the visual overlay capabilities of the Douris reality overlay device by allowing the device to present information using an additional modality — the sense of touch.” *Id.* at 23 (citing Ex. 1002 ¶¶ 72–73). Petitioner further contends that the combination “would have provided an effective way of getting the user’s attention which, in some situations, would have been superior to the video overlay information disclosed in Douris.” *Id.* Petitioner provides examples where haptic feedback would have been useful, for example, for use by vision-impaired users, or when a quiet environment must be observed, or when it was too noisy to hear audio. *Id.* at 23–24 (citing Ex. 1002 ¶ 73).

According to Petitioner, there would have been a reasonable expectation of success in applying Rodriguez’s teachings to the teachings of Douris because use of control signals to provide haptic feedback was well-known, and “[a] person of ordinary skill in the art would have found the disclosures of Douris and Rodriguez more than sufficient to implement the relied-upon teachings, using conventional techniques and without undue experimentation.” *Id.* at 24 (citing Ex. 1004 ¶¶ 3, 9–10, 71; Ex. 1002 ¶ 74).

Patent Owner responds that Petitioner’s contention that the Douris–Rodriguez combination discloses generating different control signals for different events should be rejected because “[h]aptics based on object recognition are not the same thing as haptics based on *events*.” Prelim. Resp. 39. Patent Owner contends that the applicant “remarked during prosecution [that] the ’222 patent deals with events, not static objects: ‘the system can deliver one haptic effect for an approaching stationary object and

a different haptic event for a rapidly approaching object such as a car in an intersection,” and that “[t]he Examiner agreed with Patent Owner, finding that *haptics based on object recognition* does not render obvious *haptics based on events*.” *Id.* at 39–40 (citing Ex. 1007, 299). Patent Owner argues that objects and events are different and “implementing events requires completely different structure than implementing object recognition.” *Id.* at 41–43 (citing Ex. 1001, 8:11–9:59, Fig. 2; Ex. 2001 ¶¶ 54–55). Patent Owner asserts that “Douris only teaches the concept of entities or objects—not events.” *Id.* at 44–45.

Next, Patent Owner argues that “Douris never teaches ‘being in the proximity of a particular [object]’ as a concept at all,” and that a user’s “proximity to a recognized object is incidental and irrelevant to Douris’s system.” *Id.* at 47–48 (citing Ex. 1003; Ex. 2001 ¶ 61). Moreover, Patent Owner contends, Douris never teaches that the reality overlay device being in proximity of a particular object serves as the basis of representation of control signals. *Id.* at 48–50 (citing Ex. 1003 ¶¶ 50–57, Figs. 5–7; Ex. 2001 ¶ 62).

Patent Owner also argues that a person of ordinary skill in the art “would not have been motivated to modify Douris with Rodriguez because Douris achieves its stated objective of providing overlaid information on a display without the need for additional feedback in the form of haptics.” *Id.* at 50–51 (citing Ex. 2001 ¶ 64). According to Patent Owner, “a [person of ordinary skill in the art] reading Douris would not have seen a gap or deficiency in its disclosure to be motivated to look to a secondary reference, since Douris already teaches sufficiently how to provide visual and audio overlays.” *Id.* at 51 (citing Ex. 1003 ¶¶ 4, 24–26, 28–30). Given Douris’s teaching of using audio for providing information without disrupting the

user’s field of vision, Patent Owner contends, a person of ordinary skill in the art would not have looked to Rodriguez or chose to represent any of Douris’s overlay information haptically. *Id.* at 51–55 (citing Ex. 2001 ¶¶ 67–68).

Lastly, Patent Owner argues that Petitioner has failed to show a reasonable expectation of success in encoding Douris’s overlay information using Rodriguez’s first and second control signals. *Id.* at 55–58. According to Patent Owner, a person of ordinary skill in the art would not have reasonably expected to be successful as doing so “would have required substantial experimentation, research and development, and risk of failure.” *Id.* at 57 (citing Ex. 2001 ¶ 70).

Based on our review of the current record, we are persuaded that the information presented supports sufficiently, for purposes of institution, Petitioner’s assertions as to this limitation. To begin, we find no support for Patent Owner’s proposed distinction between *objects* and the *events* recited in the claims. The applicant’s statements during prosecution distinguishing the Haddick reference⁶ were regarding Haddick’s failure to “disclose a system programmed to generate different control signals upon detecting different events, or detecting a *variety of different events* and respond[ing] accordingly with *different haptic* signals for the different events.” Ex. 1007, 298 (emphasis in original). Those arguments were therefore focused on distinguishing the claimed ability to detect *different* events and generate *different* haptic signals accordingly, not on distinguishing objects from events. *See also id.* at 290 (amending the claims to specifically recite

⁶ U.S. Patent Application No. 2012/0242698 A1, published on Sept. 27, 2012 (Ex. 2002, “Haddick”).

different events in place of merely a *plurality* of events). The cited prosecution history thus does not support Patent Owner’s purported distinction between objects and events.

More importantly, the specification repeatedly identifies an indication of a physical object being in proximity as an “event.” *See* Ex. 1001, 7:31–34 (“For example, the storage 170 of the wearable device 100 may store data related to events including, for example, an indication of a physical object within a predetermined proximity of the wearable device 100.”), 9:30–33 (“The event may include, for example, an indication of a physical object within a predetermined proximity of the wearable device.”), 14:31–33. We fail to see how these examples of events are any different from Douris’s disclosure of an indication of a particular person or business being in proximity of Douris’s reality overlay device. *See* Ex. 1003 ¶ 40 (“the overlay information may identify restaurants that the user may be interested in within the context of the surroundings”); *see also id.* ¶¶ 50–53, 59, Figs. 5, 6.

Patent Owner also argues that Douris never teaches being in the proximity of a particular object as a concept at all, and that a user’s proximity to an object is *irrelevant* to Douris’s system. Prelim. Resp. 47–48. That, however, ignores not only Petitioner’s cited disclosure but also the very purpose of Douris. *See* Ex. 1003, code (57) (“Disclosed are methods and apparatus for capturing information *that is pertinent to physical surroundings* with respect to a device.” (emphasis added)). Douris’s generation of a visual overlay is in fact based on detecting identified objects and people in proximity of the overlay device:

Other information that may be captured by the device may include *identifying* one or more entities *in the field of vision of*

the reality overlay device. For instance, the reality overlay device may support *pattern recognition*. Thus, the reality overlay device may process at least a portion of the *received information* (e.g., one or more images) in order *to identify* one or more entities using pattern recognition. Such entities may include environmental features such as a mountain, road, building, or sidewalk. Moreover, entities that are recognized may also include people or animals. Pattern recognition may also be used to identify specific buildings by identifying letters, words, or addresses posted in association with a particular building.

Id. ¶ 27 (emphasis added); *see also id.* ¶ 28 (disclosing that the overlay information is generated using the information that the device captured). We are therefore not persuaded, on the current record, that Douris’s disclosure is deficient in the manner argued by Patent Owner.

We also find Petitioner’s reasons to combine Douris and Rodriguez persuasive for the purposes of institution. We agree that the combination would have provided an effective way of getting the user’s attention and would have been superior to the video or audio feedback disclosed in Douris in some situations, for example, when a quiet environment must be observed or when it is too noisy. *See* Pet. 23–24 (citing Ex. 1002 ¶ 73).

Dr. Cooperstock testifies that in view of the audio overlay information disclosed by Douris as beneficial in certain situations, “[a]n ordinarily skilled artisan would have appreciated that the same advantage attaches to haptic feedback, as it would have provided a third modality to present information to the user—the sense of touch—without impacting the user’s field of vision.” Ex. 1002 ¶ 73. At this stage, we are persuaded by Dr. Cooperstock’s testimony and we determine that Petitioner provides an adequate reason for one of ordinary skill in the art to have modified Douris’s

system with Rodriguez’s teaching in the manner asserted by Petitioner.⁷ *See KSR*, 550 U.S. at 420 (“[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed”).

We are also persuaded at this stage that person of ordinary skill in the art would have had a reasonable expectation that the combination would have been successful. Dr. Cooperstock testifies that the use of control signals to provide haptic feedback in augmented reality systems was well-known before March 2013. Ex. 1002 ¶ 74 (citing Ex. 1004 ¶¶ 3, 9–10). He further testifies that “Rodriguez also identifies a number of commercially available, off-the-shelf components and toolkits for implementing haptics in mobile devices,” and that Rodriguez’s descriptions are sufficient for implementing the detailed functionality without undue experimentation. *Id.* (citing Ex. 1004 ¶¶ 3, 9–10, 71, 98); Pet. 24. Rodriguez discloses multiple Software Development Kits that would have allowed skilled artisans to develop software to control the haptic actuators. Ex. 1004 ¶ 71. On this record, we find Dr. Cooperstock’s testimony consistent with Rodriguez and persuasive to show that a person of ordinary skill in the art would have found the prior art disclosures adequate to implement Petitioner’s proposed combination.⁸ Thus, Petitioner sufficiently establishes that the combination of Douris and Rodriguez teaches this limitation.

⁷ The fact that Douris already teaches providing visual and audio overlays does not undermine Petitioner’s reason, as argued by Patent Owner (Prelim. Resp. 50–51), because neither of those would work effectively in the situations discussed by Petitioner and Dr. Cooperstock.

⁸ Patent Owner’s argument that representing “Douris’s visual and semantic information, e.g., maps, menus, and billboards, using haptic control signals” would have been challenging misses the point because Petitioner does not

e. Limitation [1d]: a haptic output device configured to provide a first haptic feedback signal and a second haptic feedback signal based on the first control signal and the second control signal, respectively

Petitioner contends that Rodriguez identifies various devices that teach a “haptic output device” such as “vibratory electric motors using an offset mass” and actuators “based on electroactive polymers, piezoelectrics, acoustic radiation pressure, and electrostatic surface actuation.” *Id.* at 24–25 (citing Ex. 1004 ¶ 15; Ex. 1002 ¶ 76). Petitioner contends that in the combined Douris–Rodriguez system, the haptic output device would have been configured to deliver different haptic feedback in accordance with different control signals. *Id.* at 25 (citing Ex. 1002 ¶ 77).

Patent Owner does not specifically respond to these contentions. *See generally* Prelim. Resp. Based on our review of the current record, we determine that the information presented supports sufficiently, for purposes of institution, Petitioner’s assertions as to this limitation.

f. Conclusion – Claim 1

Considering the record presently before us, Petitioner has established a reasonable likelihood that it would prevail in showing that the combination of Douris and Rodriguez would have rendered the subject matter of claim 1 obvious to one of ordinary skill in the art at the time of the invention.

contend that the combination employ haptic signals to convey all of the overlay information. *See* Pet 23 (arguing that haptic feedback would have provided an effective way of getting the user’s attention in some situations).

2. Independent Claim 10

a. Preamble

Petitioner contends the combination of Douris and Rodriguez renders obvious a system that includes the limitations recited in claim 10. Pet. 34–35. Patent Owner does not specifically respond to these arguments. *See generally* Prelim. Resp. Based on our review and consideration of the current record, we determine that the information presented sufficiently supports, for purposes of institution, Petitioner’s assertions relating to the preamble of claim 10.⁹

b. Limitation [10a]: an augmented reality device configured to generate an augmented reality environment comprising an augmented reality space and a physical space, the augmented reality device comprising

Petitioner contends Douris teaches this limitation because it discloses a network server that generates transparent overlay information comprising imagery and associated position information based on recognized objects in the physical surroundings to transmit to a reality overlay device so that the wearer “may view real world images through the lenses 100 while simultaneously viewing the transparent overlay.” Pet. 35–36 (citing Ex. 1003 ¶¶ 13, 28–30, 39, 41, 47). Petitioner contends that Douris’s overlay information may include “the actual transparent image(s) to be displayed in order to superimpose the transparent overlay.” *Id.* at 37–39 (citing Ex. 1003 ¶¶ 29, 36, 51–52, 58 Figs. 5–6). Petitioner further contends that the “augmented reality environment” generated by the server in Douris also comprises “a physical space” because the overlay information specifies

⁹ At this stage of the proceeding, we do not decide whether the preamble of claim 10 is limiting.

where the additional information about the identified entities in the physical world will be displayed within the transparent overlay. *Id.* at 40 (citing Ex. 1003 ¶¶ 29, 47, Figs. 5–6; Ex. 1002 ¶ 96). Petitioner contends that Douris’s overlay information includes actual images placed “in correlation with the identified entities in the captured information (e.g., visual information), as perceived by the user of the reality overlay device,” which, Petitioner contends, “closely tracks the exemplary environment described in the ’222 patent.” *Id.* at 40–42 (citing Ex. 1003 ¶¶ 36–37, 41; Ex. 1001, 18:18–33).

Patent Owner does not specifically respond to these Petitioner’s contentions. *See* Prelim. Resp. Based on our review and consideration of the current record, we determine that the information presented sufficiently supports, for purposes of institution, Petitioner’s assertions relating to this limitation.

c. Limitation [10b]: a processor configured to detect a plurality of events that occur in the environment related to a wearable device, the processor configured to generate the augmented reality space coincident with the physical space

Petitioner contends Douris teaches this limitation. Pet. 43–46. Petitioner contends that it would have been obvious that the remote server in Douris includes a processor that would have been configured to carry out the functions of limitation 10[b]. *Id.* at 43 (citing Ex. 1003 ¶ 67; Ex. 1002 ¶¶ 100–105). Petitioner further contends that Douris discloses that its server may detect various events occurring in the environment of a reality overlay device by using information received from that device. *Id.* at 44–45 (citing Ex. 1003 ¶¶ 27–30, 35–38, 47, 51–53, 58–60; Ex. 1002 ¶ 101). Petitioner argues that Douris’s server “generate[s] the augmented reality space

coincident with the physical space” because the server “ascertain[s] a desired placement of the overlay information with respect to the identified entities, where the overlay information indicates the desired placement of visual overlay information within the transparent overlay.” *Id.* at 45–46 (citing Ex. 1003 ¶¶ 29, 30, 47, Figs. 5, 6) (citing also to its contentions as to limitation 10[a]).

Patent Owner responds that “Douris teaches that its wearable device generates the augmented reality space, with its remote servers merely obtaining precursor overlay information for the wearable device to subsequently use when generating augmented reality space.” Prelim. Resp. 58–60 (citing Ex. 1003 ¶¶ 46–48, Figs. 2–3; Ex. 2001 ¶ 71). Patent Owner argues that “the processor of the remote server, which Petitioner argues meets the processor in limitation 10[b], only obtains and transmits precursor overlay information to the wearable device,” it never teaches actually generating the augmented reality. *Id.* at 61–63 (citing Ex. 1003 ¶¶ 29–30, 46–48, Figs. 2–3, 8; Ex. 2001 ¶ 72).

Based on our review of the current record, we are persuaded that the information presented supports sufficiently, for purposes of institution, Petitioner’s assertions as to this limitation. Petitioner maps Douris’s transparent overlay information to the claimed “augmented reality space.” *Id.* at 41, 45; *see also* Ex. 1002 ¶ 96 (Dr. Cooperstock testifying that “an augmented reality space” is “additional information associated with entities identified in the user’s physical surroundings”). Douris discloses that its server may generate such overlay information. Ex. 1003 ¶ 47. Douris further discloses that

Overlay information may include a variety of information that may be used to generate a transparent overlay. Thus, the

overlay information *may include*, but need not include, the *actual transparent image(s) to be displayed* in order to superimpose the transparent overlay.

Ex. 1003 ¶ 37 (emphasis added); *id.* ¶ 30 (“The transparent images may be generated locally or remotely.”). Douris further discloses that its server may “ascertain a desired placement of the overlay information with respect to the identified entities, where the overlay information indicates the desired placement of visual overlay information within the transparent overlay,” and “then transmit the overlay information to the device.” Ex. 1003 ¶ 47; *see also id.* ¶ 29 (“The overlay information may also specify placement of visual overlay information within the transparent visual overlay.”).

Dr. Cooperstock testifies that Douris’s server’s overlay information provides the “positioning imagery” that is “displayed in association with identified physical objects,” and therefore teaches the server generating the augmented reality space. Ex. 1002 ¶ 102. This is consistent with the disclosure of the augmented reality space in the ’222 patent specification. *See, e.g.*, Ex. 1001, 18:1–7 (explaining that an augmented reality space comprises one or more *virtual objects* that augment one or more physical objects). We are therefore persuaded that Douris teaches a processor of the augmented reality device configured to generate the augmented reality space, as claimed.

Thus, on the present record, Petitioner sufficiently establishes that Douris teaches or suggests this limitation.

d. Limitation [10b1]: recognize at least one physical object in the physical space and augment the at least one physical object with one or more virtual objects in the augmented reality space,

Petitioner contends that the server in Douris can recognize physical objects in the physical space of a reality overlay device by processing images of device’s surroundings using pattern recognition. Pet. 46 (citing

Ex. 1003 ¶¶ 27–28, 47; Ex. 1002 ¶¶ 101–103) (citing also to its contentions as to limitation 10[b]). Petitioner further contends that Douris teaches generating transparent overlay information that a reality overlay device displays in association with the identified physical objects. *Id.* at 47 (citing Ex. 1003 ¶¶ 29, 30, 41, 47, Figs. 5, 6). According to Petitioner, the “one or more virtual objects” in Douris corresponds to the additional information and/or transparent images included in the overlay information generated by the server to augment one or more identified entities. *Id.* (citing Ex. 1003 ¶¶ 36, 37) (citing also to its contentions as to limitation 10[a]).

Patent Owner responds that “Petitioner’s asserted combination does not disclose limitation 10[b][1] for the same reasons it does not disclose limitation 10[b].” Prelim. Resp. 63. Patent Owner contends that Douris’s server at most generates overlay information that is later used for augmenting physical objects, but does not itself augment physical objects. *Id.* (citing Ex. 1003 ¶¶ 46–47) (citing also to its contentions as to limitation 10[b]). Patent Owner argues that each of Petitioner’s cited portions of Douris describe functionality of Douris’s reality overlay device or describe Douris’s server generating “the precursor information for the reality overlay device use when augmenting physical objects.” *Id.* at 63–65.

For the reasons discussed above with regard to limitation 10[b], we are not persuaded by Patent Owner’s argument. Patent Owner’s argument appears to improperly focuses on Douris’s *display* of the transparent overlay, which we agree is functionality implemented in Douris’s reality overlay device. *See* Prelim. Resp. 65 (citing Ex. 1003 ¶ 50). Petitioner, however, relies on Douris’s teaching of *generating* overlay information that may be done by the remote server in Douris. *See* Pet. 47. Douris discloses that “the overlay information may indicate a placement of one or more transparent

images (e.g., advertisements, menus, maps, directions, reviews) with respect to and in correlation with the identified entities in the captured information (e.g., visual information), as perceived by the user of the reality overlay device.” Ex. 1003 ¶ 37. Douris further discloses that “the overlay information may include . . . the actual transparent image(s) to be displayed in order to superimpose the transparent overlay.” *Id.* ¶ 36. We therefore determine that Douris’s overlay information generated by the server is sufficient to teach virtual objects that augment the identified physical objects. On the current record, Petitioner sufficiently establishes that Douris teaches or suggests this limitation.

e. Limitation [10b2]: determine an event associated with the augmented reality environment, and

Petitioner contends “the server in Douris detects various events, such as the wearer of the reality overlay device being in physical proximity to businesses or persons” and identifies overlay information to provide in response to detecting the event. Pet. 47–48 (citing Ex. 1003 ¶¶ 28–30, 36, 37, 47; Ex. 1002 ¶ 105).

Patent Owner responds that “the Douris-Rodriguez combination does not teach the concept of events,” and therefore, cannot teach this limitation. Prelim. Resp. 66 (citing *id.* § VIII.A.I). As discussed above, we are persuaded that Douris teaches the claimed events. *See supra* Section IV.E.I.d. Thus, on the current record, Petitioner sufficiently establishes that Douris teaches or suggests this limitation.

f. Limitation [10b3]: generate a control signal based on the determined event

Petitioner contends that the combination of Douris and Rodriguez teaches this limitation. Pet. 49 (citing Petitioner’s contentions as to

limitations 1[c]–1[d]). Petitioner contends that Douris teaches a control signal generated and transmitted by its server, “which indicates the haptic signature to use based on the determined event, *e.g.*, whether a business or entity was in the vicinity of the wearer of the reality overlay device.” *Id.* (citing Ex. 1002 ¶¶ 87–89; Ex. 1004 ¶¶ 18–19). Petitioner further contends that “it would have been obvious that the information generated and transmitted by the server in Douris would have taken the form of a ‘signal’ as claimed,” and that such a signal would have been used to control the haptic feedback provided at the reality overlay device. *Id.* at 49–50 (citing Ex. 1004 ¶¶ 18–19; Ex. 1002 ¶¶ 87, 107; *see also* Pet. 31–35 (Petitioner’s contentions as to limitation 7[b])).

Patent Owner once again argues that Douris does not teach the concept of events. Prelim. Resp. 66. Patent Owner further argues that “Petitioner admits in its Petition addressing claim 1 that it is Rodriguez’s mobile device that generates control signals.” *Id.* at 66–67 (citing Pet. 21; Ex. 2001 ¶ 77).

Based on our review of the current record, we are persuaded that the information presented supports sufficiently, for purposes of institution, Petitioner’s assertions as to this limitation. As explained above, we do not agree with Patent Owner that Douris fails to teach the claimed events. Patent Owner does not address Petitioner’s contentions as to limitation 7[b], incorporated here, that “it would have further been obvious for Douris’s server, under the proposed combination, to have generated and transmitted overlay information that would be used, at the reality overlay device, to generate the haptic feedback for the user.” Pet. 49; *see also id.* at 33–34 (citing Ex. 1004 ¶ 18; Ex. 1002 ¶ 89). Instead, Patent Owner argues Petitioner’s contentions as to claim 1 are inconsistent with its position here.

We do not agree. In both instances, Petitioner’s proposed combination relies on *Douris* for generation of the control signals based on the determined events. *See* Pet. 22 (citing Ex. 1002 ¶ 69), 49 (citing Ex. 1002 ¶¶ 87–89); *see also* Pet. 53–54 (explaining the two mappings). Moreover, both *Douris* and *Rodriguez* teach flexibility as to the implementation of this functionality. *See* Ex. 1003 ¶ 39 (“The overlay information may be obtained locally via a memory and/or remotely from a server via the Internet.”); Ex. 1004 ¶ 18 (disclosing that “data is then processed (e.g., by the mobile device, and/or by a remote system) . . .”). We are therefore not persuaded by Patent Owner’s argument at this stage.

Patent Owner also asserts that “Petitioner cites Dr. Cooperstock’s declaration at ¶¶ 87–89 for support, but Dr. Cooperstock is silent in these paragraphs about *Douris*’s server generating any control signal.” Prelim. Resp. 67–68. That, however, is incorrect. Dr. Cooperstock testifies that “the ‘*signal*’ received by the reality overlay device from the server would have included additional overlay information pertaining to the appropriate haptic signature to use to provide haptic feedback (e.g., based on whether the device was in the vicinity of businesses or persons).” Ex. 1002 ¶ 89. He further testifies that “*Rodriguez* itself expressly suggests such an implementation by disclosing the remote system providing, to the mobile device, data indicating a haptic signature based on the object in the user’s vicinity.” *Id.* (citing Ex. 1004 ¶ 18). Dr. Cooperstock testifies that it would have been obvious to incorporate similar functionality into the server of *Douris* “to simplify the process by which the processor in the reality overlay device generates the first and second control signals, since the server would have already determined whether businesses or persons were in the vicinity of the device.” *Id.* (citing Ex. 1003 ¶¶ 28, 50). On the current record, we

find Dr. Cooperstock's testimony consistent with the cited references and persuasive to show that Petitioner's proposed combination teaches this limitation.

g. Limitation [10c]: the wearable device remote from and in communication with the augmented reality device

Petitioner relies on its contentions related to limitation 1[b] for this limitation. Pet. 50 (citing Ex. 1002 ¶¶ 56–57).

h. Limitation [10d]: remote device remote from and in communication with the wearable device and the augmented reality device; and

Petitioner relies on its contentions related to limitation 1[b] for this limitation and argues that Douris discloses that a reality overlay device can communicate with another remote reality overlay device. Pet. 50 (citing Ex. 1003 ¶¶ 22–23, 45, 62, 64, 66; Ex. 1002 ¶¶ 55, 110).

i. Limitation [10e]: a haptic output device configured to provide a plurality of haptic feedback signals based on the control signal

Petitioner relies on its contentions related to limitations 1[c] and 1[d] for this limitation. Pet. 51 (citing Ex. 1004 ¶ 19; Ex. 1002 ¶¶ 69–70, 75–77, 126, 110).

Patent Owner does not specifically respond to Petitioner's arguments as to limitations 10[c]–10[e]. *See generally* Prelim. Resp. Based on our review and consideration of the current record, we determine that the information presented sufficiently supports, for purposes of institution, Petitioner's assertions relating to these limitations of claim 10.

j. Conclusion – Claim 10

Considering the record presently before us, Petitioner has established a reasonable likelihood that it would prevail in showing that the combination

of Douris and Rodriguez would have rendered the subject matter of claim 10 obvious to one of ordinary skill in the art at the time of the invention.

3. Independent Claim 17

Claim 17 is a method claim that recites “detecting an event in an environment,” and also recites other limitations that are similar to those in claim 1. Ex. 1001, 30:3–16; Pet. 52; Prelim. Resp. 68 (noting that independent claim 17 “recites similar limitations as independent claims 1 and 10”). Petitioner asserts that Douris teaches detecting events such as the reality overlay device being in proximity of businesses or persons. Pet. 52–53 (citing Ex. 1003 ¶¶ 27–30, 35–38, 40, 51–53, 58–60, Figs. 5, 6; Ex. 1002 ¶¶ 61–62). Petitioner further asserts that Douris’s reality overlay device includes a processor and that “Douris explains that a reality overlay device *itself* may analyze information about the device’s physical surroundings to detect that a person or business is in the vicinity of the device.” *Id.* at 53–54 (citing Ex. 1003 ¶¶ 9, 28, 67, 39; Ex. 1002 ¶¶ 110, 118).

For the remaining limitations of claim 17, Petitioner relies on its contentions directed to claim 1. Pet. 55–58 (citing Ex. 1002 ¶¶ 65–66, 69–70, 75–77, 126). Petitioner therefore contends that claim 17 is unpatentable over Douris in combination with Rodriguez. *Id.* at 52.

Patent Owner does not present separate argument for claim 17. *See* Prelim. Resp. 68 (arguing that claim 17 is not unpatentable for the same reasons as claims 1 and 10).

For the reasons discussed above with regard to claims 1 and 10, and because Petitioner sufficiently shows that Douris teaches the claimed event

detection, we determine that the information presented supports sufficiently, for purposes of institution, Petitioner’s assertions as to claim 17.

4. Dependent Claims 2, 5, 7, 11, 15, 18, 21, and 23

Claim 2 depends on claim 1 and additionally recites “wherein the second device is a second wearable device.” Ex. 1001, 28:43–44. Petitioner relies on its contentions as to limitations 1[a] and 1[b] for this limitation. Pet. 26 (citing Ex. 1002 ¶¶ 52, 54–55, 78). Claim 18 depends on claim 17 and is similar to claim 2. Ex. 1001, 30:17–18. Petitioner relies on the same contentions for that claim. Pet. 58 (citing Ex. 1002 ¶¶ 78, 122, 127).

Claim 5 depends on claim 1 and additionally recites “wherein the second device comprises the haptic output device.” Ex. 1001, 28:59–60. Petitioner relies on its contentions as to limitations 1[c]–1[d] for this limitation. Pet. 26–28 (citing Ex. 1002 ¶¶ 79–80). Claim 21 depends on claim 17 and is similar to claim 5. Ex. 1001, 30:36–38. Petitioner relies on the same contentions for that claim. Pet. 58 (citing Ex. 1002 ¶¶ 79–90).

Claim 7 depends on claim 1 and also recites “a communication port configured to establish a wireless or wired communication channel between the wearable device and the second device.” Ex. 1001, 29:1–4. Petitioner relies on its contentions as to limitation 1[b] for this limitation and further contends that it would have been obvious that devices in Douris “would have included a ‘communication port’ in the form of an interface including hardware and/or software enabling the reality overlay device and server to communicate over the network.” Pet. 28–31 (citing Ex. 1003 ¶¶ 28, 66; Ex. 1002 ¶¶ 84–85). Claim 7 further recites “wherein the processor is configured to receive a signal representative of the first and second events occurring at the wearable device or the second device via the wireless or

wired communication channel and generate the control signal based on the received signal.” Ex. 1001, 29:5–9. Petitioner relies on its contentions as to limitations 1[c]–1[d] for this limitation, and, as discussed above in context of limitation 10[b3], contends that it would have been obvious to receive the claimed signal from Douris’s server. Pet. 32–34 (citing Ex. 1003 ¶¶ 28, 30, 36–37, 39, 40; Ex. 1002 ¶¶ 87–89).

Claim 23 depends on claim 17 and is similar to claim 7. Ex. 1001, 30:47–57. Petitioner relies on the same contentions for that claim. Pet. 58–59 (citing Ex. 1002 ¶¶ 56–57, 82–89, 122, 131).

Claim 11 depends on claim 10 and additionally recites “the remote device is a second wearable device.” Ex. 1001, 29:45–46. Petitioner relies on its contentions as to limitation 10[d] for this limitation. Pet. 51–52 (citing Ex. 1002 ¶¶ 52, 112).

Claim 15 depends on claim 10 and additionally recites “wherein the wearable device comprises the haptic output device.” Ex. 1001, 29:66–67. Petitioner relies on its contentions as to limitations 10[c] and 10[e] for this limitation. Pet. 52 (citing Ex. 1002 ¶¶ 69–70, 75–76).

Patent Owner does not raise any arguments directed specifically to claims 2, 5, 7, 11, 15, 18, 21, and 23. *See* Prelim. Resp. 58, 68, 69. Based on our review of the current record, we determine that the information presented supports sufficiently, for purposes of institution, Petitioner’s assertions as to these dependent claims.

IV. DISCRETIONARY DENIAL

A. 35 U.S.C. § 314(a)

Patent Owner argues that we should exercise discretion to deny institution in view of the related district court litigation. *See* Prelim. Resp. 69–75.

The Board has held that the advanced state of a parallel district court action is a factor that may weigh in favor of denying a petition under § 314(a). *See NHK Spring Co. v. Intri-Plex Techs., Inc.*, IPR2018-00752, Paper 8 at 20 (PTAB Sept. 12, 2018) (precedential); Patent Trial and Appeal Board Consolidated Trial Practice Guide (Nov. 2019), 58 & n.2, *available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated>. In *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential), the Board explained that “cases addressing earlier trial dates as a basis for denial under *NHK* have sought to balance considerations such as system efficiency, fairness, and patent quality.” *Fintiv*, Paper 11 at 5. *Fintiv* sets forth six non-exclusive factors for determining “whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* at 6. The Director has also issued interim guidance to the Board on applying these factors. *See* Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022), *available at* https://www.uspto.gov/sites/default/files/documents/interim_proc_discretionary_denials_aia_parallel_district_court_litigation_memo_20220621_.pdf (“Memo”).

The Memo explains that, “[c]onsistent with *Sotera Wireless, Inc.*, the PTAB will not discretionarily deny institution in view of parallel district

court litigation where a petitioner presents a stipulation not to pursue in a parallel proceeding the same grounds or any grounds that could have reasonably been raised before the PTAB.” Memo 3 (footnote omitted) (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential as to § II.A)). Such a *Sotera* stipulation “mitigates concerns of potentially conflicting decisions and duplicative efforts between the district court and the PTAB . . . and allows the PTAB to review grounds that the parallel district court litigation will not resolve.” *Id.* at 7–8.

Petitioner acknowledges that in the related district court case, the court has set a trial date of February 20, 2024. Pet. 4.¹⁰ But to address any concerns regarding duplication of efforts between the related district court case and this proceeding, Petitioner provides a stipulation that it “will not pursue in the district court any grounds of invalidity against the challenged claims that were raised or reasonably could have been raised in IPR.” *Id.*

In response, Patent Owner acknowledges that Petitioner offers a *Sotera* stipulation, and that under these circumstances “a petition should not ordinarily be denied in accordance with the *Fintiv* factors.” Prelim. Resp. 70. But Patent Owner contends that we should still exercise our discretion to deny the Petition under § 314(a) based on the advanced state of the district court case and the duplication of the invalidity ground asserted in this proceeding. *Id.* at 70–71 (citing *Cisco Sys., Inc. v. Estech Sys., Inc.*, IPR2021-00329, Paper 13 (PTAB July 6, 2021)).

¹⁰ Petitioner argues that it filed a motion to transfer the case to the U.S. District Court for the Northern District of California that remained pending at the time of filing the Petition. Pet. 4. Patent Owner informs us that this motion was unsuccessful. Prelim. Resp. 72.

We do not agree that we can effectively ignore the Memo under these circumstances. Patent Owner cites *Cisco*, a non-precedential Board decision decided prior to the Memo in which the panel weighed the *Fintiv* factors and determined that a *Sotera* stipulation did not overcome a trial date scheduled significantly before the projected date of a final written decision. *See* Prelim. Resp. 70–71. The Memo issued after this decision as “binding agency guidance.” Memo at 3. Thus, the Memo abrogates any prior inconsistent holdings by Board panels, including the *Cisco* decision. Because Petitioner has provided a *Sotera* stipulation, the Memo is controlling and the *Fintiv* factors are not a basis for denying institution.

B. 35 U.S.C. § 325(d)

Patent Owner argues that we “should deny institution because Petitioner’s references and arguments are the same or substantially the same as what the Examiner considered during prosecution, and Petitioner fails to demonstrate material error by the Examiner.” Prelim. Resp. 16.

In determining whether to institute an *inter partes* review, we take into account whether the same or substantially the same prior art or arguments were previously presented to the Office. 35 U.S.C. § 325(d). In evaluating arguments under § 325(d), we use

[a] two-part framework: (1) whether the same or substantially the same art previously was presented to the Office or whether the same or substantially the same arguments previously were presented to the Office; and (2) if either condition of first part of the framework is satisfied, whether the petitioner has demonstrated that the Office erred in a manner material to the patentability of challenged claims.

Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH, IPR2019-01469, Paper 6 at 8 (PTAB Feb. 13, 2020) (precedential); *see also*

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017–01586, Paper 8 at 17–18 (PTAB Dec. 15, 2017) (precedential as to Section III.C.5, first paragraph) (listing factors to consider in evaluating the applicability of § 325(d)).

We begin our analysis with the first prong of the *Advanced Bionics* framework. Under that prong, we look to *Becton, Dickinson* factors (a), (b), and (d) to evaluate “the similarities and material differences between the asserted art and the prior art” previously presented to the Office during a proceeding pertaining to the challenged patent (factor (a)), “the cumulative nature of the asserted art and the prior art evaluated” previously (factor (b)), and “the extent of the overlap between the arguments” previously presented “and the manner in which petitioner relies on the prior art” (factor (d)). *Advanced Bionics*, Paper 6 at 9–10 n.10 (citing *Becton, Dickinson*, Paper 8 at 17–18).

Patent Owner contends that Douris is substantially similar to the examiner’s cited reference, Haddick. Prelim. Resp. 17–24. Patent Owner contends that both references disclose devices that

provide the same functionality (generate AR environments by overlaying images on a transparent lenses) using similar implementation details: (1) the head-mounted display performs object recognition on the surrounding environment, (2) communicates with a remote sever to obtain supplemental overlay information relating to the recognized objects, and (3) generates the AR environment by rendering the received overlay information on a transparent display.

Id. at 18–19 (citing Ex. 2001 ¶ 39). Patent Owner points out that, in one example, devices from both Haddick and Douris overlay a McDonald’s signage in response to recognizing that restaurant in real space. *Id.* at 19–20 (citing Ex. 2002 ¶ 472, Fig. 19; Ex. 1003 ¶ 50, Fig. 5). Patent Owner

contends that both Haddick's and Douris's devices implement this functionality in the same way, i.e., by performing object recognition on captured images. *Id.* at 21 (citing Ex. 2002 ¶¶ 249, 448; Ex. 1003 ¶ 36). Patent Owner asserts that both references teach head-mounted displays that obtain overlay information associated with recognized objects by requesting it from remote servers and rendering the overlay information onto transparent display lenses to generate the AR space. *Id.* at 22–23 (citing Ex. 2002 ¶¶ 150, 249; Ex. 1003 ¶¶ 29, 47). Patent Owner argues that because Douris is almost identical to Haddick in its functionality and implementation details, Douris is also cumulative of Haddick, and therefore, that *Becton, Dickinson* factors (a) and (b) are satisfied. *Id.* at 24–25 (citing Ex. 2001 ¶ 44).

We are not persuaded that Douris is substantially the same art as Haddick. First, even though the examiner may have cited Haddick as teaching certain limitations, that does not, in and of itself, mean that Haddick is cumulative of the disclosure of Douris. Instead, determining the cumulative nature of references involves examining allegedly overlapping disclosure, with particular focus on the material relied upon. Here, none of the portions of Haddick relied upon by Patent Owner now to argue similarity to Douris were ever cited by the examiner during the prosecution of the '222 patent. *See, e.g.*, Ex. 1007, 104–108, 232–236, 278–282.

Second, there are multiple teachings of Douris that Petitioner specifically relies upon in its analysis that Patent Owner has not shown are also taught by Haddick. For example, under its second mapping as to limitation 1[b], Petitioner relies on Douris's teaching of a reality overlay device connected to a remote network server that generates a transparent visual overlay. *See* Pet. 11 (citing Ex. 1003 ¶¶ 23, 45, 64). Similarly,

Petitioner relies on Douris's remote server functionality for teaching detecting events and generating an augmented reality space as recited in limitation 10[b]. Pet. 43–46 (citing Ex. 1003 ¶¶ 27–30, 35–38, 47, 51–53, 58–60, Figs. 5, 6). Although Patent Owner points to Haddick's teaching of accessing a “database” for “location or identification data” (Ex. 2002 ¶ 249), that is not the same as the remote *server* functionality disclosed in Douris. Petitioner also relies on Douris's teachings of a social view as teaching the claimed second event, which Patent Owner has not shown Haddick teaches. See Pet. 17–18 (citing Ex. 1003 ¶¶ 27, 58, 64, Fig. 6).

As such, we are persuaded of sufficient distinctions between Douris and Haddick such that the former is not cumulative to the disclosure of the latter. Consequently, the combination of Douris and Rodriguez relied upon by Petitioner is not cumulative of the art evaluated by the examiner during prosecution.

With regard to the overlap between arguments made during examination and the manner in which Petitioner relies on the prior art, we find salient differences. Petitioner relies on different prior art, combined in different ways, than what was before the examiner. For example, Petitioner contends that Douris teaches the claimed *different* events because it discloses its reality overlay device detecting being in the vicinity of a business and being in the vicinity of a particular person. Pet. 17–18. The examiner never considered this argument or a similar teaching in any of the cited references. Instead, as discussed above, the examiner was persuaded by the applicant's claim amendment and argument that Haddick's teachings were limited to detecting a single event. See Ex. 1007, 290, 298.

The examiner also did not consider a mapping for claim 10, similar to Petitioner's contention here, that a remote network server teaches the

claimed augmented reality device. Pet. 35–43. In fact, examiner’s mapping of Haddick to the different devices recited in claim 10 is unclear. *See, e.g.*, Ex. 1007, 280–281.

The examiner also never considered the motivation to combine Douris and Rodriguez, as presented in the Petition. *See id.* at 278–279.

Accordingly, we do not find that *Becton Dickinson* factors (a), (b), and (d) are met for Petitioner’s challenge based on the combination of Douris and Rodriguez, and we find that Petitioner’s ground of unpatentability does not rely upon the same or substantially the same prior art or arguments considered during examination of the ’222 patent. *See Oticon Medical AB v. Cochlear Ltd.*, IPR2019-00975, Paper 15 at 20 (PTAB Oct. 16, 2019) (precedential) (declining to exercise discretion when new, noncumulative prior art was asserted in the Petition). Having failed the first prong under *Advanced Bionics*, we need not determine whether Petitioner has demonstrated that the Office erred in a manner material to the patentability of the challenged claims.¹¹ After careful consideration of the record before us, we determine that, on balance, the totality of the evidence favors declining to exercise our discretion under 35 U.S.C. § 325(d) to deny institution.

¹¹ Even if we were to consider the second prong of *Advanced Bionics*, Patent Owner’s own arguments as to Haddick’s disclosure highlight relevant portions of Haddick (a 234-page reference) that the examiner seems to have not considered during prosecution (*see* Prelim. Resp. 20–23 (citing Ex. 2002 ¶¶ 150, 249, 448, 472)), and likely support a finding that the Office erred in a manner material to the patentability of challenged claims. Moreover, there is ample additional evidence presented in the Petition, including the declaration of Dr. Cooperstock, that warrants reconsideration of the asserted prior art and arguments. *See Becton, Dickinson*, Paper 8 at 17–18.

V. CONCLUSION

After considering the parties' evidence and arguments, we determine that the information presented shows a reasonable likelihood that Petitioner would prevail in establishing that the challenged claims of the '222 patent are unpatentable.

VI. ORDER

Accordingly, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review is instituted for claims 1, 2, 5, 7, 10, 11, 15, 17, 18, 21, and 23 of the '222 patent on the unpatentability ground asserted in the Petition; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial, which commences on the entry date of this decision.

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PETITIONER:

Heidi Keefe
Phillip Morton
Andrew Mace
COOLEY LLP
hkeefe@cooley.com
pmorton@cooley.com
amace@cooley.com

PATENT OWNER:

David Schumann
Palani Rathinasamy
Moses Xie
Timothy Dewberry
FOLIO LAW GROUP PLLC
david.schumann@foliolaw.com
palani@foliolaw.com
moses.xie@foliolaw.com
timothy.dewberry@foliolaw.com