

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTUITION MACHINES, INC. AND CLOUDFLARE, INC.,
Petitioners

v.

HUMAN DIFFERENTIAL INTELLIGENCE, LLC
Patent Owner

Case No. IPR2023-00632
Patent 9,192,861

**PATENT OWNER HUMAN DIFFERENTIAL INTELLIGENCE, LLC'S
PRELIMINARY RESPONSE UNDER 37 C.F.R. § 42.107**

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EXHIBIT LIST
Previously Filed (Petitioners)

Exhibit	Description
1001	U.S. Patent No. 9,192,861 (“the ’861 Patent”)
1002	Declaration of Daniel P. Lopresti, Ph.D
1003	Curriculum vitae of Daniel P. Lopresti Ph.D
1004	File history of the ’861 Patent
1005	U.S. Provisional Application No. 61/076,495 (“HDI’s Provisional”)
1006	U.S. Patent No. 8,214,891 (“Seacat”)
1007	U.S. Patent Application Publication No. 2007/0259716 (“Mattice”)
1008	Sajad Shirali-Shahreza, <i>et al.</i> , “CAPTCHA for Children,” 2008 IEEE International Conference on System of Systems Engineering (SoSE), June 2-4, 2008 (“Shirali-Shahreza”)
1009	von Ahn, “Human Computation,” CMU-CS-05-193, Carnegie Mellon University School of Computer Science, December 7, 2005 (“vonAhn”)
1010	U.S. Patent Application Publication No. 2009/0113294 (“Sanghavi”)
1011	U.S. Patent No. 8,601,538 (“Qvarfordt”)
1012	U.S. Patent No. 8,510,795 (“Gargi”)
1013	U.S. Patent Application Publication No. 2007/0201745 (“Wang”)
1014	U.S. Patent Application Publication No. 2007/0250920 (“Lindsay”)
1015	Greg Kochanski, Daniel Lopresti, and Chilin Shih, “A Reverse Turing Test Using Speech,” Proceedings of the 7th International Conference on Spoken Language Processing, 1357-60, September 16-20, 2002 (“Kochanski”)
1016	Institute of Electrical and Electronics Engineers, Inc., <i>CAPTCHA for Children – IEEE Conference Publication</i> , at https://ieeexplore.ieee.org/document/4724188
1017	Yaoyao Zhu, Xiolei Huang, Daniel Lopresti, <i>et al.</i> , “Web-based Multi-observer Segmentation Evaluation Tool,” 21st IEEE International Symposium on Computer- Based Medical Systems, June 17-19, 2008
1018	Sajad Shirali-Shahreza, et al., “Bibliography of Works Done on CAPTCHA,” 2008 3rd International Conference on Intelligent System and Knowledge Engineering, November 17-19, 2008
1019	Library of Congress, Public Catalog for 2008 IEEE International Conference on System of Systems Engineering (SoSE), at https://cocatalog.loc.gov/cgi-bin/Pwebrecon.cgi?Search_Arg=2008+IEEE+International+Conference+on+System+of+Systems+Engineeri

- ng&Search_Code=TALL&PID=VIFL5zSeTrVcFdBaUaFwZkA1ay
d0k&SEQ=20200904174316&CNT=25 &HIST=1
- 1020 Excerpt from Institute of Electrical and Electronics Engineers, Inc.,
2008 IEEE International Conference on System of Systems
Engineering (SoSE), 343-48 (2008)
- 1021 Declaration of Mary K. Bolin, Ph.D., with attachments
- 1022 Declaration of Jessica Benner, Ph.D., with attachment
- 1023 Declaration of Professor Kawahara Tatsuya, with attachment
- 1024 Declaration of Gerard P. Grenier, with attachment
- 1025 Human Differential Intelligence LLC v. Cigna Corporation, No.
6:20-cv-00305-ADA (W.D. Tex.), D.I. 19 (Corrected First Amended
Complaint)
- 1026 Human Differential Intelligence LLC v. The Gap, Inc., No. 6:20-cv-
00307-ADA (W.D. Tex.), D.I. 14 (Corrected First Amended
Complaint)
- 1027 Human Differential Intelligence LLC v. Bed Bath & Beyond, Inc.,
No. 6:20-cv-00310-ADA (W.D. Tex.), D.I. 13 (Corrected First
Amended Complaint)
- 1028 Human Differential Intelligence LLC v. CVS Health Corporation,
No. 6:20-cv-00311-ADA (W.D. Tex.), D.I. 18 (First Amended
Original Complaint)
- 1029-1039 Reserved
- 1040 Merriam-Webster, Inc., “Threshold,” Merriam-Webster’s Collegiate
Dictionary 1302 (11th ed. 2007)
- 1041 U.S. Patent Application Publication No. 2009/0319270 (“Gross”)
- 1042 U.S. Patent No. 8,542,251 (“Gossweiler”)
- 1043 U.S. Patent Application Publication No. 2009/0320123 (“Yu”)
- 1044 Human Differential Intelligence LLC v. Cloudflare, No. 1:22-cv-
01334 (W.D. Tex.), D.I. 1 (Complaint)
- 1045 Declaration of Jessica Benner, Ph.D., with attachment (Feb. 17,
2023)
- 1046 Declaration of Kelley M. Hayes Greenhill, with attachments (Feb.
22, 2023)
- 1047 Human Differential Intelligence LLC v. Cloudflare, No. 1:22-cv-
01334 (W.D. Tex.), D.I. 13 (Order Staying Case) (Jan. 18, 2023),

1048 Human Differential Intelligence LLC v. Cloudflare,

Currently Filed (Patent Owner)

Exhibit	Description
2001	Touami Mohammed, “Behind the scenes of CAPTCHA verification across different versions (Turning behavior into code),” Shellmates Club, September 21, 2022 (“CAPTCHA Article”)
2002	Frequently Asked Questions of hCAPTCHA at https://docs.hcaptcha.com/faq (“FAQs of hCAPTCHA”)

I. STATEMENT OF MATERIAL FACTS IN DISPUTE

Petitioners Intuition Machines, Inc. and Cloudflare, Inc. (“Petitioners”) did not submit a statement of material facts in their Petition for *inter partes* review. Paper 1 (Petition). Accordingly, no response to a statement of material facts is due pursuant to 37 C.F.R. § 42.23(a), and no facts are admitted.

II. INTRODUCTION

Patent Owner Human Differential Intelligence, LLC (“Patent Owner”) respectfully submits this Patent Owner Preliminary Response under 35 U.S.C. § 313 and 37 C.F.R. § 42.107(a). It is being timely filed on or before July 12, 2023, in accordance with 37 C.F.R. § 42.107(b). Pursuant to 35 U.S.C. § 314(a), Patent Owner respectfully requests that the Board deny institution of a trial with respect to all claims of United States Patent No. 9,192,861 (“’861 Patent”).

“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.” 35 U.S.C. § 314(a). Here, Petitioners have failed to establish that there is a reasonable likelihood that they will prevail on any of their propositions of unpatentability.

A. STATEMENT OF RELIEF REQUESTED

Pursuant to 35 U.S.C. § 314(a), Patent Owner respectfully requests that the Board deny institution of a trial with respect to all claims of the '861 Patent.

B. OVERVIEW OF THE '861 PATENT

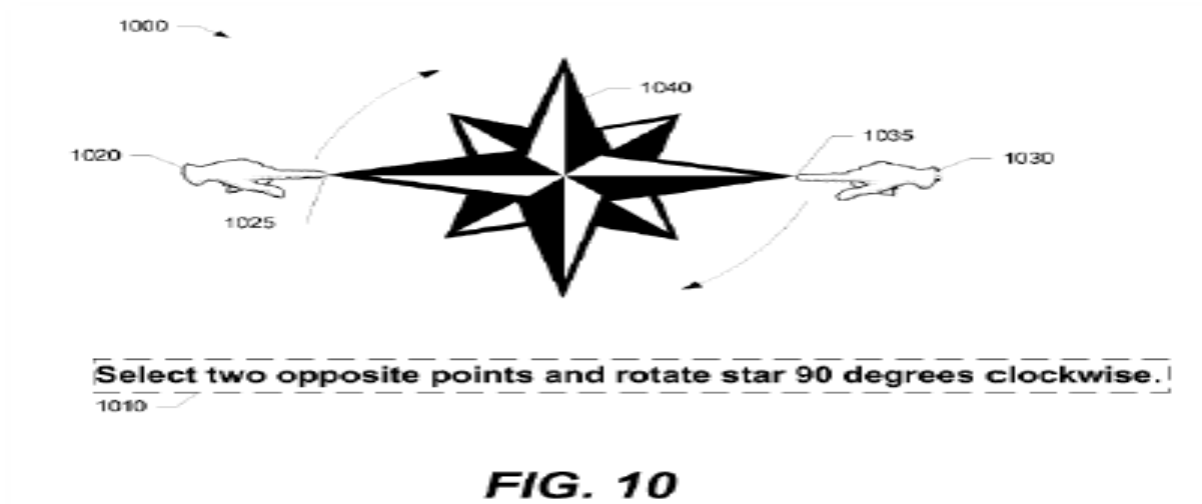
The '861 Patent generally “relates to challenge systems which include pictorial and/or motion features.” Exhibit 1001 ('861 Patent) at 1:21-22. “Another aspect is directed to providing a motion and/or orientation based CAPTCHA (Completely Automatic Public Turing Tests To Tell Humans And Computers Apart) challenge on a portable computing device comprising: automatically electing a manipulation challenge for a user with the portable computing device, wherein the manipulation challenge includes a set of physical manipulation instructions for the portable computing device for the user; automatically processing sensory data associated with user movements and/or manipulations of the portable computing device; automatically determining if the user movements and/or manipulations from the user meet a required threshold for satisfying the set of manipulation instructions.” Exhibit 1001 ('861 Patent) at 5:12-24.

C. OVERVIEW OF THE PRIOR ART

1. SEACAT

United States Patent No. 8,214,891 (“Seacat”) generally “relates to a system and method for authorizing a user utilizing a multi-touch device by providing multi-

touch tests to the user that instructs the user to perform gestures that include contacting the multi-touch device in at least two locations.” Exhibit 1006 (Seacat) at 1:10-14. One example is depicted below in Figure 10 of Seacat.



In this embodiment, Seacat instructs the user to contact the display on two opposite points of a compass star and “move in a clockwise direction 90 degrees, which subsequently rotates [the] star.” Exhibit 1006 (Seacat) at 8:24-29. The test allows “a user to rotate a picture between 85 and 95 degrees instead of exactly 90 degrees,” yet still meet the required threshold for “an acceptable range of test answers.” Exhibit 1006 (Seacat) at 5:24-29, 6:1-6, 7:34-42. After the user completes the task, the device sends the multi-touch response to the manager. Exhibit 1006 (Seacat) at 5:13-22, 5:52-62, 7:14-24. The manager compares that touch response to a known answer. Exhibit 1006 (Seacat) at 5:24-28, 5:63-6:40, 7:34-62. If the touch response data is correct (or close enough), the manager concludes the user is

human and authorizes the device; otherwise, the manager may send another test to the device. Exhibit 1006 (Seacat) at 5:29-34; 5:63-6:40.

2. MATTICE

United States Patent Publication No. US 2007/0259716 (“Mattice”) “relates generally to gaming systems, and more particularly, to gaming systems which include handheld devices having motion detection capabilities.” Exhibit 1007 (Mattice) at [0003]. Mattice describes a method to interpret the movement and orientation of the device itself to provide input from the user. Exhibit 1007 (Mattice) at [0037-39], [0046-49], [0053-65], [0128-152], [0228-33]. Examples include “travel[ing] in the path of an ‘O’” ([0048]), “tilt[ing] the handheld device forward, backwards or to e[i]ther side” to scroll or navigate through menus ([0129-30]), changing volume, speed, or settings “via tilting motions and/or other gestures performed by the user” ([0131-33]), fast advancing “by the user accelerating the handheld device” ([0134]), using a “thump” as a “button” ([0135]), applying menu overlays by tilting the device ([0136]), and playing various games in the device’s GUI by moving and orienting the device ([0137-46]).

D. LEVEL OF ORDINARY SKILL IN THE ART

“The person of ordinary skill in the art is a hypothetical person who is presumed to have known the relevant art at the time of the invention.” Manual of Patent Examining Procedure (“MPEP”) 2141.II.C. Factors that may be considered

in determining the level of ordinary skill in the art may include: (1) type of problems encountered in the art; (2) prior art solutions to those problems; (3) rapidity with which innovations are made; (4) sophistication of the technology; and (5) educational level of active workers in the field. *In re GPAC*, 57 F.3d 1573, 1579 (Fed. Cir. 1995).

Petitioners propose that “[a] person of ordinary skill in the art (‘POSA’) in mid-2008 (or mid-2009 when the ‘861 Patent’s non-provisional was filed) would have had at least a bachelor’s degree in Computer Science or a related field, along with at least two years of work or research experience in computer security, and some experience with CAPTCHA. More education could substitute for less experience, and vice versa.” Paper 1 (Petition) at 15. Patent Owner does not take issue with Petitioners’ proposed definition of a person of ordinary skill in the art at this time but reserves the right to challenge Petitioners’ definition of a person of ordinary skill in the art should it become necessary if a trial is instituted.

E. CLAIM CONSTRUCTION

In an *inter partes* review (“IPR”) filed on or after November 13, 2018, the Board construes claim terms based on their ordinary and customary meaning in accordance with *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). The specification is the “best source for understanding a technical term,” to be supplemented, “as needed, by the prosecution history.” *Id.* at 1315.

Petitioners do not propose any specific claim constructions in their Petition, but they believe “[t]here is an issue regarding whether claim 1 is limited to motion/orientation of the device itself, or whether it also covers physical interactions with the device’s GUI.” Paper 1 (Petition) at 15. Patent Owner does not believe any terms need to be construed at this time but reserves the right to present claim constructions for any and all terms of the ‘861 Patent should trial be instituted.

F. SUMMARY OF PATENT OWNER’S ARGUMENTS

Petitioners bear the burden of demonstrating a reasonable likelihood that they would prevail in showing unpatentability on the grounds asserted in the Petition. 37 C.F.R. § 42.108(c). While it is not required to file a preliminary response, Patent Owner takes this opportunity to explain the reasons the Board should not institute trial. 37 C.F.R. § 42.107(a).

Institution should be denied due to the substantive defects of the Petition. In particular, Seacat and Mattice, alone or in combination, do not disclose “automatically processing touch sensory data associated with user movements” of independent claim 12 or the corresponding limitation of independent claim 1 of the ‘861 Patent. Petitioners also fail to present a reasonable motivation to combine Seacat and Mattice with respect to independent claim 1.

Patent Owner does not attempt to fully address the myriad of other deficiencies of the underdeveloped grounds asserted in the Petition. *See*

Travelocity.com L.P. et al. v. Cronos Technologies, LLC, CBM 2014-00082, Paper 12 at 10 (PTAB Oct. 16, 2014) (“nothing may be gleaned from the Patent Owner’s challenge or failure to challenge the grounds of unpatentability for any particular reason”). However, the deficiencies addressed herein are dispositive and preclude trial on any asserted ground.

III. THE PETITION FAILS TO MEET THE REQUIREMENTS FOR INSTITUTING AN *INTER PARTES* REVIEW

The Petition advances grounds of rejection that do not disclose all the limitations of the independent claims at issue. Only Seacat was asserted against independent claim 12 while Seacat alone and Seacat in combination with Mattice were asserted against independent claim 1.

Independent claim 12 is a method claim that recites:

- 12. A method of providing a touch-based Completely Automatic Public Turing Test To Tell Humans And Computers Apart (CAPTCHA) challenge on a portable computing device comprising:**
- a. automatically electing a manipulation challenge for a user with the portable computing device, wherein said manipulation challenge includes a set of physical touch instructions for the portable computing device for the user;**
 - b. automatically processing touch sensory data associated with user movements and/or manipulations of objects within a graphical interface of the portable computing device; and**
 - c. automatically determining if said user touch sensory data meets a required threshold for satisfying said set of physical touch instructions to qualify said user as a human.**

Exhibit 1001 (‘861 Patent) at 27:1-17.

Independent claim 1 also involves a similar method claim that states:

1. A method of providing a motion and/or orientation-based Completely Automatic Public Turing Test To Tell Humans And Computers Apart (CAPTCHA) challenge on a portable computing device comprising:

- a. automatically electing a manipulation challenge for a user with the portable computing device, wherein said manipulation challenge includes a set of physical manipulation instructions for the portable computing device for the user;
- b. automatically processing sensory data associated with user movements and/or manipulations of the portable computing device; and
- c. automatically determining if said user movements and/or manipulations from the user meet a required threshold for satisfying said set of manipulation instructions to qualify said user as a human.

A. SEACAT AND MATTICE DO NOT DISCLOSE THE “AUTOMATICALLY PROCESSING TOUCH SENSORY DATA ASSOCIATED WITH USER MOVEMENTS” LIMITATION OF INDEPENDENT CLAIM 12 OR THE CORRESPONDING LIMITATION OF INDEPENDENT CLAIM 1

Seacat fails to teach or suggest the “automatically processing touch sensory data associated with user movements” and “determining if said user touch sensory data...qualify said user as a human” limitations of independent claim 12 or the corresponding limitations of independent claim 1 (*i.e.*, “automatically processing sensory data associated with user movements and/or manipulations of the portable computing device” and “determining if said user movements and/or manipulations from the user...satisfy said manipulation instructions to qualify said user as a human.”). The independent claim language of the ‘861 Patent specifically requires that the actual user movements (*e.g.*, the equivalent of mouse movements such as touch movements on a screen) are being tracked to process the sensory data and determine if it is humanlike.

Seacat, however, is result-oriented and does not disclose detection of touch sensory data associated with user movements to determine if such touch sensory data is humanlike. Seacat only verifies, for example, whether an image is ultimately rotated within a five-degree margin of error of 90 degrees (*e.g.*, 85 to 95 degrees). Exhibit 1006 (Seacat) at FIG. 10, 5:24-29, 6:1-6, 7:34-42, 8:26-38. Seacat operates in the precise manner of other CAPTCHA tests of its era. CAPTCHAs in the early to mid-2000s compared user responses to the correct answers and determined if “the user’s wrong answers...[are] close enough to the actual answer” to determine if access should be granted. Exhibit 2001 (CAPTCHA Article) at 10-13.

The Seacat application compares the starting and end points but does not consider the path taken on the screen through the use of touch sensors to determine whether the user is human. Seacat discloses, “[t]he user’s hands 1020 and 1030 contact a display at two points 1025 and 1035, respectively. The user’s hands 1020 and 1030 then move in a clockwise direction 90 degrees which subsequently rotates star 1040. Once, the user is satisfied with the image rotation, the user may depress a ‘Complete’ button.” Exhibit 1006 (Seacat) at FIG. 10, 8:30-37. As Petitioners properly conclude, “the server compares the multi-touch response with a multi-touch answer and provides a pass/fail, retest result back to the multi-touch device.” Paper 1 (Petition) at 32.

Likewise, FIGS. 8-9 disclose the same result-oriented CAPTCHA system.

With respect to FIG. 8 of Seacat, the user moves his hands toward the soccer ball until the user is satisfied with the zoom area and then clicks complete. Exhibit 1006 (Seacat) at FIG. 8, 8:2-10. The system determines if the hands were close enough to the soccer ball to be deemed a correct answer rather than considering the path of movement taken by the hands. Similarly, FIG. 9 of Seacat depicts an arrangement in which the system determines if the user's hands were close enough to inside a wheel to be considered a correct answer without consideration of the user's hand movements to process the sensory data. Exhibit 1006 (Seacat) at FIG. 9, 8:17-23.

In contrast, the accused hCAPTCHA system Petitioners utilize and the '861 Patent consider more than just whether an answer is correct or close enough to correct. "hCAPTCHA collects information like mouse movements...touch events and gyroscope/accelerometer information." Exhibit 2002 (FAQs of hCAPTCHA) at 4. This type of mouse movement tracking to determine if the user is human did not become commercially available until the 2010s and is the subject of the '861 Patent claims and accused hCAPTCHA system/method. Exhibit 2001 (CAPTCHA Article) at 14-15. The '861 Patent's claims and hCAPTCHA system detect rigid and uniform movements and classify them as robotic whereas more random and imperfect movements are associated with humans. Exhibit 2002 (FAQs of hCAPTCHA) at 4; Exhibit 2001 (CAPTCHA Article) at 14-15.

Mattice does not cure this deficiency of Seacat. In fact, Petitioners do not

assert Mattice or any other prior art against this limitation with respect to independent claim 12. With respect to independent claim 1, Mattice is only applied against this limitation to suggest that “the sensory data in Seacat-Mattice is associated with movement and/or orientation of the portable computing device” and “[t]he instructions in Seacat-Mattice require manipulation via movement and/or orientation of the portable computing device itself as taught by Mattice and are thus ‘manipulation’ instructions as claimed.” Paper 1 (Petition) at 59-60.¹ However, Mattice does not relate in any way to CAPTCHA and therefore cannot disclose user movements related to orientation of a device in the CAPTCHA context. Mattice also does not disclose tracking user movements to determine whether they are human-like manipulations that are distinguishable from computer bots as required by claim 1 (*i.e.*, “automatically processing sensory data associated with user movements and/or manipulations of the portable computing device” and “determining if said user movements and/or manipulations from the user...satisfy

¹ The other alleged well-known prior art (iPhone, Yu, Lindsay) not applied in any specific combination with Seacat either do not mention CAPTCHA at all (iPhone) or do not adequately describe a CAPTCHA process that involves tracking user movements to determine whether they are human-like manipulations (Lindsay, Yu) that are distinguishable from computer bots as required by claim 1 (*i.e.*, “automatically processing sensory data associated with user movements and/or manipulations of the portable computing device” and “determining if said user movements and/or manipulations from the user...satisfy said manipulation instructions to qualify said user as a human.” Exhibit 1014 (Lindsay) at [0117]-[0118]; Exhibit 1043 (Yu) at [0043-0045].

said manipulation instructions to qualify said user as a human.”).

B. PETITIONERS DO NOT PRESENT AN ADEQUATE MOTIVATION TO COMBINE SEACAT AND MATTICE

Petitioners also do not include a reasonable explanation for why Seacat would be combined with Mattice. Seacat discloses multi-touch manipulation of images on a screen within a graphical user interface and the use of this system/method in the CAPTCHA context. Exhibit 1006 (Seacat) at 1:10-30; FIGS. 8-10. It does not discuss anything related to motion sensors or any system or method with the ability to convey information related to “movements and/or manipulation of the portable computing device” under the narrower construction Petitioners assert in Ground 3. While Mattice discusses having motion sensors, it does not disclose using these sensors for CAPTCHA-related security. Exhibit 1007 (Mattice). Indeed, Mattice “relates generally to gaming systems, and more particularly, to gaming systems which include handheld devices having motion detection capabilities.” Exhibit 1007 (Mattice) at [0003]. Mattice is directed to playing various games in the device’s graphical user interface by moving and orienting the device and does not mention CAPTCHA anywhere in the disclosure. Exhibit 1007 (Mattice) at [0137-46].

Petitioners assert that both Seacat and Mattice “describe techniques for improved access control and security.” Paper 1 (Petition) at 56. However, pointing to alleged similarities in references does not suffice as an articulated reason with rational underpinning to combine the respective teachings of the references—more

is required to support the legal conclusion of obviousness. *Matterport, Inc. v. Appliance Computing III, Inc.*, IPR2021-00936, Paper 15 at 22 (PTAB Nov. 17, 2021). The Board has routinely found that even if a Petitioner’s allegation is true with respect to similarity of references, this is insufficient to show why the skilled artisan would have combined the references to arrive at the subject matter recited in the claims. *Id.* at 23 (“Petitioner’s contentions here that the references are similar, even if true, are insufficient to show why the skilled artisan would have combined Cowtan and Bell to arrive at the subject matter recited in the claims.”). Permitting combination of a CAPTCHA touch screen system with a gaming system that is motion controlled and unrelated to CAPTCHA would be particularly inappropriate without a detailed explanation for why a skilled artisan would have combined the references. The Petitioners’ explanation for why a skilled artisan would have combined Seacat and Mattice fails to meet this standard.

The Petition alleges that a person of skill in the art had numerous reasons to combine Mattice’s motion/orientation system with Seacat’s user interface CAPTCHA system because the user “could be required to rotate the device 90° to rotate the star 90° in Seacat’s Figure 10” and “a user could be challenged to perform a touch-based CAPTCHA as in FIG. 8 and 9 and a motion/orientation-based CAPTCHA like using rotation of the device to rotate the star in Figure 10.” Paper 1 (Petition) at 57. However, providing contentions for why references “could” have

been combined is insufficient. *Matterport, Inc. v. Appliance Computing III, Inc.*, IPR2021-00936, Paper 15 at 24 (PTAB Nov. 17, 2021). Petitioners are required to identify a persuasive reason why a skilled artisan, viewing the teachings of Mattice would be motivated to modify Seacat. *Id.* Petitioners provide no such rationale. Seacat presents a user interface, touch-based CAPTCHA solution that does not disclose motion sensors or any motion-based technology. In contrast, Mattice only discloses motion/orientation-based gaming technology with no disclosure or discussion of CAPTCHA. Even if these technologies “could” have been combined, the Petitioners present no reasonable explanation why a person of skill in the art would be motivated to modify disclosures related to such disparate fields of technology to arrive at the claimed invention.

Petitioners further allege that “[a]dapting Seacat to incorporate Mattice’s conventional motion/orientation sensors was well within a POSA’s capabilities.” Paper 1 (Petition) at 58. However, this is insufficient rationale for an obviousness combination. *Belden Inc. v. Berk-Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“obviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”). The mere fact that combining references may be within a person of skill in the art’s capabilities is insufficient. Petitioners have not established that it would have been obvious to modify the Seacat system with

what is described in Mattice. *In re Giannelli*, 739 F.3d 1375, 1380 (Fed. Cir. 2014) (“the mere *capability* of pulling the handles is not the inquiry that the Board should have made, it should have determined whether it would have been obvious to modify the prior art apparatus to arrive at the claimed rowing machine.”).

Petitioners also argue that “the implementation would have involved no more than using a known technique (a user interface that interprets motion/orientation of a portable computing device) to improve similar devices (other portable computing devices) in the same way (interpreting movement/orientation data) to yield predictable results (improved flexibility and security).” Paper 1 (Petition) at 58. This is precisely the type of conclusory analysis the Board has ruled inadequate as an articulated reason with a rational underpinning to combine the respective teachings of the references. *Matterport, Inc. v. Appliance Computing III, Inc.*, IPR2021-00936, Paper 15 at 23 (Nov. 17, 2021). Petitioners present no reasonable explanation why a person of skill in the art would look to a gaming disclosure involving rotation of a device and combine it with a CAPTCHA-related disclosure for touch screen devices without motion sensors.

IV. CONCLUSION

Patent Owner has shown that Petitioners’ proposed grounds of unpatentability fail because they utilize a combination of references that has been improperly combined and/or does not disclose or suggest each and every limitation

as recited by the '861 Patent claims. For at least the foregoing reasons, the Petition's grounds for unpatentability are legally deficient and trial should not be instituted.

Date: July 12, 2023

Respectfully submitted,

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CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24(b)(1)

I, the undersigned, do hereby certify that the foregoing Patent Owner Preliminary Response, including footnotes, contains 4,212 words, as measured by the Word Count function of Word 2007. This is less than the limit of 14,000 words as specified by 37 C.F.R. § 42.24(b)(1).

/s/ Gregory S. Donahue
Gregory S. Donahue

CERTIFICATE OF SERVICE

I hereby certify that on this 12th day of July 2023, a true and correct copy of the foregoing PATENT OWNER HUMAN DIFFERENTIAL INTELLIGENCE LLC'S PRELIMINARY RESPONSE UNDER 37 C.F.R. § 42.107 was served by electronic mail upon the following counsel of record.

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